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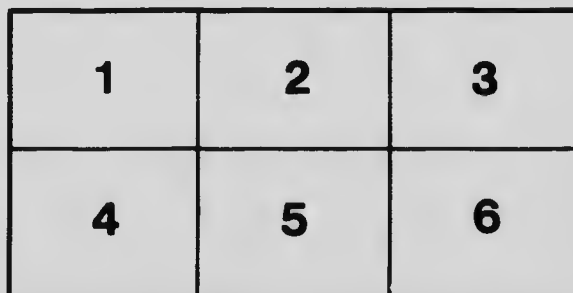
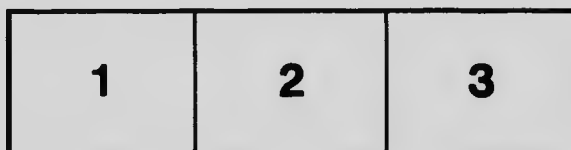
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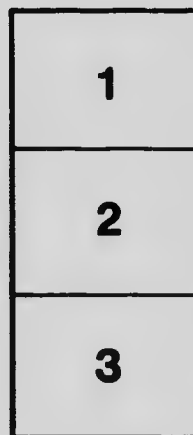
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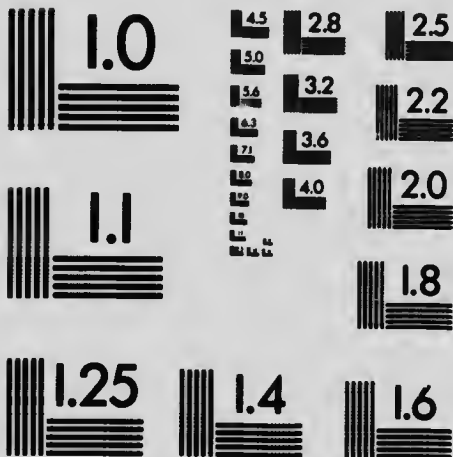
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*President*—H.R.H. THE DUKE OF CONNAUGHT, K.G., ETC.

*Chief Scout*—LIEUT.-GEN. SIR ROBERT BADEN-POWELL,  
K.C.B., K.C.V.O., ETC.

*Headquarters*—25 Buckingham Palace Road, London, England.

## THE CANADIAN GENERAL COUNCIL OF THE BOY SCOUTS ASSOCIATION.

(Incorporated by Act of Parliament of Canada).

*Offices*—Banque Nationale Building, Ottawa, Ontario.

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K.G., G.C.M.G., P.C., ETC.  
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*Provincial Secretary and Acting Commissioner*—The Rev. and Hon. T. R.  
Heneage, Central Building, Victoria.

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# The Boy Scouts Association Handbook for Canada

Based on the System of Training contained in SCOUTING  
FOR BOYS, by Lieut.-General Sir Robert Baden-  
Powell, K.C.B., K.C.V.O., LL.D., Chief Scout  
and founder of the Boy Scouts  
Association

ADAPTED TO CANADIAN USES  
By GERALD H. BROWN  
*Honorary Dominion Secretary*

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for the Canadian General Council

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1919

## THE SCOUT PROMISE

*On my honour I promise that I will do my best—*

*To do my duty to God and the King.*

*To help other people at all times.*

*To obey the Scout Law.*

## THE SCOUT LAW

- (1) A Scout's honour is to be trusted.
- (2) A Scout is loyal to the King, and his officers, and to his parents, his country and his employers or employees.
- (3) A Scout's duty is to be useful and to help others.
- (4) A Scout is a friend to all, and a brother to every other Scout.
- (5) A Scout is courteous.
- (6) A Scout is a friend to animals.
- (7) A Scout obeys orders of his parents, Patrol Leader, or Scoutmaster without question.
- (8) A Scout smiles and whistles under all difficulties.
- (9) A Scout is thrifty.
- (10) A Scout is clean in thought, word and deed.

## WHAT SCOUTING MEANS

### To Boys—

Good comradeship with other boys in out-of-door pursuits and games.

Training in resourcefulness, observation and self-reliance.

Instruction in handicrafts or hobbies, which may help them to make their way in life.

A chance of being ready, when need arises, for any public service that a boy can render.

### To Parents—

A safe outlet for boy energy and enthusiasm.

Out-of-school education for their boys.

Outdoor interests that make for their boys' health, strength and happiness.

The strengthening of boy character through the Scout Law and practice—under such influences the boy mind is more easily turned to the higher things of life.

### To the Nation—

The conservation of boy life.

The training of the rising generation in intelligent patriotism and earnest public spirit.

A potent force for international peace and goodwill.



## Membership Certificate

This is to certify that.....

of..... Province of.....

Age..... Height..... Weight.....

is a member of the.....

Troop of Boy Scouts.

Date.....

.....  
Warrant Scoutmaster.

## MY PROGRESS AS A SCOUT

Date

Became Tenderfoot Scout.....

Second Class Scout.....

First Class Scout.....

King's Scout.....

Qualified for All Round Cords—

Grade (a).....

Grade (b).....

Grade (c).....

Promoted to—

Second.....

Patrol Leader.....

Troop Leader.....

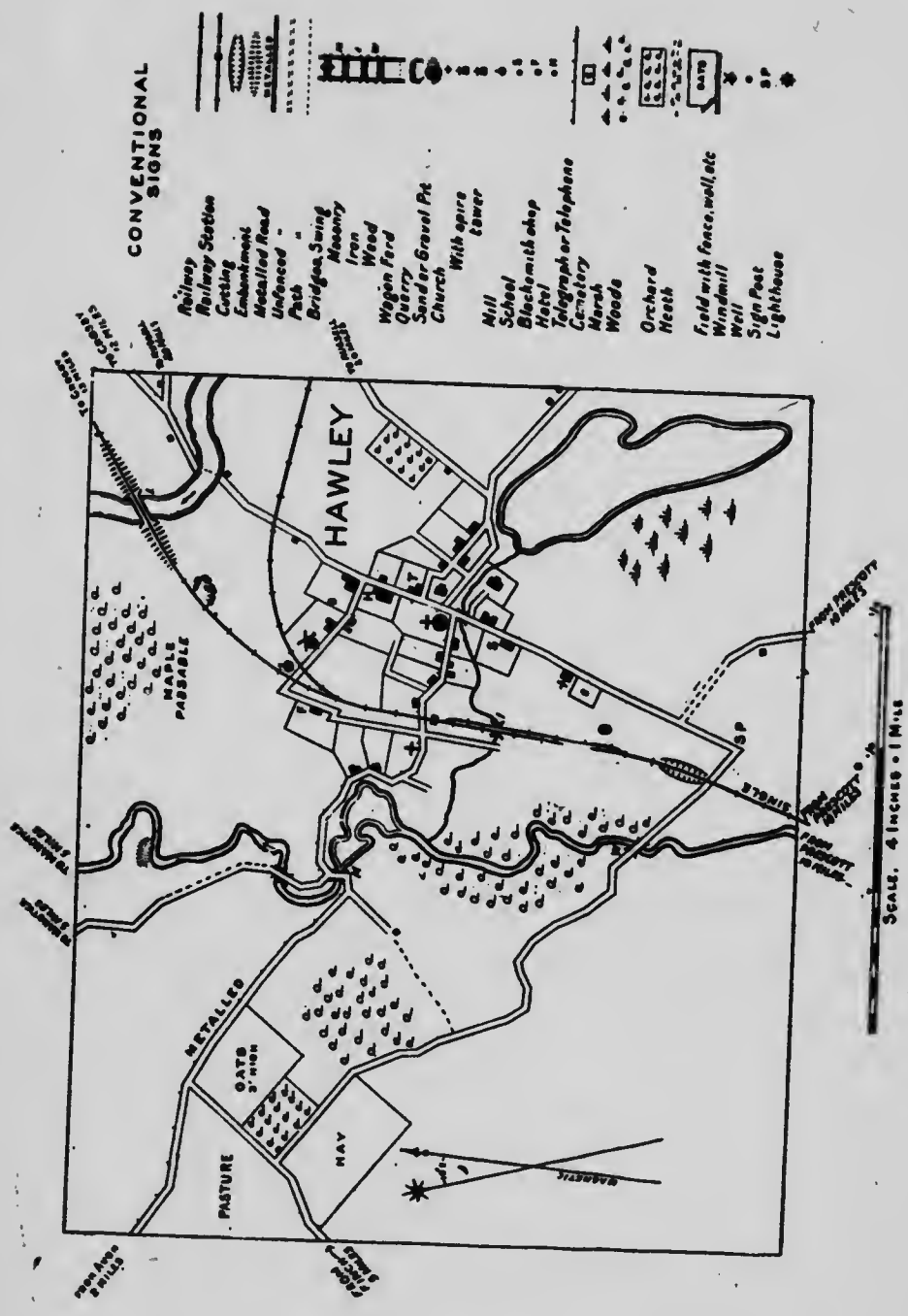
# QUALIFIED FOR PROFICIENCY BADGES

<i>Subject</i>	<i>Date</i>	<i>Subject</i>	<i>Date</i>
Ambulance .....		Master-at-Arms .....	
Airman .....		Mason .....	
Artist .....		Metal Worker .....	
Basket Worker .....		Miner .....	
Bee Keeper .....		Missioner .....	
Blacksmith .....		Musician .....	
Boatman .....		Naturalist .....	
Bugler .....		Pathfinder .....	
Camper .....		Photographer .....	
Carpenter .....		Pilot .....	
Citizen .....		Pioneer .....	
Clerk .....		Piper .....	
Cook .....		Plumber .....	
Cyclist .....		Poultry Farmer .....	
Dairyman .....		Printer .....	
Engineer .....		Prospector .....	
Entertainer .....		Public Health Man .....	
Farmer .....		Rescuer .....	
Fireman .....		Signaller .....	
Fisherman .....		Stalker .....	
Forestry .....		Starman .....	
Friend to Animals .....		Stockman .....	
Gardener .....		Swimmer .....	
Handyman .....		Surveyor .....	
Healthy Man .....		Tailor .....	
Horseman .....		Telegraphist .....	
Interpreter .....		Textile Worker .....	
Laundryman .....		Watchman .....	
Leatherworker .....		.....	
Marksman .....		.....	

## ERRATA

- Page 20.—10th line from the bottom, substitute the word "seldom" for "never."
- Page 25.—8th line from the top, the word "it" should read "its."
- Page 28.—Title of picture "Canadian Boy Scouts" should read "Ontario Boy Scouts."
- Page 30.—2nd line from the bottom, should read "page 616."
- Page 31.—Under section 2, age limits should read "12 to 18" instead of "11 to 18."
- Page 45.—Section 18, 4th line, (see page 391) should read (see page 398). Insert the word "Sir" after "Yes" at both points in middle of page.
- Page 50.—Section 5, after (15) the word "Fanting" should read "Fainting."
- Page 53.—Last paragraph should read "Must obtain the use of some sort of club-room for Scout meetings."
- Page 54.—Last line, reference should read (see pages 46 and 81).
- Page 57.—Section 32, delete the words "holding office and warrant as the representative of the Canadian General Council" appearing on second and third lines.
- Page 59.—Section 39, last line of the 2nd paragraph should read (see p. 56).
- Page 77.—Section 1, "Public Health Man," the words "and venereal diseases" should be omitted.
- Page 81.—Section 42, delete the last paragraph.
- Page 87.—Section 52, 3rd paragraph, 1st line, "A picket of two good swimmers," should read "A picket of not less than two good swimmers."
- Page 88.—Section 57, last three lines should read "the Provincial office directly for badges, warrants, awards, or for other information."
- Page 89.—Section 59, substitute in lieu of last sentence the words "The two flags should never be flown on one pole."
- Page 89.—Section 61, last line, should read "see page 575."
- Page 98.—Omit the word "great" in 1st line of 4th paragraph: "Remember, a Scout always considers it a great disgrace."
- Page 117.—11th line from the bottom of page, add the words "when North of the Equator" to sentence "The North end is always on the same side of the pole as the circle."
- Page 118.—About center of page delete the words "either North or South" and insert the words "North when North of the Equator and South when South of the Equator."
- Page 122.—15th line from the top, alter to read "of the oceans, and very slightly, those of the lakes, so that."
- Page 122.—Omit all the words at end of 4th paragraph from "Red dawn" to "means wind."
- Page 129.—Delete the word "single" in specimen map.
- Page 130.—7th line from the top, the words "From Barrie" to read "From Avon."
- Page 130.—Paragraph beginning "Bridges" should read "Bridges.—Always indicate the material a bridge is composed of, as masonry, iron, wood, and construction, e.g. swing."
- Page 130.—On the 3rd line from the bottom, delete the words "page 79."
- Page 138.—See reference \*T The Tenderfoot test, the following knots should be marked "\*T":—Reef, page 139; Sheet Bend, p. 140; Bowline, p. 140; Sheep Shank, p. 141; Clove Hitch, p. 141; Fisherman's, p. 143.

- Page 143.—Cross references in two places to read (see page 158).
- Page 153.—Insert subheading "Edible Barks" over 3rd paragraph, commencing "It may be interesting"; and over the last paragraph, commencing "Native hunting parties" insert the subhead "Cache."
- Pages 156-7.—Spelling of "Ax" to read "axe" wherever it appears.
- Page 169.—2nd line in "Deadfalls," the word "latter" should read "former."
- Page 188.—7th line of 3rd paragraph, "on it as the same time" should read "on it at the same time."
- Page 247.—3rd line under "The Bats" the word "animals" should read "mammals."
- Page 289.—2nd last line of 3rd paragraph, the word "later" should read "latter."
- Page 321.—9th line from bottom, the word "fed" should read "feed."
- Page 348.—7th line from top, the word "front" should read "back."
- Page 427.—2nd sentence, 2nd paragraph, delete "Try to and."
- Page 427.—Under the heading "How to Improvise Ropes," 2nd sentence to read "To lower person from a window to the ground use the bowline knot."
- Page 430.—About middle of page, the word "raising" to read "raise."
- Page 431.—About middle of page, delete the words "the opposite" and insert after the word illustration: "(See page 432)." Last line on page "616" to read "632."
- Page 434.—3rd paragraph from top of page, omit the words "In salt water, the human body weighs less than it does in fresh water."
- Page 458.—Section 3, the word "below" should read "above."
- Page 459.—Reference, 2nd line from top to read: "(See page 431.)"
- Page 466.—2nd line in last paragraph omit "but no spirits."
- Page 474.—4th paragraph last sentence should read "If the boots are filled with heated grain or gravel they will absorb or evaporate the moisture and dry out the leather without injury."
- Page 478.—1st paragraph, 9th line, "temperature" should read "temperance."
- Page 479.—12th line from the top, the word "any" should read "much."
- Page 482.—Exercise 8, omit the words "raise body on heels" and insert "raise the toes."
- Page 500.—9th line from the top, the word "Colonels" should read "Lieutenant-Colonel."
- Page 628.—The subheading "Missionary" should read "Missioner."
- The illustrations on pages 396 and 397 were drawn by Mr. Daniel Beard for the Handbook for Boys of the Boy Scouts of America and were reproduced by premission.



Specimen map showing conventional signs  
 Contributed by J. L. Crawford, Asst. S.M.



## FOREWORD

By

LIEUT.-GEN. SIR ROBERT BADEN-POWELL, K.C.B., K.C.V.O.,  
LL.D., *Chief Scout.*

I am delighted with this book.

It marshals my ideas with greater clearness and conciseness than I could have done myself.

Coming from those who have experimented with the scheme in Canada it confirms my hope that Scouting might with minor adaptations be as useful for the young citizens of that Dominion as it has proved to be in other British States.

But whatever the details may be it is essential to the success of the system that the same spirit should permeate the Movement wherever it may exist.

I would, therefore, emphasize the following as the outstanding points which you develop as being essential to that spirit:—

The Promise and the Scout Law as the guiding principle for both Scoutmasters as well as Scouts.

Organization on the Patrol System.

Responsibility of the Patrol Leader.

Nature Lore and Woodcraft, Camping and Pioneering, *i.e.*, the out-of-doors, as the important means to leading the boy to develop for himself Character, Handiness and Physical Health.

Once you grasp the fact that it is these points which make us neither a Brigade nor a Sunday School, but a boy's own road to manliness, you will find yourself successfully doing a good thing for your younger brothers and for your country.

And for yourself!

Good luck and good Scouting to you.



Robert Baden-Powell





## FOREWORD

By

HIS EXCELLENCY THE DUKE OF DEVONSHIRE, K.G., G.C.M.G.,  
G.C.V.O., P.C., ETC., GOVERNOR-GENERAL OF CANADA

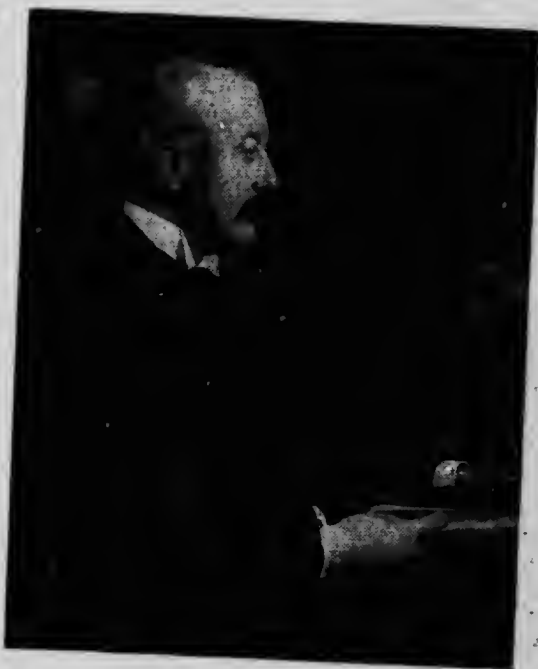
*Chief Scout for Canada.*

The War has been brought to a victorious conclusion and although the Boy Scouts Movement neither was nor is in any sense a military organization, the part taken by those who received their early training under its auspices has added honour and distinction to its records and proved in the highest degree the value of its work.

Of the assets of any country by far the greatest is the character of its inhabitants, and by building up on sure and safe foundation a nation and empire thoroughly imbued with all that the Movement stands for we shall be rendering a priceless service not only to our own but to future generations.

Our attention and efforts must forthwith be directed to the permanent maintenance of peace and to the work of reconstruction.

By its inception, its principles, and its history, the Boy Scouts Movement can be fully trusted to play a notable part in these great objects and the timely publication of the present volume will, I know, be of real and practical assistance as well as of deep interest to all who have its true welfare at heart.



*Devonshire.*



## PREFACE

Officers and members of the Boy Scouts Association in different parts of Canada have long felt the need of a Handbook adapted in its detail to Canadian boy life.

The present volume has been prepared in response to this requirement. In principle it is based, with his kind consent, upon Sir Robert Baden-Powell's standard book "Scouting for Boys."

Our Honorary Secretary, Mr. Gerald H. Brown, at the request of the Canadian General Council, undertook to apply the principles of Sir Robert Baden-Powell's system of training to the conditions of our life in Canada. It is to his pen that we owe a large portion of the present Handbook.

The views of the Provincial Secretaries were obtained at a Conference summoned for the purpose at Ottawa. Advice and assistance were also obtained from experts on various phases of Scoutcraft in different parts of the Dominion.

The Association is indebted to Miss Faith Fyles, Assistant Naturalist of the Department of Agriculture, Ottawa, for her drawings and notes on Canadian wild flowers; to Prof. Geo. M. Wrong, of the University of Toronto; Mr. R. H. Campbell, Director of Forestry; Sir Frederic Stupart, Director of the Meteorological Service of Canada; Mr. J. G. Macphail, of the Department of Marine, Ottawa; Messrs. F. W. Waugh, Stuart Schofield, James M. Macoun, P. A. Taverner, R. M. Anderson and Clyde L. Patch, of the staff of the Geological Survey of Canada; Mr. Daniel Carter Beard, National Scout Commissioner of the Boy Scouts of America; Mr. W. A. Found, Chief Superintendent of Fisheries, Ottawa; Mr. Lesslie R. Thomson, of Montreal; Mr. W. E. Harper, of the Dominion Astronomical Observatory, Ottawa; Dr. C. J. Copp, Assistant Commissioner of the St. John Ambulance Association for Ontario; Mr. Ernest Thompson Seton; Prof. A. L. Cochrane, of Upper Canada College, Toronto, and to Prof. John A. Stiles, of the University of New Brunswick. The Boy Scouts of America have kindly consented to the use in this volume of certain drawings from their Handbook for Boys, and the Canadian General Council values most highly this mark of consideration from the leaders of the Boy Scouts

of America. Valuable assistance was also rendered by Mr. Frederic R. Perrott and Mr. H. O. Eaman, of the staff of the Canadian General Council, in connection with various features of the Handbook.

Every care has been taken to make the book as comprehensive and accurate as possible. There may be, however, omissions and oversights, for the correction of which in subsequent editions suggestions will be gratefully accepted.

The preparation of the volume has been no easy task. We believe that it has been successfully accomplished. For this, and for the zeal and devotion that has characterised his work, the Association is very greatly indebted to Mr. Gerald H. Brown.

EDITING COMMITTEE.

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# INTRODUCTORY

## Aim of Scouting

The aim of the Boy Scouts Association is to develop good citizenship among boys by forming their character—training them in habits of observation, obedience and self-reliance—inculcating loyalty and thoughtfulness for others—teaching them services useful to the public and handicrafts useful to themselves and promoting their moral and physical development by true comradeship and by healthy open air pursuits and games. The motto of the Association is "Be Prepared," which means that the Scout is to be always in a state of readiness in mind and body to do his duty and meet any emergency.

To be a Boy Scout means to be able and willing to do the right thing at the right moment, whether for yourself or others. It is the aim of the Scout to be ready in heart and hand for whatever betides. He seeks by learning to do small things well to qualify himself for the greater tasks and opportunities of life. He knows that before he can take the older scout's place, he must of necessity learn to "be prepared."

The Scouting programme is not designed to take the place either of religious instruction or of school training but is supplemental to both.

In most people's minds scouting is associated with soldiering and fighting. A scout is generally a soldier who is chosen, for his cleverness and pluck, to go out in front of an army in war, to find out where the enemy forces are, and to report to the commander all about them. But besides war scouts there are peace scouts also. The aim of the Boy Scouts Association is training not for war but for peace. Peace Scouting includes the work and attributes of the pioneers of civilization, those men who are working in the farthest corners of the earth reclaiming it for their race, whether as explorers, missionaries, hunters, or police—they are the Scouts of the nation. To carry out their work they have to be resourceful and self-reliant, to be able to endure climate dangers, and difficulties with cheerfulness, to be helpful to each other as well as self-helpful; to be loyal to their employer or government, to do

## Boy Scouts

their work far from applause or reward, simply because it is their work, in a word they have to be *men* in the best sense of the term if they are going to do any good.

### Necessity for Scout Training

The necessity for Scout training must be obvious to all. The safety of a nation depends not alone on its fighting power, but also and chiefly on character, on purity of personal and home life, on commercial worth and integrity, and upon high standards of public service; at the same time no nation can be safe that is unprepared to defend itself should any danger threaten its liberty. High moral ideals, integrity and energetic industry, together with strong unselfish patriotism, must characterize a nation that will live and grow and serve.

For such high purposes all citizens must be trained. The Boy Scout Movement realizes the vital necessity and far reaching value of work among boys. It is an effort based on wide experience of boy life to train each generation of boys in the development of character, by binding them together in free but guided companionship in which they will best learn to sacrifice their own ends for the good of the whole, and "be prepared" for good citizenship and patriotic loyalty.

Here then lies a glorious field for work on the part of men who have their country's interest at heart. The war has stirred up patriotism in many who were formerly unresponsive to its call and who, once started in that direction, will be wishful to continue to "do their bit." Let them come and train the next generation to be men as good as themselves.

### Scope of Scout Training

From the boys' point of view Scouting puts them into fraternity gangs, which is their natural organization, whether for games, mischief, or loafing; it gives them a smart dress and equipments; it appeals to their imagination and romance; and it engages them in an active, open-air life.

From the parents' point of view it gives physical health and development; it teaches energy, resourcefulness, and handicrafts; it puts into the boy discipline, pluck, chivalry and patriotism; in a word, it develops *character*, which is more essential than anything else to a boy for making his way in

life. The principle on which Scouting works is that the boy's ideas are studied, and he is encouraged to educate himself instead of being instructed.

From the national point of view the aim is to make the rising generation into good citizens.

Briefly the Scout training divides itself under the four heads following:

1. **INDIVIDUAL CHARACTER**, training in resourcefulness, observation, self-reliance to gain the Scout badges.



If I were a boy again  
From the painting by the Late Lieut. Ernest S. Carlos.  
By kind permission.

2. **HANDICRAFTS**, or hobbies which may help a boy to make his way in life, for which various "Proficiency" badges are given.

3. **SERVICE FOR THE STATE**, such as fire brigade, ambulance, missionary, sailor, life-saving, or other collective public duty by the troop, including also many helpful activities in aid of the war cause.

4. **PHYSICAL HEALTH**, by encouraging the boy to take plenty of exercise and to look after his body.

## Boy Scouts

### Tributes to Value of Scouting

As great an authority as Lord Rosebery has said of the Scout Movement: "If I was to form the highest ideal for my country, it would be this, that it should be a nation of which the manhood was exclusively composed of men who had been or who were Boy Scouts, and who were trained in the Boy Scout theory. Such a nation would be the honour of mankind. It would be the greatest moral force that the world has ever known."

The following appreciative tribute to the work of the Boy Scouts Association has also been received from the Rt. Hon. D. Lloyd George, the British Prime Minister.

"It is perhaps only since the beginning of the war, during these three years of constant drain upon the manhood of our nation, that we have come to realize the great value of the Scout Movement which your 'Chief' inaugurated six years before. We all now see the meaning of the motto represented by the initials B.P., and which the Association has lived up to with such sincerity and success.

"I do not think I am exaggerating when I say that the young boyhood of our country, represented by the Boy Scouts Association, shares the laurels for having been prepared with the old and trusted and tried British Army and Navy. For both proved their title to make the claim when the great war broke upon us like a thief in the night. It is no small matter to be proud of that the Association was able within a month of the outbreak of war to give the most intelligent and energetic help in all kinds of service. When the boyhood of a nation can give such practical proofs of its honour, straightness, and loyalty, there is not much danger of that nation going under, for those boys are in training to render service to their country as leaders in all walks of life in the future.

"I can only say to all sections of the Movement, old Scouts and new Scouts, Scout officers and Patrol Leaders, go forward; stick to it to the end."

### The Scout Promise and Law

The promise which every boy takes on joining this Association is in the terms following:

On my honour I promise that I will do my best—  
 To DO MY DUTY TO GOD AND THE KING,  
 To HELP OTHER PEOPLE AT ALL TIMES,  
 To OBEY THE SCOUT LAW.

The Scout Law is as follows:

1. A SCOUT'S HONOUR IS TO BE TRUSTED.

If a Scout says "On my honour it is so," that means that it is so, just as if he had taken a most solemn oath.

Similarly, if a Scout officer says to a Scout, "I trust you on your honour to do this," the Scout is bound to carry out the order to the very best of his ability, and to let nothing interfere with his doing so.

If a Scout were to break his honour by telling a lie, or by not carrying out an order exactly when trusted on his honour to do so, he may be directed to hand over his Scout badge, and never to wear it again. He may also be directed to cease to be a Scout.

2. A SCOUT IS LOYAL to the King, and to his officers, and to his parents, his country, his employers, or to his employees, and his comrades. He must stick to them through thick and thin against anyone who is their enemy or who even talks badly of them.

3. A SCOUT'S DUTY IS TO BE USEFUL AND TO HELP OTHERS. And he is to do his duty before anything else, even though he gives up his own pleasure, or comfort, or safety to do it. When in difficulty to know which of two things to do, he must ask himself, "Which is my duty?" that is, "Which is best for other people?"—and do that one. He must Be Prepared at any time to save life, or to help injured persons. And *he must try his best to do at least one good turn* to somebody every day.

4. A SCOUT IS A FRIEND TO ALL, AND A BROTHER TO EVERY OTHER SCOUT.

Thus if a Scout meets another Scout, even though a stranger to him, he must speak to him, and help him in any way that he can, either to carry out the duty he is then doing, or by giving him food, or, as far as possible, anything that he may be in want of. A Scout must never be a SNOB. A snob is one who looks down upon another because he is poorer, or who is poor and resents another because he is rich. A Scout accepts the other man as he finds him, and makes the best of him.

"Kim," the boy Scout, was called by the Indians "Little friend of all the world," and that is the name that every Scout should earn for himself.

5. A SCOUT IS COURTEOUS: That is, he is polite to all—but especially to women and children, and old people and invalids, cripples, etc. And he must not take any reward for being helpful or courteous.
6. A SCOUT IS A FRIEND TO ANIMALS. He should save them as far as possible from pain, and should not kill any animal unnecessarily, for it is one of God's creatures. Killing an animal for food or an animal which is harmful is allowable.
7. A SCOUT OBEYS ORDERS of his parents, patrol leader, or Scoutmaster without question.  
Even if he gets an order he does not like he must do as soldiers and sailors do, and as he would do for his captain in a football team, he must carry it out all the same *because it is his duty*; and after he has done it he can come and state any reasons against it: but he must carry out the order at once. That is discipline.
8. A SCOUT SMILES AND WHISTLES under all difficulties. When he gets an order he should obey it cheerily and readily, not in a slow, hang-dog sort of way.  
Scouts never grumble at hardships, nor whine at each other nor swear when put out, but go on whistling and smiling. When you just miss a train, or someone treads on your favourite corn—not that a Scout ought to have such things as corns—or under any annoying circumstances, you should force yourself to smile at once, and then whistle a tune, and you will be all right.  
The punishment for swearing or using bad language is for each offence a mug of cold water to be poured down the offender's sleeve by the other Scouts. It was the punishment invented by the old British Scout, Captain John Smith, three hundred years ago.
9. A SCOUT IS THRIFTY, that is, he saves every penny he can, and puts it into the bank, so that he may have money to keep himself when out of work, and thus not make himself a burden to others; or that he may have money to give away to others when they need it.
10. A SCOUT IS CLEAN IN THOUGHT, WORD, AND DEED, that is, he looks down upon a silly youth who talks dirt, and he

does not let himself give way to temptation either to talk it or to think, or to do anything dirty.

A Scout is pure and clean-minded and manly.

### Origin and Growth of the Movement

The Boy Scouts Association was organized in Great Britain in 1908, under the patronage of His Majesty the King, and under the leadership of Lieut.-General Sir Robert Baden-Powell, and grew out of the ready acceptance in the United Kingdom of a plan which had previously been launched by Sir Robert Baden-Powell for the training of boys for citizenship. In the ensuing years the Scout Movement has spread throughout the civilized world, and has won for itself a total membership of between half a million and a million lads of all nationalities, creeds and colours, commanding wherever it is known the support alike of parents and boys and of all those interested in the welfare of boys.

Boy Scout representatives from eighteen different countries attended an international rally held at Birmingham, England, in the summer of 1913.

Incorporation was granted to the Association by Royal Charter in 1913.

### Basis of Organization

The basis of organization is shown in the chart which will be found at page 33. The Movement throughout the Empire is regulated by a representative Governing Council having its headquarters in London, England, to which a Headquarters Committee is responsible for the general administration.

The basis of organization in Canada corresponds to the divisions of the country. The Canadian General Council, incorporated by Act of Parliament in 1914, which assists the Chief Scout for Canada in promoting generally the objects of the Movement in this country, is representative of the work in all of the nine Provinces and maintains a headquarters office in Ottawa. The Canadian General Council serves also as a link between the British Headquarters and the work in the several Canadian Provinces. Councils have been formed in each of the Provinces to promote the welfare of the Movement in their respective areas.

Local Associations are in turn responsible to the Provincial Councils for the efficient carrying on of the work in their various districts.



H.R.H. the Duke of Connaught, K.G., etc.,  
President Boy Scouts Association

His Royal Highness the Duke of Connaught, former Governor - General of Canada, has taken a keen interest in this work since its very inception and did a great deal for its advancement in Canada during his tenure of the office of Chief Scout. The Duke of Connaught at present holds office as President of the Boy Scouts Association, the parent body of the Scout Movement throughout the Empire.

The Movement in Canada dates from 1909

and has been of very rapid growth, the total membership in June, 1918, according to the official census return, being 18,623. It is estimated that in the preceding seven years at least seventy-five thousand lads in Canada between the ages of eleven and eighteen have enjoyed the benefits of the Boy Scout training in all that makes for character and good citizenship.

The Movement, indeed, is now almost world wide in its representation. Its principles appear to be adaptable to every country and this promises a bond of closer sympathy and comradeship between Great Britain and the other portions of the Empire, and also between the British Empire and other nations, such bond being conducive to peace in the world.



## To Become a Scout

To become a Scout a boy must be between the ages of twelve and eighteen.

Scouts are grouped for purposes of training into patrols under the direction of a senior boy who is known as the Patrol Leader. Two or more patrols constitute a troop, which is in turn controlled and directed by a Scoutmaster who must be of at least twenty-one years of age and of a character and general fitness suited to the responsibilities involved.

## Training is Progressive

The whole plan of training of the Boy Scouts Association is progressive and has been so worked out that boys may be advanced from one class to another on passing certain tests, thus finding new and more complex interests as their training proceeds, by which their character is formed along lines both of knowledge and of service for manhood and citizenship.

A boy on joining the Scouts is enrolled as a Tenderfoot, after passing the prescribed tests and taking the Scout's three-fold promise. The badge of the Tenderfoot Scout is worn in the buttonhole, and is in the form of the fleur-de-lis which shows the north on a map or compass. It is the badge of the scout in the Army, because he shows the way; so, too, a peace scout shows the way in doing his duty and helping others.

After having learned sufficient to pass the tests one may go on from the Tenderfoot stage, to win the badges of Second Class Scout and First Class Scout. That of the Second Class Scout is a scroll, being turned up at the ends like a Scout's mouth because he does his duty with a smile and willingly. On the scroll is inscribed the motto "Be Prepared," which means that a Scout must always be prepared at any moment to do his duty and to face danger and emergency in order to help his fellow men. A knot is tied to the scroll to remind the Scout to do a good turn to someone daily. The badge of the First Class Scout consists of an arrowhead and scroll.

When a boy has become a First Class Scout he may also qualify for and wear various proficiency badges listed in chapter I of the present Handbook. Second Class Scouts may also qualify and wear any of these proficiency badges up to the number of six.

Then, there is the badge of the King's Scout for the boy

who is qualified to take his part, if need be, in the country's service by being able to guide a party as pathfinder anywhere within a five mile radius of his own headquarters by day or night, and to give general directions to districts or towns within a twenty-five mile radius, to find food, forage, horses and motors and to carry a message, either in his head, or on paper, on foot, on bicycle or on horseback. The King's Scout must be trained, moreover, in marksmanship, signalling, rescuing, first aid, and other things besides, for which he is permitted to wear a badge in the form of a crown on his left arm.

#### Sea Scouting

Sea Scouting constitutes a separate branch of the work of the Boy Scouts Association, which has been introduced into



British Columbia Sea Scouts

Canada, and under competent direction may be made of distinct service to all concerned. The plan of organization for Sea Scout work provides for careful supervision in the interests of safety. All those desiring information on this subject will do well to communicate at the very outset with the Provincial officers. A special text book has been prepared for use

in connection with Sea Scouting and approved by the Association, entitled "Sea Scouting and Seamanship for Boys," by W. Baden-Powell, K.C.

Throughout the war large numbers of the British Sea Scouts have been employed by the Admiralty on the coast-watching service all around the shores of Britain, thereby relieving the adult coastguardsmen and enabling them to join the fleet and go to sea. High tribute has been paid by the Admiralty to the practical value of the Sea Scouts' work and so satisfied were the authorities with the boys' service as coastguards that they invited also the help of the Scouts in very large numbers for duties with the auxiliary fleet, on hospital ships, in the trawler section, and as signallers.

#### Wolf Cubs

There is a junior branch of the Scout Movement known as



Manitoba Wolf Cubs.

the Wolf Cubs, which is designed to meet the eagerness of a large number of small boys who want to be Scouts and who are too young. Wolf Cubs must be over eight and under twelve years of age. These juniors are not put to the same tasks and tests as the Scouts. Yet the games and other activities in which they take part are helpful steps towards a knowledge of Scouting. The Cub motto "Do Your Best" is an incentive to ambition whilst the two-fold promise of obedience and self-control taken by each Cub teaches unselfishness, which is also an outstanding feature of the Scout law.

The Cubs are grouped into patrols of six each, known as sixes. Any number of Cubs may be grouped into what is known as a pack, which is the unit corresponding to the Scout troop. Packs may be either organized independently of Scout troops or in connection with them *but the training of the Cubs should in all cases be kept separate from that of the Scouts, and before any steps are taken for the formation of a Wolf Cub pack, it is required that the consent shall first be obtained of the District Commissioner of the Boy Scouts Association, or if there is no District Commissioner, of the Provincial Commissioner, who may be addressed through the Provincial headquarters.*

The system of training of Wolf Cubs is dealt with in a separate handbook, known as the Wolf Cub Handbook, published by Sir Robert Baden-Powell, in 1916, and since accepted and adopted as the authorized handbook for this branch of the Association's work in Canada. Copies of the Wolf Cub Handbook may be obtained from the several Provincial headquarters in any cases where this book is not on sale by the local book dealers.

#### SUMMARY OF SCOUT TRAINING

To be a Scout one must know by personal acquaintance something of the great world out of doors which happily is still within easy reach of Canadian boys in all nine Provinces. Considerable attention is accordingly devoted in the present Handbook to nature in her various forms, from rocks and minerals to the different kinds of animal life. Other chapters deal with pioneering, tracking, camping, signalling, etc. These features of the Scout programme have proven eminently successful both for the useful knowledge they impart and on account of their effect on boy character.

Following is an outline of the principal features of the Boy

Scout training under the headings of woodcraft, camping, chivalry, life saving, endurance and patriotism, all of which are treated more fully in later chapters of this Handbook. The outline here given is from the pen of Sir Robert Baden-Powell.

### Woodcraft

Woodcraft means knowing all about animals, a knowledge which is gained by following up their foot tracks and creeping up to them so that you can watch them in their natural state and learn the different kinds of animals and their various habits. You only shoot them if in want of food. No Scout wilfully kills an animal for the mere sake of killing, unless it is a harmful creature. By continually watching animals in their natural state, one gets to like them too well to shoot them. The whole sport of hunting animals lies in the woodcraft of stalking them, not in the killing. Woodcraft includes, besides



being able to see the tracks and other small signs, the power to read their meaning, such as at what pace the animal was going, whether he was frightened or unsuspecting, and so on. It enables the hunter also to find his way in the jungle or desert; it teaches him which are the best wild fruits, roots, etc., for his own food, or which are favourite food for animals, and, therefore, likely to attract them.

In the same way in Scouting you read the tracks of men, horses, bicycles, etc., and find out from these what has been going on; noticing by small signs, such as birds suddenly starting up, that someone is moving near, though you may not

see him. By noticing little things on the ground you will often find lost articles, which you can then restore to their owners. By noticing details of harness, and so on, you can often save a horse from the pain of an ill-fitting strap or bit. By observing the behaviour or dress of people, and putting this and that together, you can sometimes see that they are up to no good and thus prevent a crime, or you can tell when they are in distress and need help or sympathy; and you can then do what is one of the chief duties of a Scout, namely, help those in distress in any possible way that you can.

Remember that it is a disgrace to a Scout if, when he is with other people, they see anything big or little, near or far, high or low, that he has not already seen for himself.

#### Camping

Scouts must, of course, be accustomed to living in the open;



they have to know how to put up tents or huts for themselves; how to lay and light a fire without matches, if need be; how to cut up and cook their food; how to tie logs together to make bridges and rafts; how to find their way by night, as well as by day, in a strange country, and so on. Very few fellows learn or practise these things when they are living in settled communities, because they have comfortable houses and beds to sleep in, their food is prepared and cooked for them, and when they want to know the way they "ask a policeman." When, however, such fellows have to camp out and there is no one at hand to provide all these things for them they find themselves helpless duffers.

### Chivalry

In the old days the Knights were the Scouts of Britain, and their rules were very much the same as the Scout Law



which we have now; and very much like what the Japanese have, too. We are their descendants, and we ought to keep up their good name and follow in their steps. They considered that their honour was the most sacred thing to uphold; they would not do a dishonourable thing, such as telling a lie

or stealing; they would rather die than do it. They were always ready to fight and to be killed in upholding their king, or their religion, or their honour. Thousands of them went out to Palestine to maintain the Christian religion against the Mohammedan Turks.

Each Knight had a small following consisting of a squire and some men-at-arms, just as our Patrol Leader has his Second and four or five Scouts. The Knight's patrol used to stick to him through thick and thin, and all carried out the same idea as their leader, namely:

Their honour was sacred.

They were loyal to God and their king and to their country.

They were particularly courteous and polite to all women and children and infirm people.

They were helpful to everybody.

They gave money and food where it was wanted, and saved up their money in order to do so.

They taught themselves the use of arms in order to protect their religion and their country against enemies.

They kept themselves strong and healthy and active in order to be able to do these things well.

#### **Do a Good Turn Daily**

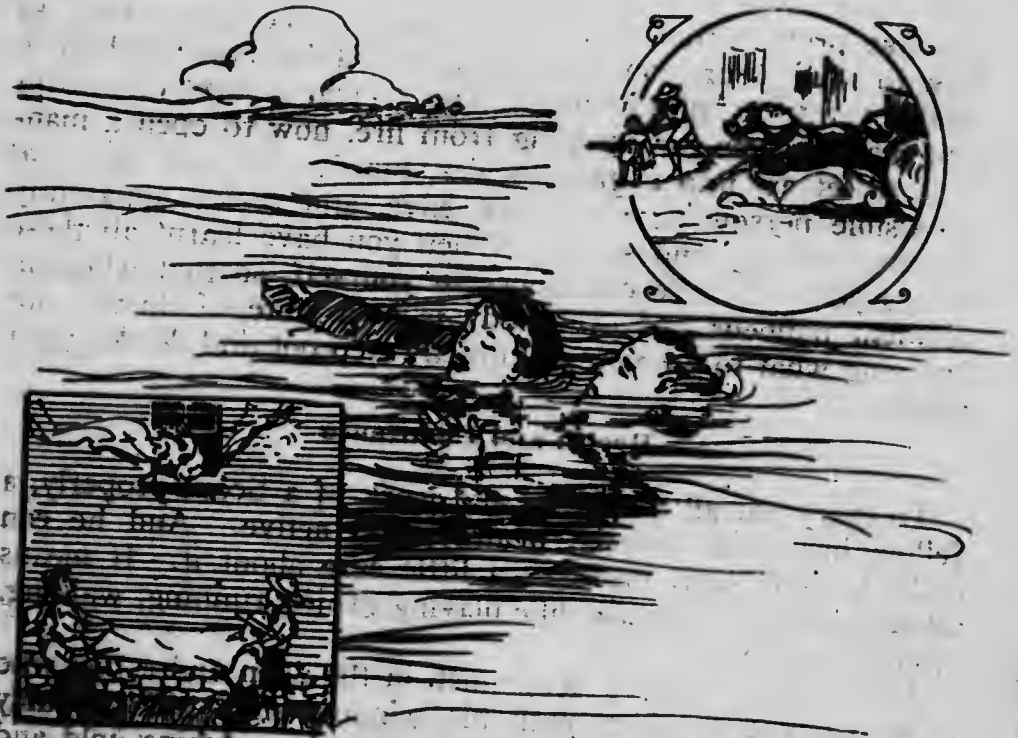
Scouts cannot do better than follow the example of these brave men who made the tiny British nation into one of the best and greatest that the world has ever known. One great point about them was that every day they had to do a good turn to somebody, and that is one of the Boy Scout rules. When you get up in the morning, remember that you have got to do a good turn for someone during the day. Tie an extra knot in your handkerchief or necktie, and leave the tail of your necktie outside your waistcoat to remind you of it; and when you go to bed at night think to whom you did the good turn. If you should ever find that you had forgotten to do it, you must do two good turns the next day instead. You are bound in honour to do it. The good turn need only be a very small one, yet if it is only to put a penny into a poor-box, or to help an old woman to cross the street, or to make room on a seat for someone, or to give water to a thirsty horse, or to remove a bit of banana skin off the pavement where it is likely to throw people down, it is a good turn. But one must be done



every day, and it only counts as a good turn when you do not accept any reward in return.

Life Saving

It is an old adage that prevention is better than cure and Scouts everywhere should do all they can to assist in the prevention of disease and accidents both by being careful themselves and upholding others in making life and health as secure as possible.



You have all heard of the Victoria Cross, the little bronze cross given by Queen Victoria to soldiers who specially distinguish themselves in action under fire of the enemy. But there is the companion medal to it, and that is the Albert Medal for those who are not soldiers, and who distinguish themselves in saving life in peace time. And there are the Stanhope Medal for civilian gallantry, the Edward Medal for gallantry in mines, the Royal Humane Society's medals and Mr. Carnegie's Heroes' Fund, as well as our Scout's gallantry medals. The person who wins one of these medals, as he may do in the sudden appalling accidents which occur in big cities, mines, and factories, in every day life, is no less a hero, than the

soldier who rushes into the thick of the fight to rescue a comrade amid all the excitement and glamour of battle. It is certain that very many of you who read these lines will, at one time or another, get a chance of saving human life, if you are prepared to seize the opportunity. That is, you must be prepared for it; you should know what to do the moment an accident occurs, and do it then and there.

It is not enough to read about it in a book and think that you know how to do it, but you must actually practise, and practise pretty often, the actual things to be done; such as how to cover your mouth and nose with a wet handkerchief to enable you to breathe in smoke, how to tear a sheet into strips and make a rope for escaping from fire, how to open a man-hole to let air into a gassy sewer, how to lift and carry an insensible person, how to seize, save, and revive apparently drowned people, and so on. When you have learnt all these things you will have confidence in yourself, so that when an accident happens and everybody is in a state of fluster, not knowing what to do, you will quietly step out and do the right thing.

#### Health and Endurance

To carry out all the duties and work of a Scout properly, a fellow has to be strong, healthy, and active. And he can make himself so if he takes a little care about it. It means taking plenty of exercise, like playing games, running, walking, cycling, and so on.

A Scout has to sleep very much in the open and a boy who is accustomed to sleep with his window shut will probably suffer, like many a tenderfoot has done, by catching cold and rheumatism when he first tries sleeping out. The thing is always to sleep with one's window open, summer and winter, and you will never catch cold. A soft bed and too many blankets make a boy dream bad dreams which weaken him.

A few minutes' physical exercise every morning and evening is a grand thing for keeping one fit—not so much for making showy muscle as to work all the internal organs, and to quicken the circulation of the blood in every part. A good rub down daily with a wet rough towel, even if one cannot get a bath, is what every real Scout takes, and is of the utmost importance.

Scouts breathe through the nose, not through the mouth; in this way they don't get thirsty; they don't get out of breath.

so quickly; they don't suck into their insides all sorts of microbes or seeds of disease that are in the air; and they don't snore at night, and so give themselves away to an enemy.

Deep breathing exercises are of great value for developing the lungs, and for putting fresh air (oxygen) into the blood, provided that they are carried out in the open air, and are not overdone so as to injure the heart, etc. For deep breathing the breath must be taken in slowly and deeply through the



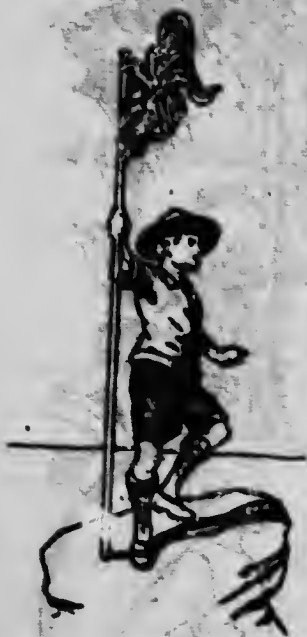
nose, not through the mouth, till it opens out the ribs to the greatest extent, especially at the back; then, after a time, it should be slowly and steadily breathed out again without strain. But the best deep breathing after all is that which comes naturally from plenty of running exercise.

Alcohol is now shown to be quite useless as a health-giving drink, and it is mere poison when a man takes much of it. A

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man who is in the habit of drinking beer, wine or spirits in strong doses every day is not the slightest use for Scouting—and very little use for anything else.

Similarly a man who smokes much. The best war Scouts don't smoke because it weakens their eyesight; it sometimes makes them shaky and nervous; it spoils their noses for smelling, which is of great importance at night, and the glow of their pipe or even the scent of tobacco carried on them at night, gives them away to watchful enemies. They are not such fools as to smoke. No boy ever began smoking because he liked it, but because he thought it made him look like a grown-up man. As a matter of fact it generally makes him look a little ass.



### Patriotism

This vast heritage of ours, the British Empire, did not grow of itself. It was won for us by the hearty patriotism and valour and industry of our forefathers.

Before the great war many people said that we had no patriotism and that, therefore, our Empire would one day fall to pieces like the great Roman Empire did, because its citizens became rich and idle and lazy and cared only for amusements. The history of the mighty world struggle in which the British peoples are taking so large a part has, however, shown that Britons still are men of high ideals and ready to fight to the death for the cause of

the smaller nations and for the liberty and peace of the world. Perhaps you don't see how a mere small boy can be of use to the community, to Canada or to the great British Empire; but by becoming a Scout and carrying out the Scout Laws every boy can be of use; and the public services rendered during the war by the Scouts fully prove this.

"Country first, self second," should be your motto. Possibly if you ask yourself truly, you will find you have a present got them just the other way about. If it is so, from this moment put yourself right and remain so always—patriot

first, player second. Don't be content, like the Romans were, and some people now are, to pay other people to play your games or to fight your battles for you. Do something yourself to help in keeping the flag flying.

If you take up Scouting in that spirit, you will be doing something. Take it up, not merely because it amuses you, but because by doing so you will be fitting yourself to help your country. Then you will have in you the true spirit of patriotism, which every British boy ought to have if he is worth his salt.

The central aim of the Boy Scouts Movement is good citizenship and the concluding chapter of the present Handbook is accordingly devoted to the privileges and duties of citizenship in which the members of our Association all have their share as Canadians and Britishers.

#### Scouting and Education

Scoutcraft has not been put forward as a substitute for schooling; its purpose is rather to "utilize the boy's time out of school, which after all is in the ratio of four to one to the time he spends within school walls. To many minds the term education suggests schools and schoolrooms, as to others religion suggests church. But Scouting also is in the truest sense educative. True, its method is different from that of the formal instruction given in schools, but recent years have seen great changes in educational methods and the future in all probability will see many more.

Hon. H. A. L. Fisher, British Minister of Education, has said: "I need hardly say that I regard the work of the Boy Scouts Association as being a factor of the utmost value in national education."

"The most effective kind of education," says Dr. Charles W. Eliot, "is obtained at every stage not by listening or reading, but by observing, comparing and doing. The very best kind of education is obtained in doing things oneself under competent direction." Scouting gives this kind of direction and guidance along various lines and therein lies part of the secret of its remarkable success. Many men of eminence in the teaching profession are giving their hearty support to this work as a supplementary means of attracting a boy's interest, of stimulating his ambition, of fixing in him habits of observation, honour and duty and of vocational guidance through the training for proficiency badges, so that the lad's choice of a life work may not be a leap in the dark.

In a noteworthy address on Scouting Education, Dean James E. Russell, of Columbia University, one of the foremost authorities on educational methods in North America, has declared the Boy Scout Movement to be "the most significant educational contribution of our time." "The naturalist," he says, "may praise it for its success in putting the boy close to nature's heart; the moralist, for its splendid code of ethics; the hygienist, for its physical training; the parent, for its ability to keep his boy out of mischief; but from the standpoint of the educator, it has marvellous potency for converting the restless, irresponsible, self-centred boy into the straightforward, dependable, helpful, young citizen. To the boy who will give himself to it, there is plenty of work that looks like play, standards of excellence which he can appreciate, rules of conduct which he must obey, positions of responsibility which he may occupy as soon as he qualifies himself—in a word, a programme that appeals to a boy's instincts, and a method adapted to a boy's nature."

#### Religious Policy

The attitude of the Boy Scouts Association towards religious instruction should be clearly understood. Scouting means to the boy a solid foundation for true religion applied to daily life. No one, of course, pretends that Scouting will serve as a "philosopher's stone" to change all human dross into pure gold. Like all other lines of human effort it has definite limitations. It is not put forward as a substitute for church and home influence in matters of religion. But this it will do: it will supplement church, home and school influences with wholesome and interesting forms of recreation during leisure hours that are at once uplifting and educative in their effect.

No attempt is made to interfere with the prerogative of parents and pastors by giving religious instruction, but Scout officers properly insist on the observance and practise of whatever form of religion the boy professes and through Scouting practise virtue has been seen from a new point of view and has won its way to many a boyish heart. In the Scout troop it is easy to play fair when everyone around you is on his honour and the social atmosphere is right.

It is very gratifying to find that so many Scout troops exist in connection with churches. This has been the case from the very inception of the movement and it shows the value which is put on it by ministers of religion as a reinforcing

power in character building. At the same time the Scout Movement has been deliberately developed along lines broad enough to embrace different classes and creeds, and the following pronouncement of the Headquarters Council sums up the policy which has guided the Association in religious matters since its inception:

1. It is expected that every Scout shall belong to some religious denomination, and attend its services.
2. Where a troop is composed of members of one particular form of religion, it is hoped that the Scoutmaster will arrange such denominational religious observance and instruction as he, in consultation with its Chaplain or other religious authority, may consider best.
3. Where a troop consists of Scouts of various religions they should be encouraged to attend the services of their own denomination, and troop church parades should not be held. In camp any form of daily prayer and weekly divine service should be of the simplest character, attendance being voluntary.
4. Combined church parades of troops of different denominations are not allowed without the special permission of the Commissioner and under no circumstances should Scoutmasters insist upon Scouts attending places of worship other than those of their own denomination.

The first promise a Scout takes on joining is this—"On my honour I promise that I will do my best to do my duty to God and the King." The Scout law teaches also helpfulness to others, honour, loyalty, friendliness, courtesy, obedience, cheerfulness and thrift and concludes with the injunction that "A Scout is clean in thought, word and deed." Here, therefore, is a programme which makes for the strengthening of boy character through the Scout Promise and Law, the moral groundwork of the whole Movement. Under such influences the boy mind turns naturally to the higher things of life. "A Scout's honour is to be trusted," and Scouting aims to develop such a high sense of personal honour, supported by the individual's own religious faith, as to control every activity of his life—his work, his play, his study, and later, his business career—thus ensuring that these shall be honourable in all respects. It is in boyhood that life habits are formed. Through



**The Pathfinder**

From the painting by the late Lieut. Ernest S. Carlos.  
By kind permission.

He is a member of the 1st Scout Troop, 1st Division, 1st Army, U.S.A.



their daily good turns many lads come to experience the deep joys of unselfishness and kindness.

#### **The Association is Non-Political and Non-Military**

The Boy Scouts Association is not connected with any political body. Scouts and officers in uniform are not allowed to take part in meetings or demonstrations of a political nature.

There is no military meaning attached to Scouting, even the ordinary drill employed by so many other boys' organizations being reduced to the lowest necessary limits. Peace Scouting comprises the attributes of resourcefulness and self-reliance and the many other qualities which make Scouts men among men. There is no intention of making the lads into soldiers or of teaching them bloodthirstiness. At the same time under patriotism they are taught that a citizen must "be prepared" to take his fair share among his fellows in the defence of the homeland against aggression in return for the safety and freedom enjoyed by him as an inhabitant, and that he who shirks and leaves this duty to others to do for him is neither playing a plucky nor a fair part.

#### **War Services**

Although not a military organization, the occurrences of the vast European war found the Boy Scouts ready to do their "bit" and besides the thousands who enlisted in the military and naval forces a very large number of Scouts have been employed by the public authorities in the United Kingdom as despatch bearers, in the police, ambulance and postal services, as guards on railway and telegraph lines and as coastguardsmen, thereby releasing adults for other services. In Canada too the Scouts were encouraged in the performance of any services which they could usefully render in aid of the war cause with the result that here, as in the United Kingdom, official recognition was granted by the military authorities to the Boy Scouts' uniform as a uniform of non-military public service.

Special badges were authorized by the British Headquarters of the Association for presentation to all Scouts and Scout officers performing special military service during the war in aid of the naval, military, police and other public authorities and private societies and individuals. Very many of these badges have been won for patriotic good turns and the part

## Boy Scouts

taken by the Boy Scouts in the great fight against German militarism is one which may well fill our hearts with pride. Notwithstanding the very large number of Scout officers enlisted for active service, it is significant of the spirit animat-



H.R.H. the Duke of Connaught presenting War Service Badges to Canadian Boy Scouts

ing the Association and the public favour it has enjoyed that during the war period the membership has increased, the boundaries of the work have been extended and the general efficiency has largely improved, so that those interested may feel satisfied that the Movement is doing its bit for the country and steadily forging ahead.

### Policy, Organization and Rules for Canada

The Policy, Organization and Rules heretofore governing the work of the Boy Scouts' Association in Canada have been contained in a booklet entitled Policy, Organization and Rules for Canada, which was published in April, 1916, under the authority of the Canadian General Council and with the approval of the Committee of the British Headquarters Council.

It is, however, intended that the statement of aims and of religious, educational, non-political and non-military policy, contained in the Introductory chapter of the present Handbook, together with the statement of the Plan of Organization, Officers and Ranks, Badges, Decorations, and Rules appearing in the first chapter, shall take the place of the Policy, Organization and Rules for Canada, 1916.

By comparison it will be observed that the general principles and plan of organization heretofore in force have been adhered to, but that the statement here presented embodies a number of changes which have been made since 1916 in the booklet of Policy, Organization and Rules, published by the British Headquarters, and includes besides a few other changes which have been made in order to bring the system of training more fully into conformity with Canadian conditions and requirements.

These changes have all been adopted after consultation both with the British Headquarters and with those actively engaged in Scouting work in Canada and have been considered also by a special committee before being approved by the Executive Committee of the Canadian General Council. It is, accordingly, desired that no time shall be lost in bringing the work into conformity with the system set forth in the present Handbook.

To this end the Policy, Organization and Rules for Canada, 1916, heretofore in force, have been withdrawn.

#### **Purposes of Handbook**

The present Handbook is intended to serve a two-fold purpose. In it an effort has been made to present the aims of the Association and its system of training for the information of those who are unacquainted with Scouting. It is designed also for use by Scouts and Scout officers as a text book in the training of Scouts up to the rank of First Class. Chapters II and III are primarily addressed to Scoutmasters and other officers. The rest of the book is intended to serve the purpose of officers and Scout alike.

Boys desirous of becoming Scouts will find on page 45 of Chapter I a simple statement of the tests which all beginners must pass before being admitted to the rank of Tenderfoot Scout. Full information on how to pass each of these tests will be found in the present Handbook.

The requirements for the rank of Second Class are listed on page 48 and in connection with each requirement reference is made to the pages of the Handbook at which information will be found in regard thereto.

The requirements for the rank of First Class are listed on page 49 with references in each case to the pages of the Handbook to which those interested may turn for study purposes.

Apart from the training for the ranks of Tenderfoot Scout, Second Class and First Class, this volume may be used by Scouts preparing themselves to pass the tests for certain proficiency badges. The Handbook has not, however, been written as a text book for all of the proficiency badges.

The attention of Scout officers and Scouts is directed to the bibliography appearing at pages . . . for various sources of information in regard to the training.

# CHAPTER I

## POLICY, ORGANIZATION AND RULES FOR CANADA

The present Chapter comprises the authorized statement of the Policy, Organization and Rules governing the work of the Boy Scouts Association in Canada, sanctioned by the Executive Committee of the Canadian General Council in virtue of powers vested in this Council by Act of Parliament, and approved by the Committee of the Headquarters Council in the United Kingdom.

The rules governing the work of the junior branch of the Association known as the Wolf Cubs are published separately by the Canadian General Council. Reference is made to the Wolf Cubs on pages 13 and 35 of the present Handbook and their place in the Association's work is also indicated on the chart appearing on page 33.

### GENERAL PRINCIPLES

#### Sec. 1.—Aims

(See first paragraph on page 3 of the present Handbook.)

#### Sec. 2.—Age Limits

The limits of age for enrolment of Scouts are 11 to 18. This rule does not imply, however, that a Scout, when he reaches the age of 18, must leave a troop.

#### Sec. 3.—Promise and Law

(See page 6 of the present Handbook.)

#### Sec. 4.—Officer's Promise

All Scout officers, on appointment, are expected to promise on their honour to—

1. Do their Duty to God and the King.
2. Help other people at all times.
3. Carry out the spirit of the Scout Law.

## Boy Scouts

### Sec. 5.—Membership

Membership in the Boy Scouts Association in Canada is open to British subjects of all classes and denominations and comprises members of the Canadian General Council, members of the several Provincial Councils, members of the various District Councils and Local Associations, all officers properly holding warrants and officers holding honorary rank, together with all Scouts and *Wolf Cubs* registered by Local Associations (see page 36) or with the several Provincial headquarters. Any question arising with reference to the membership of any individual, other than membership in the Canadian General Council, shall be determined by the respective Provincial Councils.

The Association is anxious to promote international peace by entering into friendly relations with organizations outside the British Empire which have similar aims in view, and to exchange visits, correspondence and ideas with them, but it is not permitted to extend affiliation to foreign societies or membership in the Association to aliens. Alien friends may be attached to troops as honorary members but should not be granted badges of rank.

### Sec. 6.—Educational Policy

(See page 23 of the present Handbook.)

### Sec. 7.—Religious Policy

(See page 24 of the present Handbook.)

### Sec. 8.—Non-political and Non-military Policy

(See page 27 of the present Handbook.)

## PLAN OF ORGANIZATION

### Sec. 9.—Organization Chart

The plan of organization of the Association is shown in the following chart:

**BRITISH HEADQUARTERS**  
(London - England)  
**CHIEF SCOUT AND COUNCIL**  
With Executive Committee

**CANADIAN HEADQUARTERS**  
(Ottawa - Canada)  
**CHIEF SCOUT FOR CANADA**  
and Canadian General Council  
with Executive Committee

**PROVINCIAL HEADQUARTERS and**  
**PROVINCIAL COMMISSIONERS**  
With Councils and Executive Committees

**DISTRICT COMMISSIONERS**  
With Local Associations and  
Executive Committees

**SCOUTMASTERS AND**  
**ASSISTANT SCOUTMASTERS**  
WITH TROOPS

**CUBMASTERS AND**  
**ASSISTANT CUBMASTERS**  
WITH PACKS

Patrol  
Leader  
and  
Second  
with  
Patrol

Patrol  
Leader  
and  
Second  
with  
Patrol

Patrol  
Leader  
and  
Second  
with  
Patrol

Patrol  
Leader  
and  
Second  
with  
Patrol

Sixer  
and  
Second  
with  
Six

Sixer  
and  
Second  
with  
Six

Sixer  
and  
Second  
with  
Six

Sixer  
and  
Second  
with  
Six

## Sec. 10.—British Headquarters

The Boy Scouts Association is incorporated throughout the British Empire by a Royal Charter granted by His Majesty, King George V., in 1912. Under the terms of incorporation the control of the Association's affairs is vested in a representative Council having its headquarters in London, England, to which a Headquarters Committee is responsible in turn for general administration. His Majesty the King is the patron of the Association; His Royal Highness the Duke of Connaught is its president; whilst Lieut.-General Sir Robert Baden-Powell, as well as being the Chief Scout, is also Chairman both of the Headquarters Council and Committee. The work at Headquarters is supported by voluntary subscription and an endowment fund is being raised to that end. Since its inception in the United Kingdom in 1908 the Boy Scouts Movement has spread into many foreign countries. The Movement in foreign countries has, however, no connection with the British organization but is controlled in each case by a national council or committee.

## Sec. 11.—Canadian General Council

Under the authority of an Act of the Parliament of Canada, incorporation was granted in 1914 to the Canadian General Council of the Boy Scouts Association to promote and carry out in Canada the objects of the Boy Scouts Association, viz.:

- (a) The instructing of boys in the principles of discipline, loyalty, and good citizenship, and otherwise as provided in and by the Royal Charter of the said Association;
- (b) To promote and make, and assist in the establishment of, Provincial and Local Associations, Committees, and Councils, on such terms and under such regulations as the Corporation may from time to time by by-law provide;
- (c) To publish, distribute, and sell books and other information for the furtherance of the objects of the Association in Canada;
- (d) Generally to do all things necessary or requisite for providing and maintaining an efficient organization for the purposes of the Association in Canada.



His Excellency the Governor General is the Chief Scout for Canada and also, Chairman of the Canadian General Council and the Executive Committee. The other officers are the Dominion Commissioner, who is elected on the nomination of the Chief Scout for Canada, the Honorary Dominion Secretary and the Honorary Treasurer. An Executive Committee, with headquarters in Ottawa, is elected annually and is supported by voluntary subscriptions from different parts of the Dominion and also by a small parliamentary grant.

### Sec. 12.—Provincial Councils

Provincial Scout Councils are established for the purpose of promoting the welfare of the Boy Scouts Association in each province and are guided in their policy, organization and rules by the regulations laid down from time to time by the Canadian General Council. The duties of the Provincial Councils are advisory and executive within their respective areas. It is not, however, their object to interfere with the initiative of the Local Associations and the troops of Scouts or packs of *Wolf-Cubs* under them.

The membership of each Provincial Council is determined by representatives of the Local Associations throughout the province; usually, however, two representatives are elected by each Local Association. All District Commissioners are members of the Provincial Council.

The officers of each Provincial Council are as follows: Provincial Patron, Provincial President, Provincial Commissioner, Provincial Vice-Presidents, Provincial Treasurer and Provincial Secretary.

The Provincial Patron, Provincial President and Provincial Commissioner are appointed by the Chief Scout for Canada on the recommendation of the Provincial Council and retain office during the pleasure of the Chief Scout.

The Vice-Presidents, Treasurer and Secretary are elected annually.

### Sec. 13.—Local Associations

Local Associations are required in all localities where Boy Scout Troops or *Wolf Cub Packs* are organized. A Local Association exists for the following purposes:—

(a) To supervise and encourage the Movement within its area, with the least possible amount of interference with the independence and initiative of the troops, *packs*, patrols or *sixes*; also to work in co-operation with other recognized organizations for boys.

(b) To nominate suitable persons to act as officers and recommend them to the Provincial Council for the Chief Scout's warrant.

(c) To register, or—pending enquiry by the Provincial Council—refuse to register, or to suspend any officer, troop, *pack*, patrol, Scout, or *Wolf Cub*, within its area. No officer, troop, *pack*, patrol, Scout, or *Wolf Cub* will be recognized unless registered. A Local Association may delegate the registration and suspension of Scouts, and *Wolf Cubs*, to the Scoutmaster, or *Cubmaster*, of the troop, or *pack*, to which they belong, but a Scout, or *Wolf Cub*, suspended by a Scoutmaster, or *Cubmaster*, has the right of appeal to the Local Association. In the case of recommendations for officers of troops, or *packs*, attached to churches, schools or other bodies, if the Local Association does not concur in the recommendations put forward, it must refer the matter to the Provincial Council for decision.

(d) To appoint badge committees of independent ladies and gentlemen, to examine candidates for the proficiency badges, and be responsible for the granting of all Scout, or *Wolf Cub*, badges and awards to troops, *packs*, patrols, *sixes*, Scouts, or *Wolf Cubs*, under its jurisdiction.

(e) To encourage the formation of troop, and *pack*, committees for finance, the trusteeship for troop, or *pack*, property, etc. (A model deed of trust may be obtained from Provincial headquarters.)

(f) Where Sea Scouts exist, or boating is part of the Scout training of a troop, to appoint a special committee to frame by-laws for the proper supervision of the use and equipment of all vessels and boats and for the safety of the Scouts using them. (A model set of by-laws may be obtained from the Provincial headquarters.)

(g) To submit all by-laws for approval by Provincial headquarters, supplying a duplicate copy for filing. (A model set of by-laws may be obtained from Provincial headquarters.)

Formation of Local Association

Where it is desired to form a Local Association a meeting should be held, at which some leading gentleman should be invited to act as chairman. The Provincial Council will arrange to have a representative present for the purpose of presenting to the meeting the whole scheme of Scouting. Representatives from boys' organizations in the locality should be invited to attend, as well as schoolmasters, clergy of the different religious beliefs, and other gentlemen who are interested in work among boys, to elect the members of the Local Association.

A person is a member of a Local Association

- (a) If he be the District Scout Commissioner (see p. 56), District Scoutmaster, or a Scoutmaster, Honorary Scoutmaster, or *Cubmaster*, holding warrant and registered within the area;
- (b) If he, or she, be duly elected in accordance with the by-laws of the Local Association.

The Local Association should elect a President, Vice-Presidents, Chairman, Secretary, Treasurer or Secretary-Treasurer. (Subsequently elected annually in October.)

Where necessary, an Executive Committee may be appointed with its own Chairman and Vice-Chairman, to carry out the duties assigned to it by the Local Association. This should consist of at least as many other members as Scoutmasters and *Cubmasters*.

It is most important that an efficient Secretary be appointed.

The Local Association bears a similar relationship to the Boy Scout troop, or *Wolf Cub* pack, that the school board does to the schools and should be composed of citizens who are interested in the welfare of the boys. No boy should ever be present at meetings of the Local Association.

A Commissioner may be the President of the Local Association but Scoutmasters, or *Cubmasters*, are not permitted to act in this capacity, unless with the sanction of the Provincial Council.

Assistant Scoutmasters, and Assistant *Cubmasters*, may attend meetings, but (unless they are elected members) may not vote except when representing their troop in the absence of their Scoutmasters, in which case one Assistant may vote.

Scoutmasters and Assistant Scoutmasters, *Cubmasters* and Assistant *Cubmasters*, are not members *ex-officio* of the Executive Committee of a Local Association.

## Boy Scouts

The area to be administered by the Local Association should be determined by the Provincial Council.

### Local Association Finance

Local Associations should raise locally the sums required for working expenses or for helping troops, or packs, in the Association. Subscriptions and donations for this purpose should be paid to the Treasurer of the Local Association and not to any individual Scoutmaster, or Cubmaster.

A Local Association may require a small registration fee from each troop, or pack, and subscriptions from members of the Local Association.

### Sec. 14.—Troops

Troops consist of two or more patrols. Each must have a Scoutmaster with at least one Assistant Scoutmaster to ensure continuity. If the troop consists of more than three patrols, an additional Assistant Scoutmaster is advisable for each group of three or fraction thereof. No troop can be recognized unless registered by a Local Association, or, where there is no Local Association in existence, by the Provincial Council.

Troop Committees should be formed to assist the Scoutmasters with finance, in obtaining club rooms, camping grounds, and employment, if need be, for the Scouts in the troop, and to be responsible for troop property.

No boy may be accepted for enrolment in a troop of Boy Scouts who has been a member of another troop within two months of his application, unless he is provided with a transfer duly signed by his late officer.

### Troop Finance

Scoutmasters must be prepared to make public their troop accounts. They should adopt a common form of account-keeping and must submit their annual accounts to an audit by the Local Association, if called upon to do so.

A balance sheet should be posted on the order board at troop headquarters, at least once a year.

Where outside subscriptions to troops are received, such subscriptions should be administered by a troop committee appointed for the purpose, and not by any individual Scoutmaster.

A troop may require a small subscription from its members. Standard Troop Record Books are obtainable from the Canadian General Council, through Provincial Headquarters.

**Sec. 15.—Patrols**

The patrol consists of six to nine Scouts, including Patrol Leader and Second. The patrol should be the unit in all competitions and exercises. The formation of specialized patrols is recommended; such patrols may appear on parade with their own appropriate implements, except in the case of patrols specializing in the Marksman Badge. Rifles or firearms of any description must not be carried.

Patrols specializing in certain subjects are authorized to incorporate the badge of that subject on their patrol flags. The badge should be on the inside top corner of the flag.

**Lone Patrols and Lone Scouts**

Where in a district it is impossible to obtain the services of a gentleman or lady to take charge of boys who wish to become Scouts, the senior boy should apply to the Secretary at Provincial headquarters for permission to form a Lone Patrol.

In localities where no troops or patrols exist individual boys desirous of becoming Scouts should apply to the secretary at Provincial headquarters to be registered as Lone Scouts. The Provincial Council should not grant approval when it is possible for the boy to join any existing patrol.

**Sec. 16.—Patrol Signs, etc.**

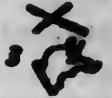
Each patrol is named after an animal or bird and chooses its own motto, which generally applies in some way to the patrol animal.

The Patrol Leader has a small white flag on his staff with the head of his patrol animal shown on it on both sides.

Each Scout in a patrol has to be able to make the call of his patrol animal. Thus, for instance, every Scout in the "Wild Geese" must be able to imitate the "honk" of the Canada wild goose. This is the sign by which the Scouts of a patrol can communicate with each other when hiding or at night. No Scout is allowed to imitate the call of any patrol except his own. The Patrol Leader calls up the patrol at any time by sounding his whistle and uttering the call of the patrol.

Boy Scouts

When a Scout makes signs on the ground for others to read he also draws the head of the patrol animal. Thus, if he wants to show that a certain road should not be followed, he draws a sign across it, indicating that it is "not to be followed," and adds the head of his patrol animal to show which patrol discovered that the road was no good, and his own number to the left of the head to show which Scout discovered it, thus:



All these signs Scouts must be able to draw according to the patrol to which they belong.

The list herewith of suggested patrol signs may be helpful to individual patrols in selecting an acceptable emblem.



**SEAL**  
Call—"Hark"  
RED AND BLACK



**MUSK RAT**  
Splash—"Klop"  
ORANGE AND DARK BLUE



**LYNX**  
Call—A shrill yell  
VIOLET



**BEAVER**  
Slap made by clapping hands  
BLUE AND YELLOW



**LOON**  
A hysterical laugh  
GREEN AND RED



**KANGAROO**  
Call—"Coo-ee"  
RED AND GREY



**BUFFALO**  
Lowing—"Um-maw"  
RED AND BROWN



**CURLEW**  
Whistle—"Curley"  
GREEN



**WOODPECKER**  
Laugh—"Chattering Yell"  
"Hecar-de-ar-de-arfa"  
GREEN AND VIOLET



**RUFFED GROUSE**  
Drum Roll—"rrrr"  
GREEN AND BLUE



**HAWK**  
Cry (same as Eagle)  
"Krooo"  
PINK



**HOUND**  
Bark—"Bawow-wow"  
ORANGE



**MOOSE**  
The exaggerated grunt of  
a full grown pig  
KHAKI AND GREY



**BULLDOG**  
Growl—"Graa-ow"  
LIGHT BLUE AND BROWN



**HORSE**  
Whinny—"Hee-ee-ee"  
BLACK AND WHITE



**CHIPMUNK**  
A chirpy—"Chuck, Chuck, Chuck"  
MAUVE AND WHITE



**FOX**  
Bark—"Ha-ha"  
YELLOW AND GREEN



**LION**  
Call—"Eu-ugh"  
YELLOW AND RED



**OTTER**  
Cry—"Hoi-oi-oick"  
BROWN AND WHITE



**HYENA**  
Laughing Cry—"Ooowah-ooowah-wah"  
YELLOW AND WHITE



**COUGAR**  
Tongue in side of mouth  
"Keecook"  
YELLOW



**ANTELOPE**  
High pitched roar  
"Mia-ek"  
DARK BLUE AND WHITE



**WILD BOAR**  
Grunt—"Broof-broof"  
GREY AND PINK



**WAPITI**  
Roar—"Baow"  
VIOLET AND BLACK



**HIPPO.**  
Hee—"Brrrreesh"  
PINK AND BLACK

Boy Scouts



**SEA-GULL**  
New—"Wew-woo-woo"  
LIGHT BLUE AND SCARLET



**COYOTE**  
Shrill Howl—  
"Oup-oup-oup-oo-oo-oo"  
GREY AND BLACK



**WOLF**  
Howl—"How-oooo"  
YELLOW AND BLACK



**CAT**  
Cry—"Meow"  
GREY AND BROWN



**RATTLESNAKE**  
Rattle a pebble in a small tin  
PINK AND WHITE



**RAY**  
Bleat—"Ha-a"  
BROWN



**SWALLOW**  
Scream—"Quee"  
DARK BLUE



**PEEWIT**  
Whistle—  
"Tewitt"  
GREEN AND WHITE



**EAGLE**  
Very shrill cry—  
"Kreese"  
GREEN AND BLACK



**BAT**  
Very high squeak—  
"Pitz-pitz"  
LIGHT BLUE AND BLACK



**ELEPHANT**  
Trumpeting Bellow—  
"Trer-awmp-awmp-er"  
PURPLE AND WHITE

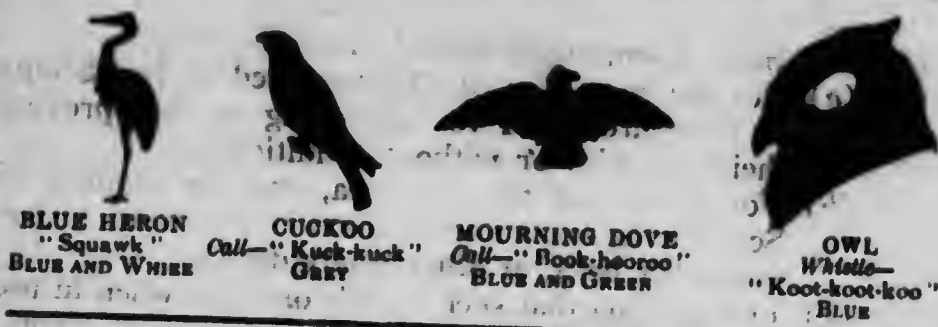


**BULL**  
Lowling—"Um-maow"  
RED



**BEAR**  
Growl—"Boorr"  
BROWN AND BLACK





**BLUE HERON**  
"Squawk"  
BLUE AND WHITE

**CUCKOO**  
Call—"Kuck-kuck"  
GRAY

**MOURNING DOVE**  
Call—"Hoek-heeroo"  
BLUE AND GREEN

**OWL**  
Whistle—  
"Koot-koot-koo"  
BLUE



**CHICKADEE**  
"Chickadee-dee dee"  
GREEN AND KHAKI

**WILD GOOSE**  
Call—"Honk-honk"  
MAUVE AND WHITE

**WHIPPOORWILL**  
"Whip-poor-will"  
YELLOW AND BROWN

**CROW**  
Call—"Caw"  
BLUE AND BLACK

Sec. 17.—Sea Scouts

The Sea Scouts are a branch of the Boy Scouts Association, and, for organization, come under the same scheme.

- (1) Scoutmasters desiring that troops or patrols should be registered as "Sea Scouts" must obtain the consent of their Commissioner and must satisfy him that the requisite training will be provided. On receiving the Commissioner's authorization to their formation, such troops or patrols are to wear hat or cap ribbons with the words "Sea Scout" on them.
- (2) (a) No boat shall be taken over for use by Sea Scouts until it has been approved by a Committee appointed for the purpose, or, where there is no Committee, by a Commissioner.
- (b) No boat shall be used by Sea Scouts unless in charge of a competent person, and properly manned.
- (c) No Sea Scout shall form part of the crew of any rowing boat until he has passed for the "Swimmer" badge, or form part of the crew of a sailing boat until he has passed for the "Swimmer" and "Boatman" Badges.

- (3) Sea Scout Committees should frame by-laws:—
- (a) For the inspection of all boats used by Sea Scouts in their area, and for approving or disapproving their use with or without conditions.
  - (b) For restricting the sail area, and the number of Scouts they may carry, for the provision of air tanks, life belts, or other safety devices.
  - (c) For insuring that such vessels or boats when in use shall be properly manned, and in charge of a competent person.
  - (d) For the proper care and maintenance of any vessels or boats.

A copy of all rules framed by Sea Scout Committees should be forwarded to Provincial headquarters for approval.

- (4) Hat badges for wearing in front of caps are made in enamel, without plume, for Commissioners, Scoutmasters and Assistant Scoutmasters.



**SEA SCOUTS UNIFORM.**—The Sea Scout's uniform is as follows:—

A bluejacket's cap (with white cover for summer); blue shirt or jersey, the latter having the words "Sea Scouts" in white letters across the chest; blue shorts and stockings in blue woollen, long enough to turn up over the knees.

Scoutmasters and Patrol Leaders may use a "boatswain's pipe" instead of the usual whistle. Waterproofs or oilskins and sou'westers may be worn at the discretion of the Scoutmaster.

Hat or cap ribbons are inscribed "Sea Scouts." A Sea Scout Patrol Leader wears the *fleur-de-lis* on hat tally between the words "Sea" and "Scout."

Woollen caps suitable for Scouts to wear in camp are sanctioned for special purposes only, and should not be worn on parade.

## RANKS

## Sec. 18.—Tenderfoot Scout

To become a Scout a boy must be between the ages of 12 and 18.

He must satisfy his Scoutmaster that he knows the Scout Law (see p. 6), signs (see p. 391) and salute (see p. 90); the composition of the Union Jack (see p. 495), the right way to fly it (see p. 495); and the following knots—reef, sheet bend, clove hitch, bowline, fisherman's, and sheepshank. (See page 136.)

He must then make the Scout Promise.

## Investiture of Scouts

Following is the ceremonial for the investiture of a Tenderfoot Scout:—

The troop is drawn in horseshoe formation, with Scoutmaster and Assistant Scoutmaster in the gap as in the illustration appearing on p. 511.

The Tenderfoot with his Patrol Leader stands just inside the circle, opposite to the Scoutmaster. The Assistant Scoutmaster holds the staff and hat of the Tenderfoot. When ordered to come forward by the Scoutmaster, the Patrol Leader brings the Tenderfoot to the centre. The Scoutmaster then asks: "Do you know what your honour is?"

The Tenderfoot replies: "Yes, it means that I can be trusted to be truthful and honest" (or words to that effect).

"Do you know the Scout Law?"—"Yes."

"Can I trust you, on your honour,

1. To do your duty to God and the King?
2. To help other people at all times?
3. To obey the Scout Law?

The Tenderfoot then makes the half salute, (see page 90) repeating:

"I promise, on my honour,

1. To do my duty to God and the King.
2. To help other people at all times.
3. To obey the Scout Law."

The Scoutmaster continues: "I trust you, on your honour, to keep this promise. You are now one of the great brotherhood of Scouts." The Assistant Scoutmaster then puts on his hat and gives him his staff.

The Scoutmaster shakes hands with him with the left hand. The new Scout faces about and salutes the troop. The troop returns the salute, welcoming the new Scout. The Scoutmaster gives the command, "To your patrol; quick march." The troop standing at the alert, the new Scout and his Patrol Leader march back to their patrol.

The Tenderfoot, who is now a Scout, having made the promise is entitled to the privileges of his rank and to wear the uniform of a Scout and the Scout badge.

#### Tenderfoot Badge



The badge of the Tenderfoot Scout is in the form shown in the accompanying illustration. It is granted by the Local Association on the recommendation of the Scoutmaster and the possession of the badge is important as it indicates that the wearer is a Scout. It is worn in the form of a metal badge in the buttonhole of the coat or in the form of a cloth badge on the left pocket buttonhole of the uniform shirt. To enable the Local Association to remove it in case of the resignation or suspension of the Scout they should retain the ownership themselves.

#### Sec. 19.—Scout Uniform Officially Recognized

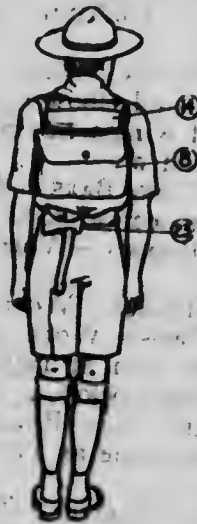
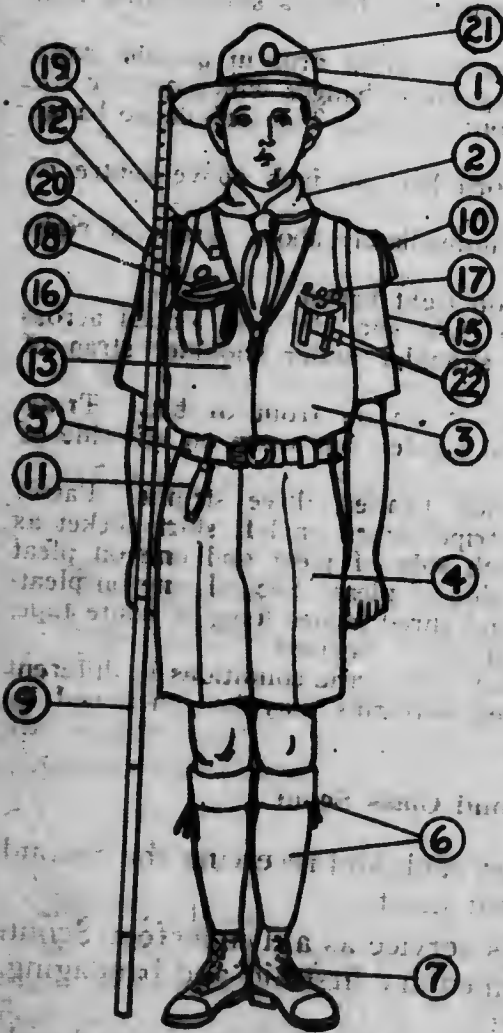
Official recognition of the Boy Scouts' uniform was granted in Canada by Militia General Order No. 27-17, March 15th, 1917, in the terms following:—

"The Boy Scouts' uniform (B.-P. Hat or Sea Scout Cap and Fleur-de-lis essential) is recognized as the uniform of a public service non-military body."

The attention of the Canadian General Council was subsequently drawn to the possibility of the uniform of officers of the Boy Scouts Association being regarded as an infraction of an Order of the Governor-General-in-Council (P.C. 17) of Jan. 4th, 1918. In order that Scoutmasters and other uniformed officers may be under no misapprehension in the matter, the following routine order of the Canadian Expeditionary Forces and the Active Militia called out on Active Service in Canada is published for information.

699. UNIFORM WORN BY SCOUTMASTERS AND SCOUTS.—Attention is called to General Order No. 27, 1917, which states that the Boy Scout uniform is recognized as the uniform of a

public service (non-military) body. The uniform to be worn by Scoutmasters and Scouts as laid down in "Policy, Organization and Rules for Canada, March 1916," published by the Canadian General Council of the Boy Scouts Association, is not to be considered as coming within the provisions of the Order-in-Council, No. P.C. 17, Jan. 4th, 1918.



Following is the Boy Scout uniform—

1. **HAT.**—Khaki colour, flat brim, strap round crown and lace. (The lace should be worn at the back of the head and tied on brim of the hat at front.)

2. **NECKERCHIEF.**—Of the troop colours. Each troop is entitled to make its own choice of neckerchief colours, subject to such choice being ratified by Local Association. The neckerchief is worn four-in-hand-knot at the throat and half hitch bent on shorter end.

3. **SHIRT.**—Blue, khaki or green with two patch pockets (buttoned) and shoulder straps. Sleeves rolled—roll inside.

4. **SHORTS.**—Blue or khaki (Scottish Scouts may wear the kilt and sporran in place of shorts). When standing, bottom of shorts should reach top of knee-cap.

5. **BUTTONS.**—Brown leather or web, with swivels.

6. **STOCKINGS.**—Blue or black

with khaki or green tops worn turned down below the knee with green tabs showing on outside.

7. **BOOTS OR SHOES.**—Brown or black.

8. **HAVESACK.**—Worn as a knapsack.

9. **STAFF.**—Marked in feet and inches, five feet six inches in length.

10. **SHOULDER KNOT.**—Six inches long of Patrol colours on left

shoulder. Troop Leader wears shoulder knot to correspond with the troop colours.

11. **KNIFE.**—(Optional) on belt or lanyard.

12. **SHOULDER BADGE.**—Indicating the troop may be worn on authorization by Provincial Council.

13. **LANYARD.**—(Optional) to carry whistle.

14. **GREATCOATS, MACKINTOSHES, ETC.**—(Optional) if not worn to be carried on top of haversack.

15. **KING'S SCOUT BADGES.**—Worn on left arm. King's Scout badge above first class badge, qualifying proficiency badges surrounding first class badge.

16. **PROFICIENCY BADGES.**—Worn on the right arm in parallel rows between the shoulder and elbow except those badges which qualify for the King's Scout and King's Sea Scout badges. The ambulance badge may be worn on both arms.

17. **SERVICE STARS AND BARS.**—Worn half an inch above centre of left shirt pocket (see section 43).

18. **WAR SERVICE BADGES.**—Worn immediately above centre of right shirt pocket.

19. **LIFE SAVING MEDALS.**—Worn on right breast.

20. **ALL ROUND CORDS.**—Worn on right shoulder and looped across pocket, worn around arm at right shoulder under shoulder strap of shirt and looped across pocket.

21. **PATROL LEADER'S HAT BADGE.**—Worn on front of hat. Troop Leader's Hat Badge—same as Patrol Leader, but worn on left side of hat.

22. **LEADER'S RANK STRIPES.**—Troop Leader, three stripes. Patrol Leader, two stripes. Second, one stripe—worn on left shirt pocket as follows: Troop Leader, one on each side of pleat and one on pleat itself; Patrol Leader, one on each side of pleat; Second, one on pleat. Stripes to be one-half inch wide, and three inches long of white tape.

23. **PROVINCIAL EMBLEM.**—If, and as, authorized.

24. **WINTER UNIFORM.**—On account of climatic conditions in different Provinces of the Dominion, winter uniforms may be sanctioned by the Provincial Councils.

#### Sec. 20.—Second Class Scout

Before attaining Second Class rank and receiving the Second Class badge a Tenderfoot Scout must:—

1. Have at least one month's service as a Tenderfoot Scout.
2. Have a knowledge of elementary first aid and bandaging, covering the following:—

(1) Fastening the bandage; (2) The triangular bandage; (3) To make a large arm sling; (4) Fractured arm bone; (5) To carry a patient; (6) Fracture of the forearm; (7) Fractured jaw; (8) Fractured collar bone; (9) Fracture of the leg; (10) Arterial bleeding. (For information on these subjects see chap. vi.)

3. Know the Semaphore (or Morse) alphabet. (See pp. 405-406.)
4. Follow a track half a mile in twenty-five minutes or, if in a town, describe satisfactorily the contents of one shop window out of four, observed for one minute each (see p. 533); or Kim's Game (see p. 527), to remember sixteen out of twenty-four well assorted small articles after one minute's observation.
5. Go a mile in twelve minutes at "Scout's Pace." (See p. 572.) This is not an athletic feat but a test in judging distance by time. Thirty seconds' leeway permitted.
6. Lay and light a wood fire in the open, using not more than two matches. No paper to be used. (See p. 339.)
7. Cook a quarter of a pound of meat and two potatoes without cooking utensils other than the regulation billy, in the open, over camp fire. N.B.—*Or without any utensils.* (See page 346.)
8. Know the sixteen principal points of the compass. (See p. 115.)

**UNIFORM as for Tenderfoot.**



the Scoutmaster. It is worn on the left arm, between the shoulder and elbow.

THE BADGE of the Second Class Scout, shown in the accompanying illustration, is embroidered in cloth in the form of a scroll with a knot suspended therefrom. The badge is granted by the Local Association, on the recommendation of

**Sec. 21.—First Class Scout**

Before attaining First Class rank and receiving the First Class badge a Second Class Scout must pass the following tests, to the satisfaction of at least one independent and qualified examiner, approved by the Local Association:—

1. Swim fifty yards. (For information on this subject see p. 368.) If a doctor certifies that bathing is dangerous to the boy's health he must, instead of this, pass for one of the following proficiency badges: Ambulance, Fireman, Marksman, Pathfinder, Signaller, or Stalker. (See pp. 60, 67, 72, 74 and 78.)

2. Have at least one dollar in the savings bank. (See p. 523).
  3. Send and receive a message either in Semaphore, twenty letters per minute, (see p. 401,) or in Morse, sixteen letters per minute. (See p. 403.)
  4. Go on foot, row a boat or paddle canoe alone or with another Scout to a point seven miles away and return again, or if conveyed by any vehicle (railway and automobiles not allowed) or animal, go a distance of fifteen miles and back (mileage in city not counted) and write a short report (not essay) of the journey showing observation, self reliance and initiative. Two days should be taken over the journey.
  5. Describe the proper method of dealing with any of the following accidents (as may be allotted by the examiners): fire, drowning, runaway carriage, sewer gas, ice breaking, electric shock; also bandage an injured patient, or revive an apparently drowned person, and describe what to do under the following circumstances:—(1) To promote circulation; (2) Horse running away; (3) Ice accident; (4) Strangulation; (5) Object in ear; (6) Object in eye; (7) Escape of gas; (8) How to deal with electric shock; (9) Substance in throat; (10) Poisoning; (11) Shæfer method of resuscitation; (12) Bites; (13) Burns; (14) Fit; (15) Fainting; (16) Action in case of fire. (See chap. VI.)
- Have a knowledge of first aid to the injured: (1) Fastening the bandage; (2) The triangular bandage. (3) To make a large arm sling; (4) Fractured arm bone; (5) To carry a patient; (6) Fracture of the forearm; (7) Fractured jaw; (8) Fractured collar bone; (9) Fracture of the leg; (10) Fracture of the thigh; (11) Arterial bleeding and Hæmorrhage. (See chap. VI.)
6. Cook satisfactorily (over camp fire in the open, if possible) two out of the following dishes as may be directed: porridge, bacon, hunter's stew; or skin and cook a rabbit; or pluck and cook a bird; clean and cook fish; also make a "damper" of half a pound of flour, or a "twist" baked on a thick stick. (See p. 346.)
  7. Read the conventional signs of a map correctly and draw an intelligible rough sketch map. (See p. 128.)



Point out a compass direction without the help of a compass. (See p. 116.)

8. Use an axe for felling or trimming light timber (see p. 155), or as alternative produce an article of carpentry or joinery, or metal work, made by himself satisfactorily.
9. Judge distance, area, capacity, numbers, height and weight within 25 per cent. error. (See p. 131.)
10. Bring a Tenderfoot Scout trained by himself in the points required for a Tenderfoot badge. (See p. 45.) This may be postponed if recruits are not immediately desired, but must be carried out within three months of its being required, or the badge given up.

**UNIFORM** as for Tenderfoot Scout.



**THE BADGE** of the First Class Scout, as shown in the accompanying illustration, is a combination of the Tenderfoot and Second Class badges. It is embroidered on cloth and is worn on the left arm between the shoulder and elbow.

**Sec. 22.—King's Scout**

A King's Scout must be a First Class Scout, and duly qualified to wear four of the following proficiency badges (of which Pathfinder is compulsory): Ambulance, Cyclist, Marksman, Pathfinder, Signaller, Fireman, Rescuer. Should he fail to re-pass the annual test for any qualifying badge he must cease to wear the King's Scout badge.

**UNIFORM** as for Tenderfoot Scout.

**THE BADGE** of the King's Scout is a golden crown worn on the left arm, above the First Class badge, the qualifying badges to surround the First Class badge. (See p. 48.)



**Sec. 23.—King's Sea Scout**

A King's Sea Scout must be a First Class Scout and have the badges of Boatman, Swimmer, Signaller, Rescuer, and one of the following: "Watchman," "Pilot," "Sea Fisherman." He is liable to annual re-examination for all the qualifying badges.



The grade is equal to that of a King's Scout.

UNIFORM as for Tenderfoot.

THE BADGE, a Naval Crown, is worn in the same position as the King's Scout badge, or between that and the First Class badge if he is also a King's Scout.

#### Sec. 24.—All-Round Cords

Scouts with the following qualifications are entitled to wear All-round Cords on the right shoulder.

There are three grades of All-round Cords:—

- (a) For holder of six Proficiency Badges. Open to First Class Scouts only.
- (b) For holder of twelve Proficiency Badges. Open to King's Scouts only.
- (c) For holder of eighteen Proficiency Badges. Open to King's Scouts only.

The colours for the first grade are green and yellow, for the second grade red and white, for the third grade gold.

#### Sec. 25.—Second

A Second is recommended by his Patrol Leader to the Scoutmaster to act as an assistant to the Patrol Leader and to take charge of the patrol when the Patrol Leader is away.

UNIFORM as for Tenderfoot with a single white braid, vertical stripe, 3 in. long by  $\frac{1}{2}$  in. wide, worn on right side of pleat of left shirt pocket.

#### Sec. 26.—Patrol Leader

A Patrol Leader is appointed by the Scoutmaster or by vote of the patrol to its leadership.

Patrol Leaders rank before all other Scouts.

UNIFORM as for Tenderfoot, with two white braid vertical bars, 3 in. long by  $\frac{1}{2}$  in. wide, worn one on either side of pleat of left shirt pocket.

THE BADGE, a white metal fleur-de-lis and scroll with motto, is worn on the front of the hat, and a white metal button-hole badge in the button-hole of the coat.

#### Sec. 27.—Troop Leader

A Troop Leader may be appointed by the Scoutmaster and ranks as senior Patrol Leader. He must be 16 or over, and

may act as Troop Quartermaster or Secretary at the discretion of the Scoutmaster.

**UNIFORM** as for Tenderfoot.

**BADGE** as for Patrol Leader but worn on left side of hat. Shoulder knot troop colours. Three vertical stripes  $3 \times \frac{1}{2}$  in. worn on left breast pocket, one on pleat and one on each side of same.

### EXECUTIVE OFFICERS

#### Sec. 28.—Assistant Scoutmaster

Each troop of Scouts has one or more officers known as Assistant Scoutmasters, who, as the title suggests, act as assistants to the Scoutmaster, performing such duties as the latter may assign to them. Assistant Scoutmasters should, however, have a definite share of responsibility for some portion of the troop management.

The qualifications for Assistant Scoutmasters are the same as for Scoutmaster, with the exception that they need only be eighteen years of age, and section (e) does not apply.

In special cases the Provincial Council may sanction the appointment of A. S. M.'s of the age of 17.

Warrants are issued as to Scoutmasters.

**UNIFORM** as for Scoutmaster. (See p. 54.)

Hat badge, red. Shoulder knot, red, to be worn only on camp uniform.

#### Sec. 29.—Scoutmaster

Each troop of Scouts is under the direction of an adult leader, known as a Scoutmaster.

The qualifications for a Scoutmaster are as follows:—

- (a) A general knowledge of the official Handbook for Canada.
- (b) A full appreciation of the religious and moral aim underlying the scheme of Scouting.
- (c) Personal standing and character such as will ensure a good moral influence over the boys and sufficient steadfastness of purpose to carry out the work with energy and perseverance.
- (d) Age not less than twenty-one years.
- (e) Must obtain the use of some of club-room for Scout meetings.

(f) Three months' probationary service with a troop.

Scoutmasters are nominated by the Local Association and must be approved by the Provincial Council before receiving a warrant from the Chief Scout for Canada.

Warrants are granted only to Scoutmasters of duly registered troops and are valid only for the Local Association area.

When a Scoutmaster ceases to have charge, or joint charge, of a troop his warrant lapses, and should be returned to Headquarters through the proper channels.

When a Scoutmaster resigns, or receives promotion, or wishes to take up work in a different Province, his warrant must be sent by the Local Association through the District Commissioner to Provincial Headquarters for transmission to the Chief Scout for his endorsement.

#### Lady Scoutmaster

For the purpose of enabling a Local Association to register a troop of Scouts ladies may, if recommended by the District Commissioner, be designated and recognized as Scoutmasters or Assistant Scoutmasters. Warrants for these ranks will only be issued to ladies under special circumstances.

The following UNIFORM for Lady Scoutmasters, and Lady Assistant Scoutmasters, is recommended, but is not obligatory:—

Scoutmaster's hat, khaki, green or blue shirt or Norfolk jacket, khaki, green or blue skirt, Scout belt, brown shoes and stockings, green tie, whistle and lanyard and appropriate badges.

#### Uniform for Scoutmasters in Charge of Sea Scout Troops

Scoutmasters wear blue serge double-breasted jacket, horn buttons, or blue shirt, blue trousers, or blue shorts and stockings, and blue peak-cap with white cover for summer, and black band. Badges are made in enamel, without plume, and worn in front of cap. (See page 44.)

#### Scoutmaster's Uniform for Ceremonial and Parade

Any extraordinary "get-up" is much to be deprecated. Military uniform and accoutrements must not be worn or copied by Scoutmasters. (See p. 81.)



**HAT**, khaki colour, similar to Scout's, of good quality. (A lace should be worn at the back of the head and tied in the front on the brim of the hat.)

**SHIRT**, khaki or white, collar to match.

**TIE**, green.

**BREECHES**, khaki semi-riding breeches.

**COAT**, khaki, similar to cut, belt same material as coat. No shoulder knot.

**PUTTEES OR LEGGINGS**.

**BOOTS**, brown.

**GLOVES**, tan.

**WALKING STICK**.

**WHISTLE** with lanyard.

**BADGE**, hat badge with green plume, on left of hat.

Warrant officers should wear button-hole badge according to rank, A.S.M.'s, red; S.M., green.

**GREAT COAT**, provincial regulations to govern.

**N.B.**—Hat badges are issued only to warrant officers. If, on the score of expense, etc., uniform is not desired, an ordinary Norfolk suit, preferably brown, with the Scout hat, appropriate badges and green tie may be worn on all occasions.

Scottish Scoutmasters may wear the kilt and sporrán, with shirt, hat, etc., as detailed above.



**Scoutmaster's Uniform for Camp, Games, etc.**

Shirt, shorts, neckerchief, green or troop colours, white shoulder knot.

**Sec. 80.—District Scoutmaster**

The District Commissioner may recommend a Scoutmaster, or other suitable person, to take charge of combined rallies

or for any duties compatible with these regulations with which he may invest the appointment. These appointments are for a period, at the most annual.

UNIFORM, as for Scoutmaster (see p. 55.)

BADGE, as for Scoutmaster, plume white.

#### Sec. 31.—District Commissioner

District Commissioners are appointed on the recommendation of the Provincial Council to act under the latter in particular districts which may comprise one or more Local Association areas as the Provincial Council may see fit. The District Commissioner is a member of all Local Associations (see p. 37) within his jurisdiction, and acts as chief executive officer of the Boy Scout, (and *Wolf Cub*) Movements within the area under his jurisdiction.

His duties are:—

(1) To countersign all recommendations for warrants to any officer within the area under his jurisdiction. The Commissioner has power to suspend any officer in his district pending enquiry by the Local Association. If the removal of any officer is recommended both by the Commissioner and the Local Association the matter need only be reported to Provincial Headquarters who will call for the withdrawal of the warrant. If the Local Association and the District Commissioner differ the matter must be referred by the District Commissioner to the Provincial Council for decision.

(2) To approve of all applications for troop (or *Wolf Cub pack*) registration.

(3) To take charge of all rallies or parades, arranged within the area under his jurisdiction or to depute this authority to another officer when he deems it expedient.

(4) To approve the formation of Sea Scout troops, or patrols, and to notify the Provincial headquarters immediately and satisfy himself that the necessary rules for the safety of the Scouts on the water have been made and are carried out.

UNIFORM.—Flat brim Stetson hat, riding breeches, khaki coat, green tie, tan gloves, tan leggings, or puttees and boots.

BADGE.—A hat badge with a purple plume worn on the left side of hat and a Commissioner's pin worn in the lapel of coat or as a tie pin.

**Sec. 32.—Provincial Commissioner**

The Provincial Commissioner is the leader and principal executive officer in each province, holding office and warrant as the representative of the Canadian General Council. As such, his duty is to foster and encourage the interests of the Boy Scouts (and *Wolf Cubs*) generally throughout the province, to endorse all applications for warrants of appointment, and for awards for acts of gallantry and meritorious service.

The uniform and badge of the Provincial Commissioner are similar to those of a District Commissioner.

**Assistant Provincial Commissioner**

An Assistant Provincial Commissioner may be appointed on the recommendation of the Provincial Council, who may also act as the Provincial Secretary.

**Sec. 33.—Canadian General Council**

The Dominion Commissioner is the chief executive officer of the Canadian General Council, which is the governing body of the Association in Canada.

Other officers of the Canadian General Council are the Honorary Dominion Secretary and Honorary Treasurer.

All members of the Executive Committee of the Canadian General Council rank as Commissioners.

The rank of employed officers of the Canadian General Council is as determined by the latter.

**OFFICERS HOLDING HONORARY RANK**

**Sec. 34.—Lady Worker**

A badge may be granted by the Provincial Council on the nomination of the Local Association and the recommendation of the District Commissioner to any lady:—



(a) Who has carried out the organization and administration of a troop of Boy Scouts, and who has secured the services of a Scoutmaster (or *Cubmaster*) for field work.

or

(b) Who is giving regular instruction to a troop of Boy Scouts in such subjects as can be efficiently taught by a lady.

Lady Workers have honorary rank as Scoutmasters.

**BADGE**, a silver fleur-de-lis brooch with blue enamel stars, worn at throat or on breast.

#### Sec. 35.—Instructor

Warrants will be issued to Instructors in any subject necessary for the proficiency badges, subject to the following conditions:—

- (a) Warrants are only issued on the nomination of the Local Association and the recommendation of the District Commissioner.
- (b) The Local Association, or other body, must satisfy itself that the Instructor has expert knowledge of his special subject or subjects and that he has already been instructing a troop of Scouts in the district for a period of at least one month.
- (c) Instructors must be at least 18 years of age.
- (d) Warrants are returnable to Headquarters should the Instructor not be able to carry on the work.

Instructors hold honorary rank as Assistant Scoutmasters.

**UNIFORM** as for Scoutmaster, but without shoulder-knot (See p. 55.)

**HAT BADGE** with white plume is worn in front of hat.

#### Sec. 36.—Surgeon

A warrant is granted on the nomination of the Local Association and the recommendation of the District Commissioner, to a Surgeon giving his services to a troop or to troops of Scouts.

Surgeons hold honorary rank as Scoutmasters.

**UNIFORM**, if desired, as for Scoutmaster without shoulder-knot. (See p. 55.)

**BADGE**.—A red cross on a circular white ground, to be worn in button-hole.



**Sec. 37.—Chaplain**



A Chaplain is a minister of religion nominated by a Local Association or one of the bodies alluded to in Rules 2 and 76. Chaplains hold honorary rank as Scoutmasters.

**UNIFORM**, if desired, as for Scoutmaster. (See p. 55.)

**BADGE**, a green fleur-de-lis enamelled pin with a cross superimposed, to be worn with ordinary clothes.

When in uniform a square khaki cross is to be worn on the left pocket.

**Sec. 38.—Honorary Scoutmaster**

Headquarters will consider applications for the issue of warrants for this rank to a retired Scoutmaster who wishes to remain attached to the troop of which he was Scoutmaster, or to other persons specially recommended by the District Commissioner.

**UNIFORM** and **BADGE** as for Scoutmaster. (See p. 55.)

**Sec. 39.—Provincial President**

The Presidents of the several Provincial Councils are appointed by the Chief Scout for Canada and rank as Commissioners.

**UNIFORM** and **BADGE** may be worn, if desired, as for Commissioner. (See p. 55.)

**Sec. 40.—Local Association Officers**

Presidents and other officers of Local Associations may wear the uniform of a Scoutmaster if they so desire. (See p. 55.)

**Sec. 41.—PROFICIENCY BADGES**

Scouts should be encouraged to attain First Class rank before qualifying for proficiency badges. Second Class Scouts may, however, be permitted to qualify for not more than six proficiency badges. Tests must be passed before at least one independent and qualified examiner approved by the Local Association. Those marked "to be passed annually" must be

so passed or the badge removed. A candidate's Scoutmaster or parents are not considered independent examiners. Applications for proficiency badges must be made by Secretaries of Local Associations to Provincial Headquarters.

Proficiency badges are worn on the right arm in parallel rows between the shoulder and elbow, except those badges which qualify for the King's Scout and King's Sea Scout badges, which are all worn on the left arm.

The only badge which may be worn on both arms is the Ambulance badge, which is invariably worn as the top badge nearest the shoulder, whether gained first or later.

Following is the list of authorized proficiency badges.

**Ambulance. (To be passed annually.)**

To obtain the Ambulance proficiency badge a Scout must know:—



1. The fireman's lift.
2. How to drag an insensible man with ropes.
3. How to improvise a stretcher.
4. The position of the main arteries.
5. How to stop bleeding from a vein or artery, internal or external.
6. How to improvise splints and to diagnose and bind a fractured limb.
7. The Schaefer method of artificial respiration.
8. How to deal with choking, burns, scalds, frost bites, poison, grit in the eye, bites or scratches of dogs and other animals, snake bites and the stings of insects, sprains and bruises.
9. How to diagnose and treat fits, fainting and insensibility, as the examiner may require.
10. How to throw a life line and how to deal with electrical accidents.

**Airman**

To obtain the Airman proficiency badge a Scout must:—

1. Make a working model of an aeroplane or dirigible that will fly at least 25 yards,
2. Have a knowledge of the theory of aeroplanes and dirigibles and their engines, and balloons.



**Artist**

To obtain the Artist proficiency badge a Scout must:—



1. Draw a cylindrical object and a rectangular object grouped together a little below the eye and show light and shade.
  2. Make and present a free-hand pencil or pen drawing of a bird or animal showing in values distribution of colour, or draw in any medium a flower-spray or leaf-spray or a camp scene.
  3. Make a drawing of some example of historical ornament.
  4. Make an original decorative arrangement in colour, using any motif, and state for what use intended.
  5. State the essentials of the reproduction processes of etching, halftone engraving and lithography.
- Or, as an alternative the following:—

*(b) Architecture*

1. Present a satisfactory free hand drawing.
  2. Draw, without accurate measurements, the five orders of architecture, the drawings being of the character of sketches, but preserving proportions.
  3. Submit an original design for a two-storey house, and tell what materials are necessary for its construction, giving an outline of specifications; the design to consist of original working drawings at scale, drawn in ink on linen or paper suitable for making prints.
- Or, as a further alternative the following:—

*(c) Sculpture*

1. Make a shaded drawing in pencil, or charcoal, of a cylindrical object and a rectangular object grouped together a little below the eye.
2. Model in clay or plasticine two or more examples of Greek or Renaissance ornament, from a cast or model.
3. Make a copy in clay or plasticine in full size of a part of an antique statue, as a head, a hand, or a foot.
4. Make a statue "in the round" of a head, of life size, from a living model.
5. Make a study "in the round" of an animal or group of animals.

## Boy Scouts

### Basket Worker

To obtain the Basket Worker proficiency badge a Scout must:—



1. Have a general knowledge of the raw material used in one or other of the branches covered by the badge.

2. Plan and weave a large reed or raffia basket or tray and weave a cane seat for a stool, or a rush seat for a chair, or cane a chair.

### Bee-Keeper

To obtain the Bee-Keeper proficiency badge a Scout must:—



1. Have a knowledge gained in practise of swarming, hiving, hives, and general apiculture, including a knowledge of the use of artificial combs, etc.

### Blacksmith

To obtain the Blacksmith proficiency badge a Scout must:—



1. Make an open link  $\frac{3}{8}$  inch stock.

2. Forge a chain hook out of  $\frac{3}{4} \times \frac{3}{8}$  inch soft steel, or  $\frac{3}{4}$  inch round iron.

3. Bend and weld three links to be fastened by a ring to the hook made as above, links and ring to be made of  $\frac{3}{8}$  inch round iron.

4. Make a bolt of  $\frac{1}{2}$  inch stock; make a straight lap weld of  $\frac{1}{4} \times 1$  inch stock.

5. Make a cold chisel out of  $\frac{5}{8}$  inch hexagonal tool steel.

6. Temper a rock drill and explain how to harden and temper a cold chisel.

### Boatman

To obtain the Boatman proficiency badge a Scout must:—

1. Be a good swimmer and be able to manage a boat single-handed, rowing and sculling over the stern; to steer a boat under oars and bring her alongside a vessel or landing stage.

2. Be able to box the compass.

3. Know how to tow or be towed.

4. Be able to distinguish the various classes of sailing vessels by their rig.



5. Be able to make at least twelve bends, hitches, or knots and four splices, and be able to throw a line.
6. Understand the nature of small rowing and sailing craft and the terminology applied to their parts.
7. Know how to handle a boat in smooth or rough water and how to row and sail a boat.

Or, as an alternative he

Must demonstrate his ability to swim at least fifty yards and paddle a canoe with single and double blade, ability to handle a canoe in rough water and know the parts of a canoe and the terminology of the same. He must know the different styles of canoes and their uses and the elements of portaging, the proper method of loading a canoe and packing dunnage.

### Bugler

To obtain the Bugler proficiency badge a Scout must:—



Sound properly on the bugle the Scouts' Rally and the following Army calls:—Alarm, Charge, Orderlies (ord. corpls.), Orders, Warning for Parade, Quarter, Bugle, Fall in, Dismiss, Rations, 1st and 2nd Dinner calls (men's), Reveille, Last Post, Lights Out, Officers, Defaulters.

### Camper

To obtain the Camper proficiency badge a Scout must:—

1. Have camped out thirty nights either in bivouac or under canvas.

2. Know what are required as minimum requisites in (a) kit, (b) utensils, (c) rations, for seven boys for a week's camp in summer.

3. Demonstrate what kit he would take on a hike or canoe trip of not less than three days' duration, covering nine miles per day.

4. Know how to select and lay out a camp for (a) patrol, (b) troop of forty boys, making necessary kitchens, rubbish pits or incinerators, latrines, etc.

5. Demonstrate ability to cook a meal for himself or party.

6. Demonstrate how to pitch and strike a tent and carry out ordinary repairs to same.

7. Know the precautions to be taken against forest fires.



8. Know the precautions to be taken to avoid the danger of contaminated drinking water.
9. Build a shelter for three Scouts, using only natural materials.

#### Carpenter Badge

To obtain the Carpenter proficiency badge a Scout must qualify as follows:—

1. TREES.—Distinguish six of the common trees growing in the locality.
2. WOODS.—Know hard woods from soft woods, and their general characteristics and uses, and recognize three kinds of hard woods and three soft woods in common use.
3. SAWING.—Know construction and use of saws: crosscut, rip, tenon, keyhole and bow saw.
4. CUTTING.—Know how to grind, set and use a plane, spokeshave, chisel, knife and axe.
5. BORING.—Know how and when to use an auger, centre and drill bit; also the construction and use of the brace.
6. JOINTS.—Know how to make a butt, housing, halved, bridle and mortise and tenon joint.
7. NAILING.—Know how to drive, set and clinch a nail, drive and draw a spike with a claw-hammer, and drive a screw-nail in hard and soft wood.
8. GLUING.—Know how to prepare and use glue.
9. CONSTRUCTION.—Make an article of furniture for practical use in the home, requiring the use of various tools, and advanced joints and operations.
10. RUSTIC.—Know how to set up a seat and table for camp use.
11. SQUARING.—Know how to lay out a square or rectangle by the 3, 4, 5 method, and prove it by its diagonals.



#### Citizen

To obtain the Citizen proficiency badge a Scout must know:

1. The qualifications for voting at Dominion, Provincial and Municipal elections in the Province in which he lives.
2. How people become British subjects.
3. How Canada and the Province and the Municipality in which he lives are governed.



4. How the United Kingdom is governed and what control its government exercises over Canada.
5. The leading principles of the British North America Act.
6. The principal functions of a good municipal government.
7. What the principal courts of justice of the Dominion and his province are and the duties of the principal officers of such courts, and particularly of jurymen, how they are chosen, and their duties.
8. What a Scout can do to beautify and make healthy the place he lives in, and
9. What the principal duties are of a good citizen; stress to be laid upon general principles and not upon details which do not concern the ordinary citizen, the main object being to teach a Scout those duties which every good citizen should perform or may be called upon to perform.
10. The Scout must produce a certificate, signed by his Scoutmaster, showing that he has personally taken part in some useful public service.

**Clerk**

To obtain the Clerk proficiency badge a Scout must pass a test in:—



1. Handwriting.
2. Hand-printing.
3. Typewriting (or as an alternative, short-hand 20 words a minute as a minimum).
4. Write a letter from memory on a subject given verbally five minutes previously.
5. Know simple book-keeping, and have an elementary knowledge of banking.

**Cook**

To obtain the Cook proficiency badge a Scout must:—

1. Make a cooking place with a few bricks, stones, or logs, light a fire in same and cook the following dishes thereon: porridge, Irish stew, vegetables, plain egg omelet, boiled, fried, scrambled and poached eggs, make tea, coffee or cocoa, rice puddings, batter pudding and pan cakes; also clean and cook fish in the fireplace.



2. Mix dough and bake bread in an oven or make a damper or twist (round stake) at a camp fire.
3. Have a knowledge of the methods used in cooking meats and explain the uses of baking powder and baking soda.

**Cyclist. (To be passed annually.)**

To obtain the Cyclist proficiency badge a Scout must:—



1. Sign a certificate that he owns a bicycle in good working order, which he is willing to use in the King's service if called upon at any time in case of emergency.
2. Demonstrate his ability to ride his bicycle satisfactorily and repair punctures, take his bicycle apart, clean it and put it together again, etc.
3. Be able to read a road map, make a written report, and repeat correctly a verbal message.
4. Have a knowledge of local by-laws governing street or road traffic. On ceasing to own a bicycle he must hand back his badge.

**Dairyman**

To obtain the Dairyman proficiency badge a Scout must:—

1. Have a knowledge gained by practise of management of dairy cattle, milking, making butter and cheese, sterilization of milk, care of dairy utensils and appliances.



2. Have a practical knowledge of the use and purpose of the Babcock test.

**Electrician**

To obtain the Electrician proficiency badge a Scout must:—



1. Make a simple electro magnet, repair blown fuses and broken electrical connections.
2. Have a knowledge of the method of rescue and resuscitation of persons suffering from shock.
3. Have an elementary knowledge of the action of simple battery cells and the working of electric bells and telephones.



**Engineer**

To obtain the Engineer proficiency badge a Scout must:—



1. Have a general idea of the working of motor cars and steam locomotives, marine, internal combustion engines and electric motors.
2. Know the names of the principal parts and their functions of any one of them chosen by himself, and how to start, drive, feed, stop and lubricate it.

**Entertainer**

To obtain the Entertainer proficiency badge a Scout must:—

1. Be able to entertain a mixed audience for at least 15 minutes with a varied programme from the following:—Recitations, songs, playing banjo, tin whistle, mouth-organ, conjuring tricks, character sketches, stories, ventriloquism, stump speeches, and step dancing.



**Farmer**

To obtain the Farmer proficiency badge a Scout must:—



1. Have a knowledge gained by practise of ploughing, cultivation, drilling, hedging, fencing and draining.
2. Have a general knowledge of farm machinery, hay-making, reaping, loading and stacking, and an acquaintance with the routine seasonal work on a farm, including the care of cattle, horses, sheep and pigs.
3. Know how to lay down fire guards.

**Fireman. (To be passed annually.)**

To obtain the Fireman proficiency badge a Scout must:—

1. Have a knowledge and use of chutes, ropes, jumping sheets, fire extinguishers; pass tests in fireman's lift, dragging patients, and passing buckets.



2. Have knowledge of how to turn in an alarm, how to enter burning buildings and work in fumes, how to prevent spread of fire, how to prevent bush fires, how to rescue animals and save property, and the use of

"scrum" to keep back a crowd, and how to improvise ropes and jumping sheets.

3. Have knowledge of fire preventive methods; especially bush and prairie methods.

### Fisherman

To obtain the Fisherman proficiency badge a Scout must:—



1. Catch and name seven different species of fishes by the usual angling methods (fly-casting, bait-casting, trolling, and bait-fishing). At least one species must be taken by fly-casting and one by bait-casting. In single-handed fly-casting the rod must not exceed seven ounces in weight; in double-handed fly-casting one ounce in weight may be allowed for each foot in length; in bait-fishing and trolling the rod must not exceed ten feet in length nor twelve ounces in weight.
2. Show proficiency in accurate single-handed casting with the fly for distances of 30, 40, and 50 feet, and in bait-casting for distances of 40, 60, and 70 feet.
3. Make three artificial flies (either after three standard patterns, or in imitation of different natural flies) and take fish with at least two of them. Make a neat single gut leader at least four feet long, or a twisted or braided leader at least three feet long. Splice the broken joint of a rod neatly.
4. Give the open season for the game fishes in his vicinity, and explain how and why they are protected by the law.

### Forestry

(In lieu of woodman.) To obtain the Forestry proficiency badge a Scout must:—

1. Identify the principal native tree species in own locality, and explain their principal distinguishing characteristics.
2. Identify five kinds of shrubs.
3. Describe the principal uses of ten species of Canadian woods. Visit a wood-using factory, if practicable.
4. Explain the aim of forestry, and compare with agriculture and unregulated lumbering.
5. Tell what are the effects of fires on soil, young forest growth and mature timber; the principal causes of forest fires



and how best to overcome them; three general classes of forest fires, and how to fight each.

6. Describe how the forest lands are protected and administered in your province.

7. Describe the general features of a lumbering or pulp-wood operation; how the cutting is done in the woods; method of transportation to the mill, and of manufacture there. Visit some portion of woods operation, or saw-mill, or pulp or paper mill, if practicable.

8. (*Optional.*) Discuss one or more of the enemies of trees, such as insects (leaf-eaters, bark-borers, wood-borers), or decay (fungus diseases), and tell something of how damage from these sources may be lessened or overcome.

## Friend to Animals

To obtain the Friend to Animals proficiency badge a Scout must:—



1. Have a general knowledge of the anatomy of domestic and farm animals, and be able to describe treatment and symptoms of wounds, fractures and sprains, exhaustion, choking, lameness.

2. Understand shoeing and shoes, and be able to give a drench for colic.

3. Know telephone number and other particulars about the local Society for the Prevention of Cruelty to Animals (if any).

4. Know the treatment for milk fever, and how to feed and water animals, particularly horses and cattle.

## Gardener

To obtain the Gardener proficiency badge a Scout must:—

1. Dig a piece of ground not less than 12 feet square.

2. Plant and grow successfully six kinds of vegetables or flowers from seeds or cuttings.

3. Know the names of a dozen plants pointed out in an ordinary garden.

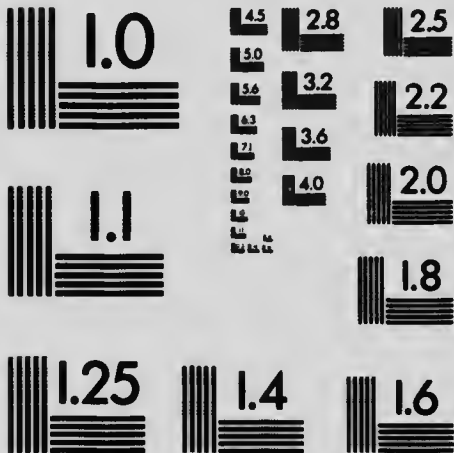
4. Understand what is meant by pruning, grafting and manuring.





# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



**APPLIED IMAGE Inc**

1653 East Main Street  
Rochester, New York 14609 USA  
(716) 482 - 0300 - Phone  
(716) 288 - 5989 - Fax

**Handyman**

To obtain the Handyman proficiency badge a Scout must:—



1. Be able to paint an article of furniture or piece of construction, use whitewash, repair gas fittings, tap washers, sash lines, window and door fastenings, replace gas mantles and electric light bulbs, hang pictures and curtains, repair spring roller window blinds, fix curtain and portiere rods, blind fixtures, lay carpets and beat same, mend upholstery, do small furniture and china repairs, and sharpen knives, etc., and do simple soldering.

Or, as an alternative to repairing gas fittings and the replacing of gas mantles and electric light bulbs, must be able to put glass in windows, prepare and hang paper on walls, and repair cane-bottomed chairs.

**Healthy Man**

To obtain the Healthyman proficiency badge a Scout must:

1. Know the importance of keeping the heart, lungs, skin, teeth, feet and stomach, and organs of special senses (eye, ear and nose) in good order and the principal dangers to be guarded against.

2. Give general rules regarding eating, drinking, breathing, sleeping, cleanliness and exercising.

3. In the event of absence from Scout duty through illness show that same was not caused by failure to observe these rules.

4. Know the dangers incurred in the use of tobacco, and alcohol, and the breaking of the tenth Scout Law.

5. Know the danger of overtraining the body and the continual use of one form of exercise.

6. Be able to train a patrol in simple exercises suitable for strengthening all parts of the body and give reasons for such exercises.



**Horseman**

To obtain the Horseman proficiency badge a Scout must:—



1. Ride at various paces, saddle and bridle a horse correctly.

2. Harness correctly in single or double harness.

3. Be able to drive.

4. Know how to water and feed, and groom his horse properly; the evil of check reins and ill-fitting saddlery or harness; the principal causes and remedies of lameness.

**Interpreter**

To obtain the Interpreter proficiency badge a Scout must:—

1. Be able to carry on a simple conversation, write a simple letter on subject given by examiner, read and translate a passage from a book or newspaper, in any language other than that of his own country.



**Laundryman**

To obtain the Laundryman proficiency badge a Scout must:



1. Wash and finish garments of linen, cotton, wool and flannel, including dressing a shirt.

2. Pass a theoretical test as examiner may require.

**Leatherworker**

To obtain the Leatherwork proficiency badge a Scout must:

Have a knowledge of tanning and curing and know the source of the different kinds and grades of leather, and either (a) be able to sole and heel a pair of boots, sewn or nailed, and make general repairs to boots and shoes, or, (b) be able to dress a saddle, repair traces, stirrup leathers and harness, and know the various parts of harness, or (c) design and tool an article in leather such as a mat, table cover, magazine cover, blotter, desk pad, belt, etc.



## Boy Scouts

### Marksman. (To be passed annually.)

To obtain the Marksman proficiency badge a Scout must qualify as follows:—



1. On a full range must score, with 20 rounds, 60 points out of a possible 100 points at either 200 yards, 500 yards or 600 yards (National Rifle Association Targets—Bull or Figure); or,
2. On a miniature range with 20 rounds, 65 points out of a possible 100 points at either 200 yards, 500 yards or 600 yards (National Rifle Association Targets reduced to 15 yards, 20 yards, or 25 yards; ) or,
3. With 10 rounds 65 points out of a possible 100 points at either a 15-yard, 20-yards, or 25-yards (N. R. A. or S. M. R. C. decimal target).

If qualifying on a miniature range the rifle used may be any single loading rifle taking ammunition not larger than .22 cal.

If a miniature is used, the position of the centre of the shot hole will determine the value of the shot.

In all cases "any" position is allowed.

Slings may be used.

4. Must have a knowledge of rifles and the cleaning of arms.

### Master-At-Arms

To obtain the Master-at-Arms proficiency badge a Scout must:—

1. Attain proficiency in two out of the following subjects:—

Single-Stick, Quarter-Staff, Boxing, Ju-jitsu, and Wrestling.



### Mason

To obtain the Mason proficiency badge a Scout must:—



1. Lay at least four courses of a straight wall of stone or brick and build a corner on a suitable masonry foundation.

2. Understand the making and use of cement and lime mortar and concrete.

3. Understand the use of a plumb-line and trowel.



**Metal Worker**

To obtain the Metal Worker proficiency badge a Scout must:—



1. Make and repair some of the simpler tin-ware articles in common use.
2. Chip and file small surfaces of cast iron.
3. Forge wrought iron to simple forms, viz.: S-hook, ring, staple, hold-fast, or pipe-hook.
4. Forge and temper a drill or chipping chisel.
5. Explain the names, uses and construction of metal work tools and apparatus in common use, and give reasons for shapes, cutting-angles, etc., of tools.
6. Explain the composition and properties of solders, fluxes and metals.
7. Be familiar with ordinary workshop practices and processes.

**Miner**

To obtain the Miner proficiency badge a Scout must:—

1. Have a general knowledge of some one particular branch of the mining industry, such as coal, iron, or other mineral, with the special dangers involved, and the safeguards against them.
2. Have worked below the surface for not less than six months.



**Missioner**

To obtain the Missioner proficiency badge a Scout must:—



1. Have a general elementary knowledge of sick-nursing, invalid cookery, sick room attendance, bed-making, and ventilation.
2. Have ability to help aged and infirm.
3. Have general knowledge of health and sanitation.

**Musician**

To obtain the Musician proficiency badge a Scout must:—

Play correctly some recognized instrument and read simple music written for such instrument; the recognized instruments being piano, organ, and all instruments employed in military or orchestral bands excluding bugles, trumpets and drums and instruments of percussion, or toy instruments.



## Naturalist

To obtain the Naturalist proficiency badge a Scout must:—



1. Make a collection of the leaves of thirty different trees, or of sixty different species of wild flowers, weeds, ferns and grasses, typical of the different localities, dried and mounted in a book and correctly named; or alternatively,
2. Name from a museum or from unnamed colour plates and give particulars of the habits, calls, trails, etc., of sixty mammals or birds and of the habits and lives of reptiles, insects, etc., or alternatively,
3. Describe and identify twelve species of fish and give an account of the type of water they inhabit.

**Pathfinder. (To be passed annually.)**

To obtain the Pathfinder proficiency badge a Scout must:—

1. Have an intimate knowledge of the locality round his troop headquarters including fire-alarm boxes, hydrants, fire and police stations, general hospitals, post and telegraph offices and telephone exchanges, railway stations, street car routes and six doctors, three nearest home and three nearest troop headquarters, schools and churches, factories, livery stables, motor garages, the principal food and provision merchants, cab and taxi stands and cycle repairers; in country districts must have a knowledge of farms with their approximate acreage and nature, also the location of blacksmiths and garages.
2. Make and present a large scale map showing as much as possible of the information required above.

(Note:—The area over which the above intimate knowledge will be required has a two-mile radius from the troop headquarters in country or towns up to 5,000 inhabitants; a radius of one mile in communities between 5,000 and 100,000; and of half a mile in communities over 100,000. The Commissioner may at his discretion vary the area to exclude undesirable neighbourhoods, parks or other open spaces, and include an equivalent area).



3. Have a general knowledge of the district so as to be able to guide strangers by day or night within a five mile radius, and give them general directions how to get to the principal suburbs, districts or towns within a 25-mile radius.

4. Have some knowledge of the history of the community and places of historical interest.

5. In Prairie Provinces, have knowledge of district elevators.

**Photographer**

To obtain the Photographer proficiency badge a Scout must:



1. Take, develop and print twelve separate subjects, viz., three interiors, three portraits, three landscapes and three instantaneous "action" photos.

2. Have a knowledge of the action of developers.

**Pilot**

To obtain the Pilot proficiency badge a Scout must:—

1. Be able to sail a boat, tack, wear, reef, make and shorten sail.

2. Have a full knowledge of the Admiralty chart for the nearest port and the coast on each side of it.

3. Know the buoys, beacons, landmarks and leading marks into and out of the harbour and be able to heave the lead.

4. Know the rule of the road at sea, the lights carried by all classes of vessels, the danger signals, storm signals and the mercantile code of signals.

5. Be able to fix positions by means of cross bearings, both from land and sea.

6. Keep a log for at least a month, registering the wind, weather, barometer and thermometer, as generally carried out at sea.



**Pioneer**

To obtain the Pioneer proficiency badge a Scout must show extra efficiency in the following:—



1. Fell a 6-inch tree or scaffolding pole neatly and quickly.

2. Tie eight kinds of knots quickly in the dark or blindfolded.

3. Lash spars properly together for scaffolding.

4. Build a model bridge or derrick.

## Boy Scouts

5. Make a camp kitchen.
6. Build a hut of boughs, sods, grasses or similar material, or alternatively,
7. Weave a satisfactory mattress of straw, hay or boughs on a camp loom.

### Piper



To obtain the Piper proficiency badge a Scout must be able to play a March, Strathspey and Reel.

### Plumber

- To obtain the Plumber proficiency badge a Scout must:—
1. Be able to use a soldering iron to repair a copper ball or similar job, to be able to repair leaky taps and stopcocks and ball cocks.
  2. Know how to hammer up a burst pipe and know the address of his local turnkey.
  3. Understand the ordinary hot and cold water system of a house; how to thaw out a frozen pipe and to protect pipes from frost.
  4. Understand the use of stock and dies and be able to cut a thread upon 1-inch pipe.



### Poultry Farmer

To obtain the Poultry Farmer proficiency badge a Scout must:—



1. Have a knowledge gained by *practise* of incubators, foster-mothers, sanitary fowl houses and coops and runs.
2. Have a knowledge of rearing, feeding, killing, and dressing birds for market.
3. Be able to pack birds and eggs for market.

### Printer

To obtain the Printer proficiency badge a Scout must:—

1. Print a handbill set up by himself, and must know the names of different types and paper sizes.
2. Be able to compose by hand.
3. Understand the use of hand or power printing machines.



## Prospector

To obtain the Prospector proficiency badge a Scout must:—



1. Show that he has a general acquaintance with the origin of rocks.
2. Show that he has a general knowledge of the principal rock structure-stratification; dip, including synclines and anticlines, dike, stock, and laccolith.
3. Name one or more of the principal ores of copper, iron, lead, zinc, nickel.
4. Identify 7 out of 12 common minerals submitted and give their uses, if any.
5. Identify 3 out of 5 common rocks submitted and give their uses, if any.
6. Give a short account of the geological formation of his own district, or collect from his own district, if fossils occur in it, fossils representing not less than four of the following groups or classes:—corals, graptolites, crinoids, brachiopods, pelecypods, gasteropods, cephalopods; each specimen to be accompanied by a label showing the group to which it belongs and the locality where it was found.

## Public Health Man

To obtain the Public Health Man proficiency badge a Scout must:—

1. Know the dangers of the more ordinary contagious and infectious diseases, including mumps, measles, chicken-pox, scarlet fever, diphtheria, tuberculosis, typhoid fever and venereal diseases; know how they are transmitted and the best methods to prevent them spreading.
2. Give a list of infectious diseases that must be notified, and state also the period of incubation of each disease and the precautions that must be taken to prevent them spreading.
3. Describe one or more methods of disinfecting a house and a room and its contents after a contagious disease.
4. Describe the method used in his community and in camp in disposing of garbage.
5. Draw a diagram showing how the house-fly carries disease.



## Boy Scouts

### Rescuer

To obtain the Rescuer proficiency badge a Scout, attired in shirt and trousers, must:—

1. Perform in the water four methods of rescue and three of release from the clutch of a drowning person; the drowning person, about the same size as the rescuer, to be carried at least ten yards in demonstrating each of the rescue methods.



2. Dive from the surface to the depth of at least five feet and bring up a stone, brick or iron weighted object of not less than five pounds.

3. Demonstrate the Schæfer method of resuscitation and the promotion of warmth and circulation.

4. Swim 50 yards and undress before touching ground.

### Signaller. (To be passed annually.)

To obtain the Signaller proficiency badge a Scout must:—

1. Pass tests in both sending and receiving in Semaphore and Morse signalling by flag; the minimum rate to be thirty-six letters per minute for Semaphore and twenty-four letters for Morse.

2. Send and receive signals by sound.

3. Know the proper words of command and signals by bugle, whistle, hand and staff.



### Stalker

To obtain the Stalker proficiency badge a Scout must take a series of twenty photographs of wild animals or birds from life, and develop and print them himself, and must be able to give particulars of their lives, habits and markings.



### Starman

To obtain the Starman proficiency badge a Scout must:—

1. Have a knowledge of the nature and movements of the stars.

2. Be able to point out and name six principal constellations of his own choice.

3. Find the north by means of other stars than the Pole Star in case of that star being obscured by clouds, etc.



4. Must have a general knowledge of the relative positions and movements of the earth, sun and moon, and of tides, eclipses, meteors, comets, sun spots and planets.

### Stockman

To obtain the Stockman proficiency badge a Scout must:—



1. Have a practical knowledge of the care of range stock.
2. Know the location of pastures and water for stock in his district.
3. Have a general knowledge of branding, brand records and other methods of identification.
4. Know the meaning and value of pedigrees and the principles of selection through choice of pure bred sires of proper conformation.
5. Be able to herd while mounted and demonstrate at least one method of lassoing and throwing live stock.
6. Know the methods employed in sheltering, feeding and watering stock during the winter and be familiar with the other seasonal work of the stockman.

### Swimmer

To obtain the Swimmer proficiency badge a Scout must:—

1. Swim 50 yards with clothes on (shirt, trousers and socks as a minimum).
2. Be able to undress in the water.
3. Swim (without clothes) 100 yards, using the breast stroke, and fifty yards on the back with the hands either clasped on the arms or the arms folded in front of the body.
4. Be able to dive when swimming in six feet of water and bring up some specified object from the bottom of at least five pounds in weight.



### Surveyor

To obtain the Surveyor proficiency badge a Scout must:—



1. Map correctly from the country itself the main features of half a mile of road, with 440 yards each side to a scale of two feet to the mile, and afterward draw the same map from memory.
2. Understand the use of the plane table.
3. Lay out the building plan on the ground for a house or barn.

4. Measure the width of a river, also the height of a tree, church steeple or telegraph pole.
5. Know at least three ways of finding the North without the use of surveying instruments.

#### Tailor

To obtain the Tailor proficiency badge a Scout must:—



1. Cut out and sew, either by hand or machine, a Scout's shirt and shorts to fit himself.
2. Insert a patch; and darn a small hole, in a neat workmanlike manner, in either of the same two garments.

#### Telegraphist

To obtain the Telegraphist proficiency badge a Scout must:—

1. Understand simple electric circuits.
2. Be able to send out and receive by Morse key and sounder a message at the rate of 30 letters a minute.
3. Be able to explain construction of, and do simple repairs, to an instrument.
4. Understand the elementary principles of a wireless telegraph installation.



#### Textile Worker

To obtain the Textile Worker proficiency badge a Scout must:—



1. Have a general knowledge of the names and natures of the raw materials used in weaving and spinning, where they are grown and obtained, and the names and natures of the finished products made from the raw materials.
2. Understand and describe the different processes by which the raw material becomes finished product, and must have a detailed practical knowledge of at least one particular branch of textile industry, such as spinning, weaving or finishing.

#### Watchman

To obtain the Watchman proficiency badge a Scout must:—

1. Know every rock and shoal within the five fathom line on a four-mile stretch of coast near his headquarters.
2. Know the rise and fall of tides, both spring and neap, and how to ascertain the times of high and low water.





3. Know when the moon rises or sets and its quarter.
4. Know the set of the currents at all times of tide.
5. Know all danger spots to bathers and visitors, such as quicksands and places where they are liable to be cut off by the tide, and what to do if they get into difficulties.
6. Know the best landing places for boats and where they can find shelter in bad weather.
7. Know the marks of fishing boats which frequent the coast and the national flags of ships which pass.
8. Know the light-houses which can be seen from his strip of coast and describe the lights they exhibit.
9. Know the beacons, storm signals, coast-guard stations, steam tugs, lifeboats and rocket apparatus, the nearest telegraph offices, telephones and addresses of doctors, available from each point and the mercantile code of signals.

Woodman (See Forestry)

### OTHER BADGES, AWARDS AND DECORATIONS

#### Sec. 42.—Badges Allowed

No badge, cord, chevron or other decoration may be worn on Scout uniform except:—

- Those described in these rules;
- King's medals, war medals, decorations and orders;
- St. John and St. Andrew's Ambulance medals, Royal Humane Society's medals, British Red Cross medal;
- "Casualty stripe" of wounded officers and men.
- War service badges and chevrons issued by the Canadian Government.

Officers possessing war medals and decorations may wear them on inspection and ceremonial parades.

#### Sec. 43.—Scout Service Badges

Badges denoting service in the Association are authorized as follows:—

Service badges for use on uniform:

**SERVICE STARS.**—White metal, six point star, for every year up to and including the third year.

**BRONZE BAR.**— $\frac{3}{8}$ -in. x  $1\frac{1}{2}$ -in. replacing the three service stars at the end of the fourth year's service. For the fifth

year's service one star is added to the left of the bronze bar, for the sixth year, one to the right.

**SILVER BAR.**— $\frac{3}{8}$ -in. x  $1\frac{1}{2}$ -in. replacing the bronze bar and stars on completion of seven years' service. For the eighth year's service one star is added to the right, and for the ninth year, one to the left of the silver bar.



**GOLD BAR.**— $\frac{3}{8}$ -in. x  $1\frac{1}{2}$ -in., replacing the silver bar on completion of the tenth year.

Bars to be plain, with miniature First Class badge superimposed in centre; stars and bars to be worn above left pocket of shirt or coat. These badges may be worn by all ranks. Applicants for service awards are entitled to count only their service as Scouts or officers while actively connected with the Movement.

Service badges for Commissioners and Scoutmasters are authorized as follows:—

**FOUR YEARS.**—Bronze miniature of First Class badge.

**SEVEN YEARS.**—Silver miniature of First Class badge.

**TEN YEARS.**—Gold miniature of First Class badge.

Scoutmasters who have previously served as Assistant Scoutmasters may count their service as such, when applying for service badges as above.

#### Sec. 44.—Supporter's Badge

Members of District Councils and Local Associations and other supporters of the Movement may wear a miniature gold or enamel pin badge.

Its possession does not, however, of itself constitute membership in the Boy Scouts Association.



#### Sec. 45.—Old Scout's Badge



Any Scout who has had three years' active service in any rank or ranks and has obtained a legitimate discharge from his Local Association may wear a fleur-de-lis surrounded by a circle, as a pendant or buttonhole badge.

**Sec. 46.—Thanks Badge**

The Thanks Badge is made up of a Swastika with a fleur-de-lis superimposed. It is the privilege of any Scout, of whatever rank, to present this badge of thanks to anyone who does a Scout a good turn, provided he obtains the approval of the Local Association, or in the case of members of the Canadian General Council or Provincial Councils the approval of the Dominion Commissioner or Provincial Commissioner respectively. It entitles the wearer to make use of the services of any Scout at any time, but does not constitute membership.



**Sec. 47.—“Cornwell” Scout**

To obtain the “Cornwell” Scout Badge a Scout must:—



1. Pass a test in physical courage; such as for example, in high diving, boxing, or gymnastics;

Or, as alternatives:

(a) Hold an award for bravery for having saved life under exceptioned circumstances.

(b) Have undergone great suffering in a heroic manner.

2. Be a First Class Scout.

3. Obtain a really good report from his Scoutmaster and some independent responsible person for:

(a) Industry and effort.

(b) Obedience and discipline.

(c) Trustworthiness.

(d) Punctuality in attendance.

(e) Smartness of bearing, kit and appearance.

4. Have passed for a Missioner’s Badge.

5. Have passed for two of the following badges:—

Boatman, Pilot, Sea Fisherman, Signaller, Star-man. Swimmer or Rescuer, Watchman; or

must have the Public Service Coast-watching Badge.

Applications to be made on forms obtainable from Provincial headquarters.

**Sec. 48.—Awards for Gallantry and Good Services**

All Scout Officers, Scouts, (and *Cubs*), are eligible for the following decorations.

The recommendations must be made by a resolution of the Local Association and be supported by the District Commissioner.

The Secretary of the Local Association must send in a full account of the case, with the evidence of eye-witnesses where possible to Provincial headquarters. All applications will be judged on their merits by the Chief Scout and Committee of the Canadian General Council. Applications are to be made on a form obtainable from Provincial headquarters.

A.—BRONZE CROSS. *Red Ribbon.*

Highest possible award for gallantry. It can only be won where the claimant has shown special heroism or has faced extraordinary risks in saving life.

B.—SILVER CROSS. *Blue Ribbon.*

For gallantry with considerable risk.

C.—GILT CROSS. *Ribbon—Blue and Red, horizontal.*

For those who do their duty exceptionally well in cases of emergency, though without risk to themselves.



The above are worn on the right breast.

#### For Good Services

**MEDAL OF MERIT.**—The Medal of Merit is awarded to those who perform specially good work on behalf of the Boy Scout Movement. Full records must accompany the claim.

The medal is worn on the right breast.

**CERTIFICATES AND LETTERS OF COMMENDATION** are granted in other meritorious cases.

All Scout Officers and Scouts are eligible for the above awards.



**SILVER WOLF.**—The Silver Wolf is only awarded to King's Scouts or King's Sea Scouts of two years' Scout service at least, who have gained twelve proficiency badges, and also performed some special piece of Scout work (such as the saving of life under exceptional circumstances, or the performance of some extraordinary or repeated acts of bravery, endurance or self-sacrifice).

The standard demanded is a very high one.

The recommendation must be made by a resolution of the Local Association and supported by the District Commissioner. Application is to be made on a form obtainable from Provincial Headquarters.

The Honorary Silver Wolf is granted to any rank at the discretion of the Chief Scout for exceptionally valuable work on behalf of the Movement.

The "Silver Wolf" is worn as an "order" round the neck on a green and yellow ribbon.

**Sec. 40.—War Service Badges**

The following War Service Badges have been authorized:—

A. A badge in the form illustrated herewith embroidered in yellow on red for Scouts, (Red on yellow for Cubs)



which is granted on the recommendation of a Scoutmaster (or Cubmaster), approved by the Commissioner, to all Scouts, Scout officers, (Wolf Cubs, and Cub officers) who have performed or shall perform before the end of the war at least eighty-four hours' special voluntary service for the naval, military, police and other public authorities and private societies.

The services must be rendered as a Scout, Scout officer, (Wolf Cub or Wolf Cub officer) and must be unpaid. Allowances in lieu of rations and travelling expenses are not to be considered payment. Military service and service as a special constable does not qualify. Scouts are not entitled to more than one of these badges. Presidents of Local Associations and Commissioners should, therefore, be careful not to endorse claims for those who have already received them.



B. A badge in the form illustrated herewith embroidered in yellow on red for Scouts, (red on yellow for Cubs) is granted on the recommendation of a Scoutmaster (or Cubmaster) approved by the Commissioner, to all Scouts, Scout officers, (Wolf Cubs and Cub officers) who have performed or shall perform before the end of the war at least 100 days' special voluntary service,

no day of less than two hours' service to be recognized. A smaller number of hours' service daily for a longer period or a

greater number of hours for a shorter period do not qualify. The service must be rendered as a Scout, Scout Officer, (*Cub or Cub Officer*). Military service or service as a special constable does not qualify. On the completion of two hundred days' service (including the first one hundred in the first two



War Service Troop Roll.

hundred days), the "B" badge previously held may be exchanged for one with a gold ring for each two hundred days. Applications for exchange are to be made on a form stating particulars of further service and the old badge is to be attached.

"C"—THE CANADIAN WAR SERVICE TROOP ROLL is also granted by the Canadian General Council to any troop in

Canada upon five War Service Badges being earned by members thereof. This roll is so designed as to show the names of those earning either of the War Service Badges. Applications will not be necessary for this award but care must be taken to see that applications for badges under sections A and B are properly made out and approved by District and Provincial Commissioners. This troop award will be based on award of badges under Sections A and B and will be forwarded through the Provincial offices, where a complete record is kept of such services.

### MISCELLANEOUS

#### Sec. 50.—Bands

Scout bands must not play when passing churches, hospitals, or any house where illness is known to be. No bands are to play after 9 p.m. in the streets, and bugle practise must not be carried out in open places within 600 yards of houses.

#### Sec. 51.—Begging

Scouts are not allowed to solicit money either for their troop funds or any other purpose. It is bad for the boy and lends itself to fraud by outsiders.

#### Sec. 52.—Boating and Bathing

No Scout shall take part in any boat training until he can swim fifty yards.

Bathing will only be permitted *under strict supervision* to prevent non-swimmers getting into dangerous water.

A picket of two good swimmers should be on duty (undressed) with great coats on, in a boat or on shore as the circumstances may demand, ready to help any boy in distress. The picket itself may not bathe until the others have left the water.

#### Sec. 53.—Camps

Camp raiding strictly prohibited.

When any troops are camping outside its own district, at least one week's notice must be given by the officer in charge to the Commissioner of the Province or District in which the camp is intended to be held, for his information.

All districts, Associations or troops holding camps should notify the Provincial Council of the date and place so that a visit may be made, if possible.

**Sec. 54.—Census Returns**

An annual census of the Boy Scouts of Canada is taken on June 30th in each year. Simple forms of return must be forwarded by the Provincial Councils to the various districts and Local Associations for this purpose not later than June 15th, and must be returned to the Provincial headquarters on or before July 15th for transmittal to the Canadian General Council.

**Sec. 55.—Church Parades**

Combined church parades of troops of different denominations are not allowed without special permission from the Commissioner, and under no circumstances should Scoutmasters insist upon Scouts attending places of worship other than those of their own denomination.

**Sec. 56.—Competitions**

The greatest care should be used in the promotion of competitions as there is a danger that they may otherwise interfere with the more legitimate activities of the Movement, and with the objects for which Scouting was primarily instituted. The Boy Scout training is co-operative rather than competitive. Competition usually involves winning by one and losing by another; in Scouting, however, there are no losers. The Scout badge is an evidence rather of a standard attained and no matter how often a boy fails it is still open for his final achievement. The element of competition should be used sparingly, and care exercised to see that the winner does not become such by natural ability, rather than through self developed accomplishments.

The only general competition among Scouts in Canada is one for a challenge flag (Union Jack) donated by His Majesty King George V. for presentation to the troop (consisting of not less than 24 lads) in Canada, which has the largest number of King's Scouts under nineteen years of age.

**Sec. 57.—Correspondence**

It is desired that all correspondence should be reduced as far as possible. Scoutmasters should be discouraged from addressing correspondence to Provincial headquarters. They should apply for all information or make applications through their Local Secretaries who again should only correspond with the Provincial office directly for badges, warrants, or awards—the two latter cases requiring counter-signature by the District Commissioner.



## Sec. 58.—Provincial Emblems

Provincial emblems and troop emblems are authorized on condition that these are not to be worn until they have in each individual case received the approval of Provincial Headquarters. They are to be worn either below the Second Class badge, or on the shoulder, or on the breast, at the discretion of the Commissioners.

## Sec. 59.—The Scout Flag

The flag of the Boy Scouts Association is dark green in colour and bears in the centre a gold fleur-de-lis and scroll, the latter containing the motto "Be Prepared." Sometimes the troop name and number in gold are inscribed on the green ground. The Scout flag is used with the Union Jack on all ceremonial occasions and usually also on parade. Where the two flags are flown on one pole the national colours are given the place of honour at the top.

## Sec. 60.—Girl Guides

The Boy Scouts Association is in sympathy with the objects of the Girl Guides, but would remind all District Commissioners and Scoutmasters that the Girl Guides are an entirely separate organization, under separate management, and that it is most undesirable that Boy Scouts and Girl Guides should be trained together. Commissioners are asked to see that the rule prohibiting these joint trainings is strictly enforced.

## Sec. 61.—Mourning

Official mourning worn for 30 days by Scouts in uniform is a 1-in. crepe band which is worn round bottom of the crown of the hat; a 3-in. crepe band is worn by Scoutmasters on the left arm above the elbow.

In the case of a band the drums should be draped and muffled. A large crepe bow should be tied to the top of the flag, if carried, when the troop is in mourning.

For details of resting on staves at funerals see page 575.

## Sec. 62.—Registration

Forms of registration are issued from Provincial Headquarters for completion respectively by Local Association Secretaries and Scoutmasters.

The register of individual Scouts need be kept only by the Scoutmaster and Local Association Secretary.

## Boy Scouts

### Sec. 62.—Changes

Provincial headquarters should be immediately informed of any change of Local Association Secretaries and other officers and their new addresses given.

#### Scouts' Salute and Secret Sign

The secret sign of the Scout is the three fingers held up in the manner shown in the accompanying illustration, like the three points of the Scouts' badge, which reminds him of his three promises, viz.: (1) to do his duty to God and the King, (2) to help others, (3) to obey the Scout Law.



Scouts' Secret Sign



Half Salute

When a Scout meets another for the first time in the day, whether it be a comrade or a stranger, he salutes with the secret sign in the half salute in the manner shown in the illustration herewith.



Full Salute

A Scout always salutes an officer, that is a Commissioner, Scoutmaster or Patrol Leader, or any commissioned officer in His Majesty's Forces, Army and Navy, with a full salute, as shown in the illustration

herewith. The full salute is also given at the hoisting of the Union Jack, also to the colours of a regiment, to any funeral and at the playing of the National Anthem.

A Scout who has a Silver Wolf decoration is entitled to make the sign with the first finger and thumb opened out, the remaining fingers clenched, thumb upwards as shown in the illustration herewith. Hand salutes are used only when Scouts are not carrying staves. Officers salute

and Scouts salute only when wearing hats. Officers salute with the right hand only.

If a stranger makes the Scout sign to you, you should



acknowledge it at once by making the sign back to him. If he then shows his Scout badge or proves that he is a Scout he must be treated as a brother Scout and helped in any way.

In shaking hands with one another Scouts use the left hand.

There are two salutes with the staff, one of which is used when on the march, the other when standing at the alert, as shown in the illustrations herewith.



Salute when  
Marching



Salute at the  
Alert

**Sec. 65.—Shooting**

Scoutmasters must not allow their troops to practise rifle shooting or to shoot matches, except on an officially approved range, and no shooting must ever take place except under the superintendence of a competent officer who will be responsible that the range rules are strictly adhered to.

**Sec. 66.—Theatres**

Boy Scouts in uniform must not appear on the stages of theatres or music halls in public performances, other than their own.

**Sec. 67.—Warrants**

All officers' warrants of appointment in the Boy Scouts Association in Canada bear the signature of the Chief Scout for Canada. Warrants remain the property of the Boy Scouts Association and must be returned to the Provincial Commissioner on demand, without his being called upon to state any reason.

Warrants of appointment are granted to all executive officers, viz.: Dominion Commissioner, Provincial Commissioners, Assistant Provincial Commissioners, District Commissioners, District Scoutmasters, Scoutmasters, Lady Scoutmasters, Assistant Scoutmasters and Assistant Lady Scoutmasters; also to the following officers holding honorary rank, viz.: Honorary Dominion Secretary, Honorary Treasurer, Presidents of Provincial Councils, Presidents of Local Associations, Local Association Secretaries, Honorary Scoutmasters, Chaplains, Surgeons, and Instructors.

**Sec. 68.—Wolf Cubs**

Further rules governing the conduct of the Wolf Cubs branch of the Associations work will be found in the Wolf Cubs Handbook. (See p. 13.)

**Sec. 69.—Boy Scout Badges, etc., Protected by Act of Parliament**

The badges, as well as all emblems, decorations, descriptive or designating marks and titles of the Boy Scouts Associations are protected by Act of Parliament of Canada in the terms following:—

## CHAPTER 73—7-8 GEORGE V.

“An Act to amend an Act to incorporate the Canadian General Council of the Boy Scouts Association.

“Whereas the Canadian General Council of the Boy Scouts Association has by its petition prayed that it be enacted as hereinafter set forth, and it is expedient to grant the prayer of the said petition: Therefore His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

“1. Chapter one hundred and thirty of the statutes of 1914, an Act to incorporate the Canadian General Council of the Boy Scouts Association, is amended by adding thereto the following section:

“10. The Corporation shall have the sole and exclusive right to have and to use all emblems, badges and decorations, descriptive or designating marks and titles, now or heretofore used by the Boy Scouts Association, and also the title “Boy Scouts,” and shall also have the sole and exclusive right to have and to use any emblem, badge, decoration, descriptive or designating marks and titles; hereafter adopted by the Corporation for carrying out its purposes, provided that a statement and description of such emblem, badge, decoration, descriptive or designating mark, words or phrases is filed with and approved by the Minister of Agriculture or other Minister administering the Trade Mark and Design Act.”

## CHAPTER II

### WOODCRAFT

#### LIFE IN THE OPEN

In its broadest sense the term woodcraft has been applied to all life in the open. Naturally the woodcraft of Eastern Canada, a wooded country, differs in many respects from that of the Great Plains, whilst very different again are the out-of-doors conditions of life that exist in the far north and in the mountainous regions of British Columbia.

Canadian woodcraft, it will thus be seen, is a very broad subject; much broader, indeed, than one could attempt fully to cover in a single chapter of the present Handbook. The most we can hope to be able to accomplish is to interest our members in studying this subject for themselves and perhaps to offer a few suggestions besides, which may assist them in doing so.

The truly wonderful system of waterways stretching from the Atlantic coast and Hudson Bay to the foothills of the Rocky Mountains and northward to the Arctic coast, furnished the principal routes of summer travel through this vast territory. It was, too, by following the river courses that the early explorers first threaded their way through the mountain fastnesses of British Columbia to the far Pacific coast a little over a century ago.

The birch-bark canoe has disappeared from the main waterways with the development of modern methods of water transport but is still used on many of the northern lakes and streams, being carried on the travellers' heads and shoulders when necessity compels, over portages of several miles distance.

Where water transport was impossible, much of the travel in early days was necessarily done on foot and many of our cross-country roads follow the routes of early trails. One of these extends from Winnipeg overland about one thousand miles distance to Edmonton, Portage Avenue, Winnipeg, being part of this early thoroughfare.

With the introduction of the horse into North America by the Spaniards, the Indian tribes of the Great Plains quickly

became expert horsemen and horsemanship has ever since been, and is still, a notable feature of the life in these parts.

For winter travel the native tribes of the north and west depended on dog teams and in the far north and north-west do so still. His Majesty's mails are carried down the Mackenzie River in winter by dog teams precisely as the Indians and traders made their way from point to point in these same regions a century ago. Under ordinary conditions of travel a dog team of four can make thirty miles a day with a load of three hundred pounds weight.

Indians and whites alike in the remote northwest travel, however, as light as possible and in many instances count even tents an unnecessary burden on mid-winter expeditions in which temperatures are often encountered of thirty, forty and

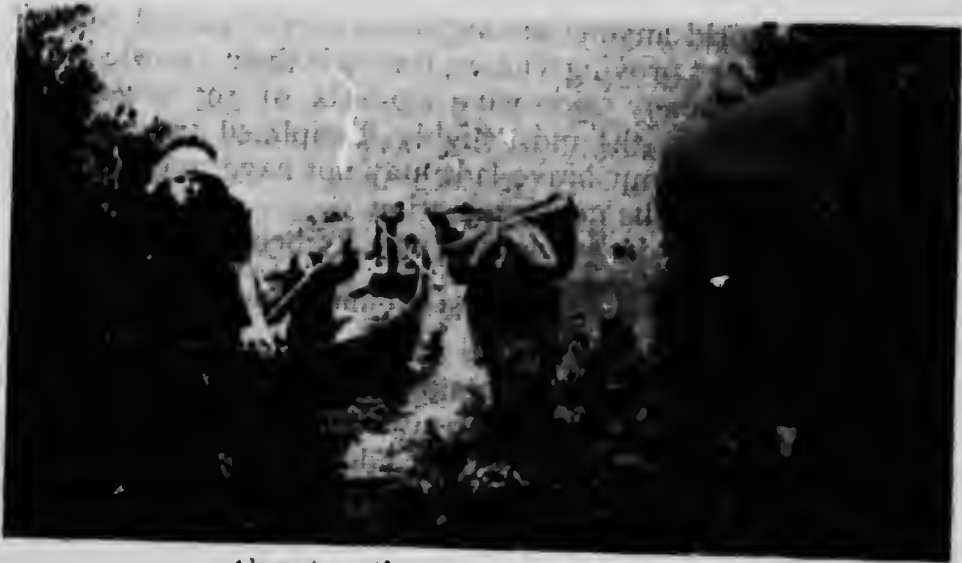


Dog team

fifty below zero. The snowfall is comparatively light in the north country east of the Rockies—not more than two or three feet—and all that travellers in the native style do at nightfall is to pick on as sheltered a spot as they can find, dig down to the ground with the aid of their snowshoes and build themselves a bed of boughs to lie on, sheltered from the wind by a couple of young spruce trees, felled for the purpose. The latter are laid at a convenient angle to one another whilst a fire is built across the open end of this simple shelter and kept going throughout the night. The dogs share the protection of the wind break, huddled on the bed of boughs as close as they

can get to their masters and to the welcome glare of the camp-fire. Such is mid-winter life in the open in the Mackenzie River basin and eastward to Hudson Bay.

On the western slopes of the Rockies in Northern British Columbia and the Yukon, things are much the same, excepting that the heavy snowfall makes it impossible for travellers to do without tents. These were the rigorous conditions which faced the eighty thousand gold seekers—mostly inexperienced city men—who tried in vain to pack their way over the Yukon trail in the first great rush to the Klondike in the winter of 1897-98. No wonder only thirty-seven thousand ever got through.



Canadian Scouts making a portage

Very many Scout troops are, of course, made up of city boys to whom woodcraft may at first sight seem to be of little practical value. Yet it is only on first sight that this is so, for woodcraft in truth is the first of all sciences and invaluable as a training for resourceful, robust manhood. It was woodcraft, as Mr. Seton reminds us, that made man out of brutish material, and we are learning that consumption, the white man's plague, since he has become a house race, is vanquished by the sun and air, and many ills of the mind also are forgotten when the sufferer boldly takes to the life in tents. Needless to say, one doesn't have to journey to the far off Mackenzie River valley or the Yukon to do so, for every one of the nine prov-

inces still contains plenty of open country in which boys may range at will. In addition, the governments are wisely establishing forest and game reserves which will be of priceless value to generations to come when the rest of the public domain has passed into the hands of private ownership.

There can be no Scouting without a knowledge of woodcraft, and even though your acquaintance with nature may be but slight yet it will add greatly to your joy of living and to the strength of mind and body which all need to succeed in the battle of life.

While these lines are being written, an army of young Canadians, drawn from all classes and occupations, are serving their country in the trenches of Flanders—about the last thing in the world anyone among them ever dreamed of having to endure, yet proving victors through their knowledge of outdoor life in many successive contests of resourcefulness and endurance over the most highly disciplined troops of all Europe. Pray God our brave lads may not have to go through a like experience in the next generation.

At the same time let us do our part by being prepared.

#### **The Royal North-West Mounted Police**

Some of the best scouts in the world are found in the ranks of the Royal North-West Mounted Police. These splendid fellows have to be partly soldier and partly policeman and to serve at times as judge and jury besides. Sent out to distant frontier posts, the mounted policeman has to be able to look after himself either in the Arctic winter or in the blazing summer. He has to be a good horseman, and at the same time able to manage a canoe, or a dog-sleigh. Moreover, as he has to tackle rough customers in mining camps, to keep order among Indians, or to arrest horse thieves and other bad characters, he has to be plucky, strong and determined—equal in fact to three or four ordinary men—and intent on doing his duty, however difficult or dangerous, simply because it is his duty. But the Mounted Police have, in so very many cases, proved this, that every criminal knows it is useless to resist or to try to escape when the constable appears upon the scene; he feels he is a "gone coon."

The work of the Mounted Police has taken them far northward of the Arctic circle for the maintenance of law and order among the Eskimo natives and the whalers visiting the Arctic



coast, and the hardships of travel in these parts, especially during the winter, can better be imagined than described.

In the winter of 1910 a patrol of three policemen under command of Inspector F. J. Fitzgerald perished of cold and hunger in an attempt to make their way by dog team in midwinter from Fort Macpherson, at the mouth of the Mackenzie River, to Dawson City. The patrol lost their way through depending on a guide who did not know the route and were forced to turn back towards Fort Macpherson. Misfortune seemed to dog their way. They were hindered by open water, by fierce winds and blinding snows and by weather 60° below zero. The trail was heavy and they repeatedly were wet to the skin by going through the ice. After their small stock of provisions was exhausted they began killing the dogs to feed to the other dogs, but found that the canines would not eat the meat. The remainder of the little stock of dried fish was accordingly fed to the animals whilst Inspector Fitzgerald and his companions travelled about two hundred miles distance with nothing to subsist on but dog meat and tea. Their remains were found by a search party within thirty-five miles of Macpherson. The indomitable leader had kept up his diary to the very last and written his will with a bit of charred wood from the camp fire in the terms following:

"All money in despatch bag and bank, clothing, etc., I leave to my dearly beloved mother, Mrs. John Fitzgerald, Halifax. God bless all."

F. J. Fitzgerald,  
R.N.W.M.P.

So died a most courageous and devoted member of this splendid frontier force.

#### OBSERVATION

One of the most important things that a scout has to learn, whether he is a war scout, or a hunter or peace scout, is *to let nothing escape his attention*. He must notice small points and signs, and then make out the meaning of them; but it takes a good deal of practise before a tenderfoot can get into the habit of really noting everything and letting nothing escape his eye. It can be learned, however, just as well in a town as in the country, and good practise can be gained by city boys through observing closely all points of interest on the streets, the numbers of street cars and other conveyances.

A Scout must not only look to his front, but also to either side and behind him. He must have "eyes at the back of his head," as the saying is.

And in the same way he should notice any strange sound or any peculiar smell and think for himself what it may mean.

"SIGN" is the word used by Scouts to mean any little details, such as footprints, broken twigs, trampled grass, scraps of food, a drop of blood, a hair, and so on; anything that may help as clues in getting the information they are in search of. Unless you learn to notice "signs" you will have very little of "this and that" to put together, and so you will be no use as a Scout. It comes by practise.

Remember, a Scout always considers it a great disgrace if an outsider discovers a thing before he has seen it for himself, whether that thing is far away in the distance or close by under his feet.

If you go out with a really trained Scout you will see that his eyes are constantly moving, looking in every direction near and far, noticing everything that is going on, just from habit, not because he wants to show off how much he notices.

#### Details of People

In the streets of a strange town a Scout will notice his way by the principal buildings and side streets, and in any case, he will notice what shops he passes and what is in their windows; also what vehicles pass him and such details as whether the horses' harness and shoes are all right; and most especially what people he passes, what their faces are like, their dress, their boots and their way of walking.

Every Scout should know, as a matter of course, the nearest doctor's residence and drug store (in case of accidents), the nearest police station, hospital, fire alarm, telephone, ambulance station, etc.

When you are travelling by train or street car, always notice every little thing about your fellow-travellers; notice their faces, dress, way of talking, and so on, so that you could describe them each pretty accurately afterwards; and also try and make out from their appearance and behaviour what is their probable business, whether they are happy, or ill, or in want of help. But in doing this you must not let them see you are watching them, else it puts them on their guard.

It is said that you can tell a man's character from the way

he wears his hat. The way a man (or a woman) walks is often a good guide to his character—witness the fussy, swaggering little man paddling along with short steps and much arm-action; the nervous man's hurried, jerky stride; the slow slouch of the loafer and the smooth, quick, and silent step of the Scout.

It is an amusing practise, when you are in a railway carriage or street car with other people, to look only at their feet and guess, without looking any higher, what sort of people they are, old or young, well-to-do or poor, fat or thin, and so on, and then look up and see how near you have been to the truth.

It is surprising how much of the sole of the boot you can see when behind a person walking; it is equally surprising how much meaning you can read from that boot. It is said that to wear out soles and heels equally is to give evidence of business capacity and honesty; to wear your heels down on the outside that you are a man of imagination and love of adventure; but that heels worn down on the inside signify weakness and indecision of character, and that this last sign is more infallible in the case of men than in that of women.

Through knowing how to observe people, without showing that they were doing so, Boy Scouts have been helpful in discovering spies during the war.

#### Getting Lost

It often happens that when you are tramping along alone through the bush, or even in town, you become careless in noticing what direction you are following; that is, you frequently change it to get round a fallen tree, some rock, or other obstacle, and having passed it, you do not take up exactly the correct direction again. A man's inclination somehow is to keep edging to his right, and the consequence is that when you think you are going straight, you are really not doing so at all. Unless you watch the sun, or your compass, or your landmarks, you are very apt to find yourself going round in a big circle.

In such case a "tinderfoot," when he suddenly finds himself out of his bearings, lost in the hills or forest, at once loses his head and gets excited. He probably begins to run, when the right thing to do is to force himself to keep cool and give himself something useful to do—that is, to track his own trail back again; and he fails in this to start getting firewood for making signal fires to direct those who are looking for him.

In Chapter V on Signals and Signalling a complete list is given of the blazes and other signs used for marking trails. You should become familiar with these signs, so that when going out you will know how to mark your trail and will have no difficulty in following it on your return.

The main point is not to get lost in the first instance.

Every old Scout on first turning out in the morning notices which way the wind is blowing. When you start out for a walk or on patrol, you should notice which direction, by the compass, you start in, and also notice which direction the wind is blowing, as these may be a great help to you in keeping your direction, especially if you have not got a compass, or if the sun is not shining. Then you should notice all landmarks for finding your way: that is, in the country notice any hills or prominent towers, steeples, curious trees, rocks, gates, mounds, bridges, and so on; any points, in fact, by which you could find your way back again, or by which you could instruct another to go the same line which you have gone. If you notice your landmarks going out you can then find your way by them coming back. But you should take care occasionally to look back at them after passing them, so that you get to know their appearance for your return journey. The same holds good when you arrive in a new town by train. The moment you step out from the station notice where the sun is, or which way the smoke is blowing. Also notice any landmarks, such as prominent buildings, churches, factory chimneys, names of streets and shops, etc., so that when you have gone down numerous streets you can turn round and find your way back again to the station without any difficulty. It is wonderfully easy when you have practised it a little; yet many people get lost when they have turned a few corners in a town which they do not know.

The way to find which way the wind is blowing, if there is only very light air, is to throw up little bits of dry grass, or to hold up a handful of light dust and let it fall, or to suck your thumb and wet it all round and let the wind blow on it, and the cold side of it will then tell you which way the wind is blowing. When you are acting as Scout to find the way for a party you should move ahead of them and fix your whole attention on what you are doing, because you have to go by the very smallest signs, and if you get talking and thinking of other things you are very apt to miss them. Old scouts are

generally very silent people, from having got into this habit of fixing their attention on the work in hand.

### Night Scouting

Scouts must be able to find their way equally well by night or by day. In fact, military scouts in the army work mostly by night, in order to keep hidden, and lie up during the day. Unless they practise it frequently, fellows are very apt though to lose themselves by night, distances seem greater, and landmarks are hard to see. Also you are apt to make more noise than by day, in walking along, through treading accidentally on dry sticks, kicking stones, etc.

If you are watching for an enemy at night, you have to trust much more to your ears than to your eyes. You have to rely also on your nose, for a Scout who is well-practised at smelling out things, and who has not damaged his sense of smell by smoking, can often smell an enemy a good distance away. A Scout has to be able to notice small details just as much by night as by day, and this he has to do chiefly by listening but occasionally by feeling or smelling.

In the stillness of the night, sounds carry farther than by day. If you put your ear to the ground or place it against a stick, or especially against a drum, which is touching the ground, you will hear the shake of horses' hoofs or the thud of a man's footfall a long way off. Another way is to open a knife with a blade at each end, stick one blade into the ground and hold the other between your teeth and you will hear all the better. The human voice, even though talking low, carries to a great distance, and is not likely to be mistaken for any other sound.

When patrolling at night, Scouts keep closer together than by day, and in very dark places, such as woods, etc., they keep touch with one another by each catching hold of the end of the next Scout's staff. When working singly the Scout's staff is most useful for feeling the way in the dark, and pushing aside dry branches, etc. Scouts working apart from each other in the dark keep up communication by occasionally giving the call of their patrol-animal. An enemy would thus not be made suspicious.

Scouts have moreover to guide themselves very much by the stars at night.

**Deduction**

When a Scout has learned to notice "signs," he must then learn to "put this and that together," and so read a *meaning* from what he has seen. This is called "deduction." Here is an example of what is meant which was given in the "Forest and Stream."

It shows how the young Scout can read the meaning from "signs" when he has been trained to it.

A cavalry soldier had got lost and some of his comrades were hunting all over the country to find him, when they came across a native boy, and asked him if he had seen the lost man. He immediately said: "Do you mean a very tall soldier, riding a roan horse that was slightly lame?"

They said, "Yes; that was the man. Where did you see him?" The boy replied, "I have not seen him, but I know where he has gone."

Thereupon they arrested him, thinking that probably the man had been murdered and made away with, and that the boy had heard about it. Eventually he explained that he had seen tracks of the man which he could point out to them.

Finally he brought them to a place where the signs showed that the man had made a halt. The horse had rubbed itself against a tree, and had left some of its hairs sticking to the bark, which showed that it was a roan horse; its hoof marks showed that it was lame; that is, one foot was not so deeply indented on the ground and did not take so long a pace as the other feet. That the rider was a soldier was shown by the imprint of his boot, which was an army boot. Then they asked the boy, "How could you tell that he was a tall man?" and the boy pointed out to where the soldier had broken a branch from the tree, which would have been out of reach of a man of ordinary height.

Deduction is exactly like reading a book. A boy who has never been taught to read, and who sees you reading from a book, would ask, "How do you do it?" and you would point out to him that a number of small signs on a page are letters; these letters when grouped form words; and words form sentences; and sentences give information. Similarly, a trained Scout will see little signs and tracks, puts them together in his mind, and quickly reads a meaning from them such as an untrained man could never arrive at. From frequent practise he gets moreover to read the meaning at a glance, just as

you do a book, without the delay of spelling out each word, letter by letter.

Instruction in the art of observation and deduction is difficult to lay down in black and white. It must be taught by practise. One can only give a few instances and hints; the rest depends upon your own powers of imagination and local circumstances.

The importance, however, of the power of observation and deduction to the young citizen is great. Boys are proverbially quick in observation, but it dies out as they grow older, largely because first experiences catch their attention, which they fail to do on repetition.

Observation is, in fact, a habit to which a boy has to be trained. Deduction is the art of subsequently reasoning out and extracting the meaning from the points observed.

When once observation and deduction have been made habitual in the boy, a great step has been gained in the development of "character."

### TRACKING

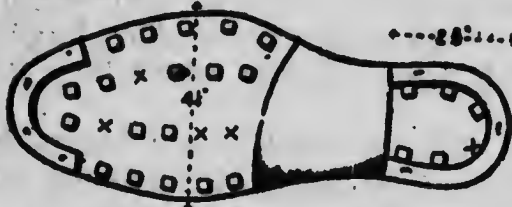
Tracking, or following up tracks, is called by different name in different countries. Thus, in South Africa, you would talk only of "sporing," that is, following up the "spoor"; in India, it would be following the "pugs," or "pugging"; in America, it is often referred to as "trailing." It is one of the principal ways by which Scouts gain information, and hunters find their game. To become a good tracker you must begin young, and practise it at all times when you are out walking, whether in town or country. If at first you constantly remind yourself to do it, you will soon find that you do it as a habit without having to remind yourself. And it is a very useful habit, and makes the dullest walk interesting.

Hunters, when they are looking about in a country to find game, first look for any tracks, old or new, to see if there are any animals in the country; then they study the newer marks to find out where the animals are hiding themselves and, after they have found a fresh track, they follow it up till they find the animal and kill it. Afterwards they often have to retrace their own tracks to find their way back to camp. War scouts do much the same as regards their enemies.

First of all you must be able to distinguish one man's foot-mark from that of another, by its size, shape and nails, etc. Similarly, you must be able to distinguish the prints of horses

and other animals. From a man's track, that is from the size of his foot and the length of his stride, you can tell, to a certain extent, his height. In taking notes of a track you should pick out a well-marked print, very carefully measure its length, length of heel, with widest point of tread, width at waist, width of heel, number of rows of nails, and number of nails in each row, heel and toe-plates or nails, shape of nail-heads, etc.

\* Nail missing



The way in which the diagram of a boot-track should be drawn

It is best to make a diagram of the foot-print in the manner shown in the illustration herewith. You should also measure very carefully the length of the man's stride from the toe of one foot to the heel of the other.



Well developed human foot



A foot always cramped by boots



A bare foot, never in boots

—By courtesy of E. T. Seton.

A Scout must learn to recognize at a glance at what pace the maker of the tracks was going, and so on. A man walking puts the whole flat of his foot on the ground, each foot a little under a yard from the other. In running, the toes are more deeply dug into the ground, a little dirt is kicked up, and the feet are more than a yard apart. Sometimes men walk backwards in order to deceive anyone who may be tracking, but a good Scout can generally tell this at once by the stride being shorter, the toes more turned in, and the heels being tightly impressed.

With animals, if they are moving fast, the toes are more deeply dug into the ground, and they kick up the dirt. Their paces also are longer than when going slowly.

You ought to be able to tell the pace at which a horse has been going directly you see the tracks. At a walk the horse makes two pair of hoof prints—the near (left) hind foot close



in front of the near fore foot mark, and the off (right) fore foot similarly just behind the print of the off hind foot. At a trot the track is similar, but the stride is longer. The hind feet are generally longer and narrower in shape than the fore feet.

Native trackers boast that not only can they tell a person's sex and age by their tracks, but also their characters. They say that people who turn out their toes much are generally "liars."

It was a trick with highwaymen of old, and with horse stealers more recently, to put their horses' shoes on wrong way round in order to deceive trackers who might try to follow them up; but a good tracker would not be taken in. Similarly, thieves often walk backwards for the same reason; but a clever tracker will very soon recognize the deception.

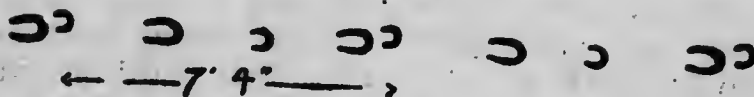
HORSE'S TRACKS



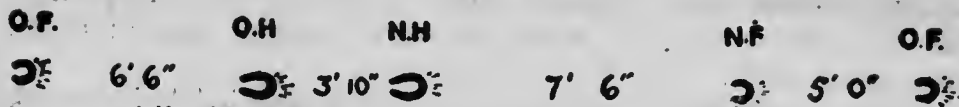
Walking.



Trotting.

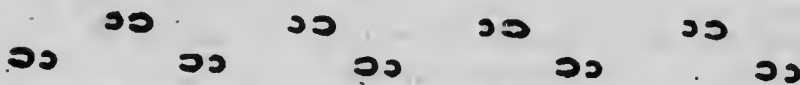


Canter.



*O.H. - Off Hind, etc.*

Galloping.



Lame Horse Walking : Which leg is he lame in?

*N.B.—The long feet are the hind feet.*

Wheel tracks should be studied till you can tell the difference between the track of a gun, a carriage, a farm waggon, a motor-car, or a bicycle, and the direction they were going in.

## Age of Tracks

In addition to learning to recognize the pace of tracks, you must get to know how old they are. This is a most important point, and requires a great deal of practise and experience before you can judge it really well.

Much depends on the state of the ground and weather, and its effects on the trail. If you follow one track, say on a dry, windy day, over varying ground, you will find that when it is on light, sandy soil, it will look old in a very short time, because any damp earth that it may kick up from under the surface will dry very rapidly to the same colour as the surface dust, and the sharp edges of the footmarks will soon be rounded off by the breeze playing over the dry dust in which they are formed. When it gets into damp ground, the same track will look much fresher, because the sun will have only partially dried up the upturned soil, and the wind will not, therefore, have bevelled off the sharp edges of the impression. If it gets into damp clay, under shade of trees, etc., where the sun does not get at it, a track, which may have looked a day old in the sand, will here look quite fresh.

Useful clues to the age of tracks will often be found through drops of rain having fallen on them since they were made (if you know at what time the rain fell), through dust or grass seeds having blown into them (if you noticed at what time the wind was blowing), through the crossing of other tracks over the original ones, or through the grass having been trodden down, and the extent to which it has since dried or withered. In following a horse, the length of time since it passed can also be judged by the freshness, or otherwise, of the droppings, due allowance being made for the effect of sun, rain, or birds, etc., upon them.

Having learned to distinguish the pace and age of a track you must next learn to follow it over all kinds of ground. This is an accomplishment that you can practise all your life, and you will still find yourself learning at the end of it. You will find yourself continually improving.

Then there is a great deal to learn from the ashes of fires—whether they are still warm or cold, scraps showing what kind of food the people were eating, and whether food was plentiful or scarce.

You must not only keep a sharp look out for Scout signs

made by your own Scouts, but also for those made by hostile Scouts. Tramps also have their private signs.

When getting on to a very fresh track of man or beast, an old scout will generally avoid following it closely, because the hunted creature will frequently look back to see if it is being followed. The tracker, therefore, makes a circle and comes back to where he would expect to find the track again. If he finds it, he makes another circle further ahead till he finds no track. Then he knows he is ahead of his game, so he gradually



Scout Stalking

circles nearer and nearer till he finds it, taking care, of course, not to get to windward of the animal when within scenting distance.

In tracking, where the trail is difficult to see, such as on hard ground, or in grass, note the direction of the last footprint that you can see, then look on in the same direction, but well ahead of you, say twenty or thirty yards, and in grass you will generally see the blades bent or trodden. On hard ground there will possibly be stones displaced or scratched, and so on; small signs which, seen in a line one behind the other, give a kind of track that otherwise would not be noticed. The great thing

is to look for a difficult track *against* the sun, so that the slightest dent in the ground throws a shadow.

If you lose sight of the track you must make a "cast" to find it again. To do this put your handkerchief, staff, or other mark at the last footmark that you noticed, then work round it in a wide circle say, thirty, fifty or a hundred yards away from it as a centre, choosing the most favourable ground—soft ground if possible—to find signs of the outward track. If you are with a patrol it is generally best for the patrol to halt while one or perhaps two Scouts make the cast. If everybody starts trying to find the trail they very soon defeat their object by treading it out or confusing it with their own footmarks. Too many cooks, as the saying is, are apt to spoil the broth.

#### Tracking Practises

For practise in tracking the Scoutmaster should make his Scouts prepare a well-rolled or flattened piece of ground, about ten or fifteen yards square, and make one boy walk across it, then run, and then bicycle across it. Part of the ground should be wet as if by rain, the other part dry.

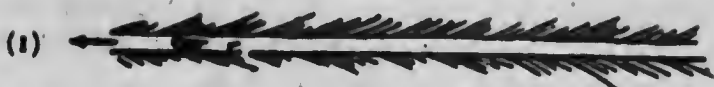
He can then explain the difference in the tracks, so that Scouts can tell at once from any tracks they may see afterwards whether a person was walking or running.

If possible, a day later make fresh tracks alongside the old ones and have the Scouts notice the difference in appearance, so as to learn to judge the age of tracks. Then make tracks of various kinds overrunning each other, such as a cyclist meeting a boy on foot, each going over the other's tracks, and let the Scouts read the meaning.

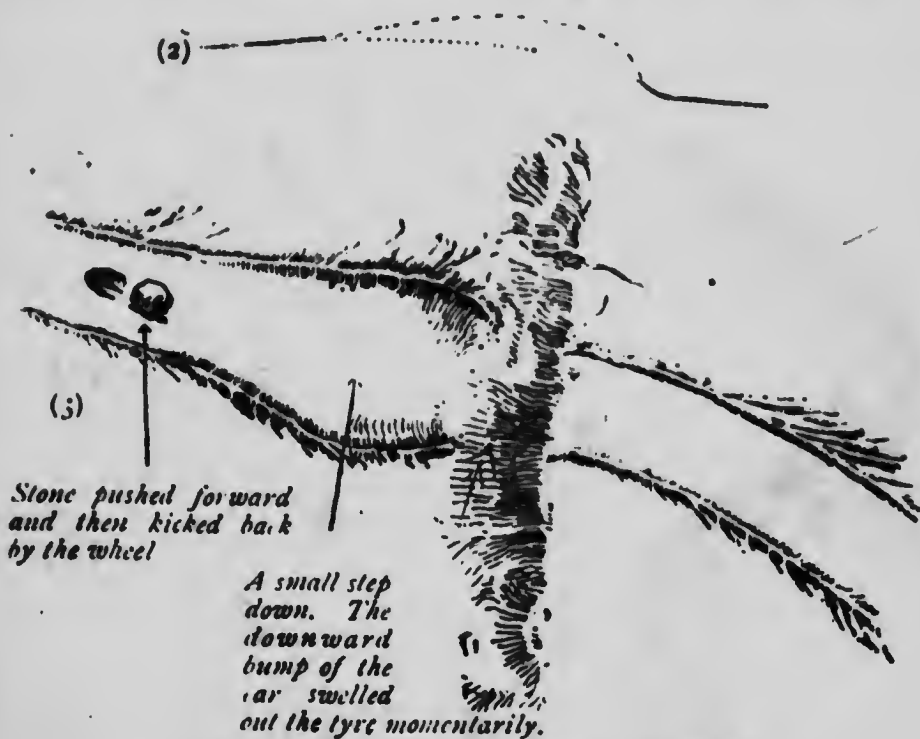
Send out a boy with "tracking irons" on and let the patrol track him and notice when any other tracks override his, showing what people or animals have passed since.

Tracking irons are an invention of Mr. Thompson Seton and can be strapped on to the soles of a Scout's boots like a pair of skates, so that wherever he goes he leaves a track similar to that of a deer. Instead of tracking irons you can easily use a few extra nails screwed into the sole or heel of your boots or into the butt of your staff in such a pattern as to make an unmistakable track.

Good practise in tracking can be had by playing the game known as Hare and Hounds. (See p. 549.)



(2) The direction of a bicycle is further shown by the loops made in the track where the rider has made a turn or wobble; the thinner end of the loop points in the direction he was going.



TRACK OF (1) (2) BICYCLE AND (3) MOTOR.

### Winter Tracking

For young Canadians the ideal time to become acquainted with the A B C of tracking is when the ground is covered with snow. One's first winter visit to familiar summer haunts is often a great surprise. Snow is a great telltale of all that goes on in the woods, and it is astonishing to find how many more wild creatures there are about than you would have thought was possible. The truth is, of course, that in settled districts experience has taught the animals that the only safe time for them to leave their cover is at night.

The very first snowfall offers as good a chance as any to the young Scout to learn what wild creatures there are around, and as his experience grows, he will presently be able, not

only to distinguish the different kinds of animals from one another by their trails, but in them he will be able to read the creature's very emotions as it moved along.

"Let us go forth into the woods," writes Mr. Ernest Thompson Seton, "where there is good tracking snow and learn a few letters of the wood alphabet. Two at least are sure to



1. Blarina or short-tailed shrew in snow. 2. Deer mouse. 3. Meadow mouse. 4. Masked shrew.

—By courtesy of E. T. Seton.

be seen—the track of the blarina, or short-tailed shrew, and of the deer mouse.

"In Fig. 3 is the track of the meadow mouse. This is not unlike that of the blarina, because it walks, being a ground animal, while the deer mouse more often bounds. The delicate

lace traceries of the masked shrew, shown in Fig. 4, are almost invisible unless the sun be low; they are difficult to draw, and impossible to photograph or cast satisfactorily but the sketch gives enough to recognize them by.

"The meadow mouse belongs to the rank grass in the lowland near the brook and passing it towards the open, running water we may see the curious track of the muskrat; its five-toed hind foot, its four-toed front foot, and its long keeled tail are plainly on record. When he goes slowly the tail mark is nearly straight; when he goes fast it is wavy in proportion to his pace.

"The muskrat is a valiant beast; he never dies without fighting to the last, but he is in dread of another brookland creature—the mink. Individual tracks of this animal are



Muskrat tracks, one-third life size

—By courtesy of E. T. Seton.

shown on page 113. Here he was bounding; the forefeet are together, the hind feet track ahead, and tail mark shows, and but four toes in each track, though the creature has five on each foot. He is a dreaded enemy of poor Molly Cotton-tail, and more than once I have seen the records of his relentless pursuit."

#### Stories of the Trail

The following stories of the trail are told by Ernest Thompson Seton and pictured by him in the sketches appearing on p. 113. Sketch No. 1 is described in these words:—

"It was in the winter of 1900. I was standing with my brother, a business man, on Goat Island, Niagara, when he remarked, 'How is it? You and I have been in the same parts of America for twenty years, yet I never see any of the curious sides of animal life that you are continually coming

across.' 'Largely because you do not study tracks,' was the reply. 'Look at your feet now.' There is a whole history to be read. 'I see some marks,' he replied, 'that might have been made by some animal.' 'That is the track of a cottontail,' was the answer. 'Now, let us read the chapter of his life. See, he went in a general straight course as though making for some well-known haunt, his easy pace, with eight or ten inches between each set of tracks, shows unalarm. But see here, joining on, is something else.' 'So there is. Another cottontail.' 'Not at all, this new track is smaller, the forefeet are more or less paired, showing that the creature can climb a tree; there is a suggestion of toe pads and there is a mark telling evidently of a long tail; these things combined with the size and the place identify it clearly. This is a trail of a mink. See! he has also found the rabbit track, and finding it fresh, he followed it. His bounds are lengthened now, but the rabbit's are not, showing that the latter was unconscious of the pursuit.'

"After one hundred yards the double trail led us to a great pile of wood, and into this both went. Having followed his game into dense cover, the trailer's first business was to make sure that it did not go out the other side. We went carefully around the pile; there were no tracks leading out. 'Now,' I said, 'if you will take the trouble to move that woodpile you will find in it the remains of the rabbit half devoured and the mink himself. At this moment he is no doubt curled up asleep.'

"As the pile was large and the conclusion more or less self-evident, my brother was content to accept my reading of the episode."

Sketch No. 2 was made by Mr. Seton, near Toronto. It is really a condensation of the facts, as the trail is shortened where uninteresting.

"At A, I found a round place about 5 x 8 inches where a cottontail had crouched during the light snowfall. At B, he had leaped out and sat looking around; the small prints in front were made by his forefeet, the two long ones by his hind feet, and farther back is a little dimple made by the tail, showing that he was sitting on it. Something alarmed him, causing him to dart out at full speed towards C and D, and now a remarkable change is to be seen; the marks made by the front

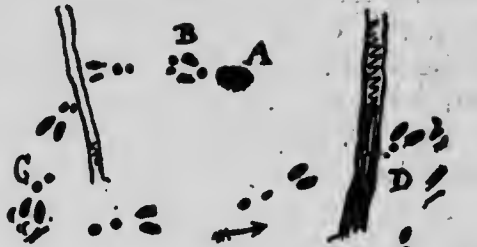




Deer



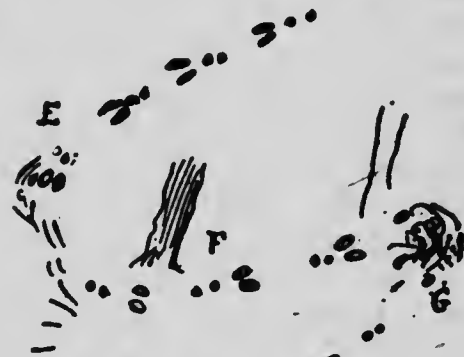
Sheep



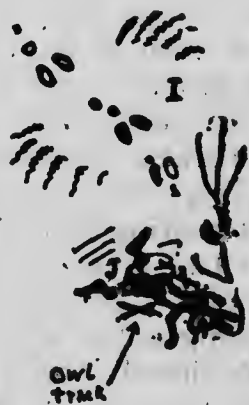
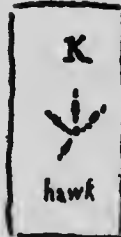
Mink



Cottontail



No. 1



No. 2

Stories of the Trail

—By courtesy of E. T. Seton.

feet are behind the large marks made by the hind feet, because the rabbit overreaches each time. The hind feet track ahead of the front feet; the faster he goes, the farther ahead those hind feet get; and what would happen if he multiplied his speed by ten, I really cannot imagine. This overreach of the hind feet takes place in most bounding animals.

"Now the cottontail began a series of the most extraordinary leaps and dodgings (D, E, F) as though trying to escape from some enemy. But what enemy? There were no other tracks: I began to think that the rabbit was crazy—was flying from an imaginary foe—that possibly I was on the trail of a March hare. But at G I found for the first time some spots of blood. This told me that the rabbit was in real danger but gave no clue to its source. I wondered if a weasel were clinging to its neck. A few yards farther, at H, I found more blood. Twenty yards more, at I, for the first on each side of the rabbit trail, were the obvious marks of a pair of broad, strong wings. Oho! now I knew the mystery of the cottontail running from a foe that left no track. He was pursued by an eagle, a hawk, or an owl. A few yards farther and I found the remains (J) of the cottontail partly devoured. This put the eagle out of the question; an eagle would have carried the rabbit off bodily.

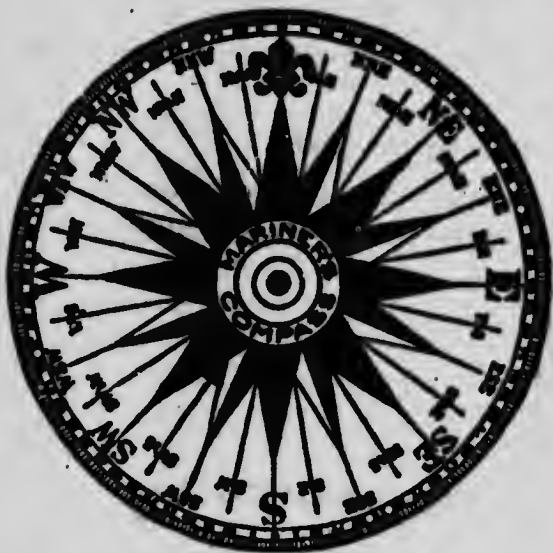
"A hawk or an owl then was the assassin. I looked for something to decide which, and close by the remains found the peculiar two-paired track of an owl. A hawk's track would have been as K, while the owl nearly always sets its feet in the ground with two toes forward and two toes back. But which owl? There were at least three in the valley that might be blamed. I looked for more proof and got it on the near-by sapling—one small feather, downy, as are all owl feathers, and bearing three broad bars, telling me plainly that a barred owl had been there lately, and that, therefore, he was almost certainly the slayer of the cottontail. As I busied myself making notes, what should come flying up the valley but the owl himself—back to the very place of the crime, intent on completing his meal no doubt. He alighted on a branch ten feet above my head and just over the rabbit remains and sat there muttering in his throat.

"The proof in this case was purely circumstantial, but I think that we can come to only one conclusion; that the evidence of the track in the snow was complete and convincing."

## THE POINTS OF THE COMPASS

Every sailor boy knows the points of the compass by heart, and so should a Scout. A good plan is to carry a small compass about with you in the pocket or on the watch chain.

Not only should Scouts know the points of the compass but



Boxing the compass consists in enumerating the points, beginning with north and working around the circle as follows:

## NORTH

North by east  
*North, North-east*  
 North-east by north  
 NORTH-EAST  
 North-east by east  
*East, North-east*  
 East by north

## SOUTH

South by west  
*South, South-west*  
 South-west by south  
 SOUTH-WEST  
 South-west by west  
*West, South-west*  
 West by south

## EAST

East by south  
*East, South-east*  
 South-east by east  
 SOUTH-EAST  
 South-east by south  
*South, South-east*  
 South by east

## WEST

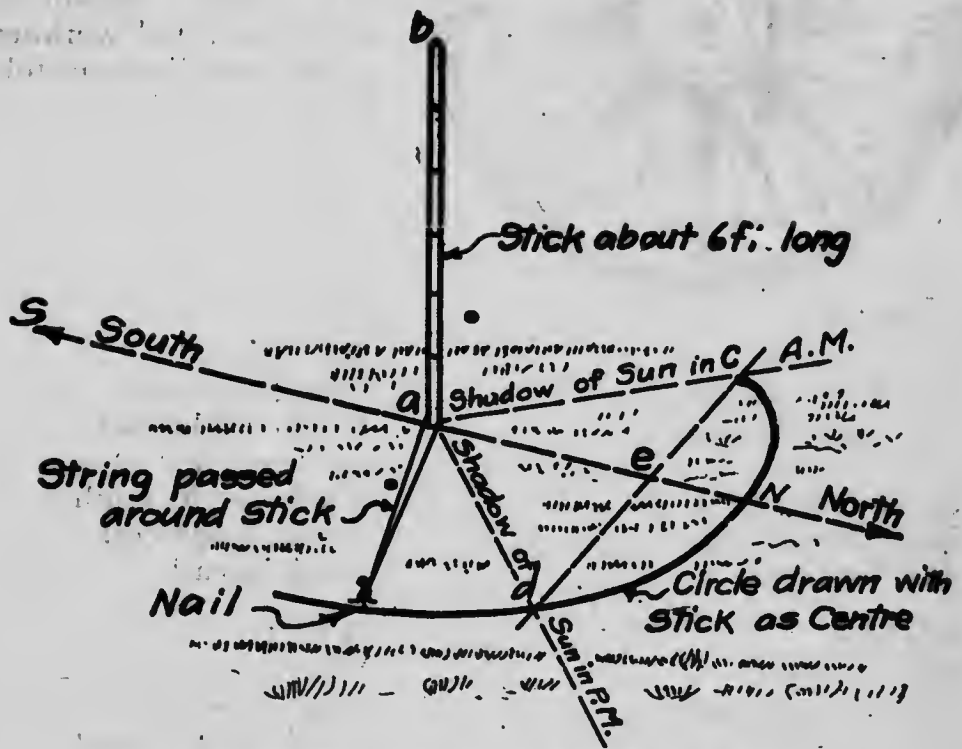
West by north  
*West, North-west*  
 North-west by west  
 NORTH-WEST  
 North-west by north  
*North, North-west*  
 North by west  
 NORTH

they should understand its use. It requires practise to be able to follow a given direction by the use of the compass and it is

better to try this out first on familiar ground. Some people have such a highly developed natural sense of direction as to be able to find their way anywhere, whilst others are lost after turning a few unfamiliar corners. Among the Indians a man who was good at finding his way in a strange country was termed a "pathfinder," which was with them a name of great honour. Sometimes these "pathfinders" led parties on the war-path for hundreds of miles over ground they had never traversed before.

#### Finding the Way by the Stars

If you have not a compass the sun will tell you by day where the North is and the moon and stars by night. The



Finding the North by the shadow of a pole

Contributed by Prof. John A. Stiles

most useful star group in the heavens for Scouts to know is the Great Dipper (shown in the illustration appearing on page 119), because by its help we may always discover that great signpost of nature in the sky, Polaris, the North Star, around which all the other stars rotate. The two "pointers" at the

end of the Great Dipper are so named because they always point the way to the North Star. If, however, you were out walking and wanted to know where the North was and could not see the North Star, it would be sufficiently accurate if you could find the Dipper and the Pointers and make a guess at about where the North Star would be, and use that as your guide.

#### Finding the North by Shadows\*

Another means of finding the North is by means of the shadow of a pole.

This is a very slow method but a very good one. Let us suppose that the Scouts are in camp and want to locate the true North. To do so proceed as follows: On a level piece of ground stand a stick (ab) 6 or 8 ft. long in an upright position. At about ten or half past ten in the morning tie a piece of string loosely around the bottom of the pole (a) and hold the other end of the string at the end of the pole's shadow (c). Now, imagining that the bottom of the pole is the centre of a circle and the shadow (ac) the radius, draw about half a circle on the ground. If you cannot scratch the ground to show the circle, put in bits of sticks to mark where it should be. In a few minutes you will notice that the shadow has left the circle and is getting shorter. You, of course, know that the shadow of the stick will be shorter at noon than at any other time, and that it then begins to lengthen out again. Watch it until it stretches out and once more strikes the circle at (d). Mark the point right away and draw a line from (d) to (c). Now find the middle of the line (dc), that is the point (e) and draw a line from (e) to the base of the pole (a). The line (ae) will be the North and South line. The North end is always on the same side of the pole as the circle.

You may try the above experiment and be bothered by clouds hiding the sun, just when you need it most. To avoid this draw several circles, say one at 10.30 a.m., one at 11.00 a.m., and one at 11.30 a.m., and watch where the sun strikes each one, and lay off the line (dc) in each case. Each circle should give you the same North and South line as the others; that is although the points (e) won't be in the same place they will be in the same line N S.

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\*Contributed by Prof. John A. Stiles, B.A.Sc., Provincial Commissioner of Boy Scouts Association for New Brunswick.

## BY MEANS OF A WATCH

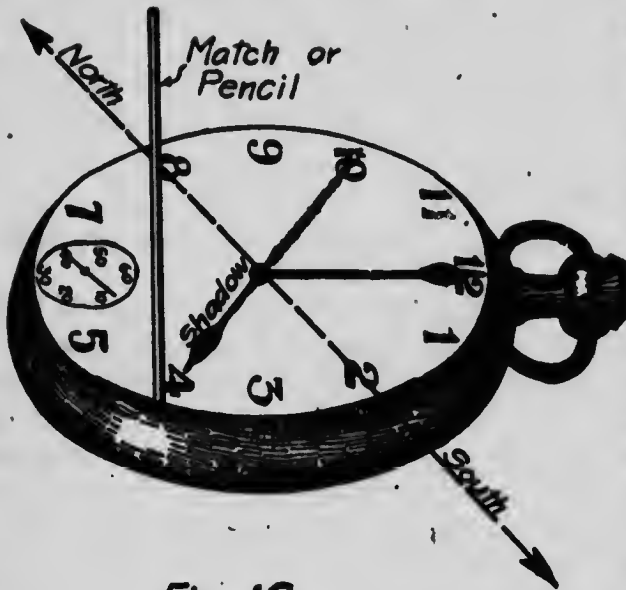


Fig. 16

## FINDING NORTH WITH A WATCH

the drawing you will notice that the pencil is held at four o'clock. Now half way between the end of the hour hand and twelve o'clock is either North or South. A good thing to remember is that the bisection of the shorter distance between the hour hand and twelve o'clock is always South, between the hours of 6 a.m. and 6 p.m.

The next thing you will want to know will be what to do in regard to this method, when the sun is not shining. On almost any day you will be able to use the above method if you will take a piece of white paper and place it over the face of the watch, and hold the pencil at the end of the hour hand, close to but not touching the paper. Under the point of the pencil you will notice a very small shadow. One side of the shadow will have a sharp or well defined edge and the opposite side will be rough and indistinct. The sharp edge is the side from which the light of the sun is trying to come; therefore, turn the hour hand in that direction or until you think the little shadow, if produced backward, would pass through the centre of the watch. Sometimes the day will be so dark that it will be difficult to even see the shadow under the point of the pencil.

When the sun is shining, assuming that you have a watch or can borrow one for the occasion, a very handy method of finding the North is as follows:—

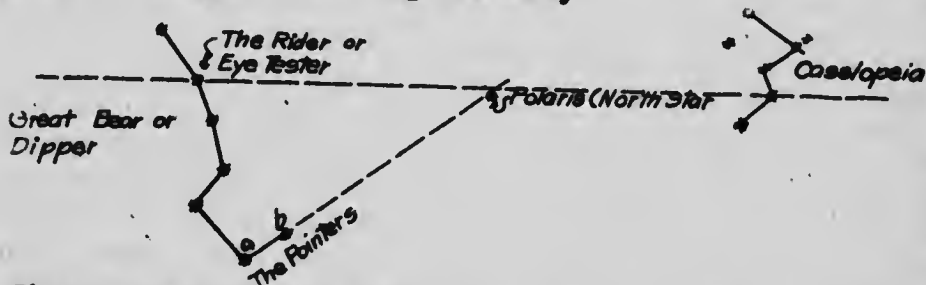
Hold the watch out flat on your hand and stand your lead pencil or a piece of a stick on the end of the hour hand and turn the watch until the shadow falls along the hour hand and through the centre of the watch. In

In that case use a stick about half an inch square and not sharpened. Practise will show you that no matter how dark the day you can always get a shadow, be it ever so small, and that that shadow will have a sharp edge and a rough edge. The sharp edge is the side towards the sun.

### THE STARRY HEAVENS\*

Every Boy Scout ought to know something about the stars for some lonely night, perhaps when earthly friends may be far away, you will be cheered and comforted by lifting your eyes to the firmament above and recognizing the familiar, bright stars or constellations. Before the dawn of history the shepherds and wandering tribes of eastern lands as they rested at night used to gaze into the starry heavens and meditate upon their glory. Fancy and imagination being strong in them, they wove the stars into pictures of animals and familiar objects and the names thus given have continued in use ever since.

The sky may be compared to an umbrella over you. The North or Pole Star is where the stick goes through the centre of it. The stars near the Pole Star describe small circles about it, those farther away larger circles, ever increasing in their sweep till we get ninety degrees away.



From what has been said we can see that the Great Dipper will circle around the Pole Star and its direction from the pole will depend upon the time of night and the season of the year. If we take a line from the star at the bend of the handle of the Great Dipper (if your eyes are sharp you will see that it is a double star), passing through the Pole Star and continuing about as far beyond we come to another bright star which is one of a group called Cassiopeia—The Lady in the Chair—the bright stars of which are in the form of the letter "W."

\*Contributed by Mr. W. E. Harper, Astronomer, Dominion Astronomical Observatory, Ottawa.

Then in the winter season we see towards the south the most beautiful constellation of all, Orion, by name, representing a mighty hunter.



ORION

The stars in the "belt" serve as pointers to Sirius, the "Dog Star," the brightest in the sky, which is some 20 degrees south-east of Orion; and that above, and to the west of the "shield" is the red star Aldebaran in the V-shaped group of the Hyades while a little further in the same direction is the glimmering cluster of the Pleiades. The Hyades mark the head of Taurus, the Bull, and the Pleiades hang on his shoulder.

There would be no water fall from which to develop power if the sun did not lift the water of the ocean into the clouds and carry it inland, there to descend in the form of rain, which in turn makes its way to the ocean through rill and stream and river. The energy which the sun thus exerts shows no sign of giving out. Indeed, it is constantly being replenished. Changes are taking place all the time on its surface; it is never at rest; gases are being ejected from its interior and forced outwards at enormous velocity, only to fall back again into it. Dark spots appear on the sun's surface from time to time. These and other occurrences are being studied by scientists and

Three bright stars in line represent his belt, while fainter ones downward indicate his sword, with other surrounding stars representing various parts of his body. Other star groups can be learned by taking the Starman's proficiency badge but space prevents further consideration of them here.

### The Sun

In our solar system we have the sun at the centre, a giant body a million and a third times as large as the earth, and a number of planets which, like the earth, move about the sun in various periods of time.

The sun is the most important heavenly body because without it there could be no life on the earth. It gives us our light and heat and from it radiates energy which we find available on the earth in many forms. There could be no coal without the rays of the sun in ages past.



it may be that through their investigation we will some day be able to predict weather conditions farther ahead than we can now.

### The Moon

Next to the sun, the moon is to the people on the earth the most important body. While we are not so well supplied with moons as Jupiter or Saturn, which have nine and ten respectively, yet ours is relatively much larger. In every part of the world people have woven fancies about the curious spots on the moon's surface and the legend of the Man in the Moon is as ancient as anything in the history of human thought. In our own country the form the story takes among the Indians is that of a man breaking the Sabbath day by cutting wood for which he was sentenced to the moon. The Woman in the Moon has also been a favourite subject of myth-making. The profile of a woman's face can be seen at any time between first quarter and full moon, the face turned towards the east. Of course, Scouts know that these light and dark patches on the moon's surface are, however, nothing more than the higher and lower elevations which are lit up unequally by the sun's rays.

Some people have the erroneous idea that the position of the moon in the sky has a great deal to do with the weather. They scan the sky for a new moon believing it will be fine weather "if you can hang a powder horn on the tips of the moon." They forget that there are places, particularly in mountainous regions, within a few miles of each other, which have entirely different weather conditions. Furthermore, we must remember that when it is new moon in Halifax, it is new moon in Ottawa, Winnipeg, Calgary and Vancouver. Indeed, it is new moon in Japan, Siberia, Russia, England, Australia, New Zealand, Africa; in fact, everywhere. It would be unreasonable to suppose that the weather all over the world would change at one and the same time. But this is not all. We commonly speak of the four changes of the moon. In reality there is a constant change in the amount of light reflected, for the phase is changing not every week, nor every day, but every hour and instant and it is absurd to pick out any one particular change and make it alone responsible for the weather. The exact position the moon will occupy in the sky can be foretold years ahead but we cannot as yet foretell the weather beyond about two days, so that we may rest assured there is no connection between the two.

The moon, for some strange reason, seems to have gained for itself a kind of shady reputation among mankind. In fact, all manner of strange superstitions have become current about its baneful influence; for example, that sleeping in the full moonlight will twist the sleeper's face to one side, whilst fish exposed to the full moon are poisonous to eat. Superstitious farmers will not kill their hogs at certain phases of the moon, and will only plant peas and other grains and even flower seeds at certain phases of the moon, believing that they will thereby secure the most advantageous results; all of which is, of course, pure nonsense. But superstition dies hard.

While the foregoing beliefs have no foundation in fact, yet the moon does have some bearing on earthly affairs. It is the principal agent in the movement of the tides, raising the waters of the oceans, and less noticeably, those of the lakes, so that the depth of the water at shore is alternately lowered and raised as the tide ebbs and flows.

#### WEATHER LORE

Even in town it is worth while studying the signs that are indicative of impending weather changes. But in the open, knowledge of this kind is worth far more again. Every Scout ought to be able to read a barometer.

He should remember the following points: "Red at night is the shepherd's delight (*i.e.*, fine day coming), red in morning is the shepherd's warning" (*i.e.*, rain). A yellow sunset means wind. A pale yellow sunset means rain. Dew and fog in early morning usually indicate a fine day; on the other hand a fog that does not lift means rain. A clear distant view means rain coming or just past. Red dawn means fine weather; so does low dawn. High dawn is when the sun rises over a bank of clouds; high above the horizon means wind.

Every wind has its weather, is an old saying—and we might add every cloud as well. Soft clouds signify fine weather; hard edged clouds, wind; rolled or jagged clouds, strong wind.

"When the wind's before the rain,  
 Soon you may make sail again;  
 When the rain's before the wind,  
 Then your sheets and halyards mind."

The old saying "Mackerel sky, twelve hours dry," often turns out true. Another familiar promise, which often finds fulfilment, is that of "Rain before seven, clear before eleven."

"Everything is lovely and the goose honks high," is an expression familiar to many Canadians of the older generation who can remember when the wild geese passed overhead in countless numbers during their spring and fall migrations, sounding at intervals their honking call as they flew.

It will often be observed that flies are especially troublesome and sting sharply before an approaching storm. Even the flowers seem to receive their warning of impending changes in the weather. All wild creatures regulate their movements in accordance with the weather probabilities and nature has given them special instinct in this connection. Shepherds say that when their flocks turn their tails to windward it will rain. Cattle too have a habit of seeking shelter together before a storm, with their tails to windward. Sometimes the animals betray their uneasiness in unmistakable ways when a storm is brewing.

This uneasiness prior to rain is probably due to increasing moisture in the air which makes animals as well as human beings uncomfortable. When the air is dry, evaporation from the skin is rapid and produces a feeling of freshness, while in a moist air evaporation is slow and leads to a feeling of depression.

The moisture in the air usually begins to increase some six or seven hours before rain, but not infrequently the warning is of much shorter duration. In the case of thunderstorms an increase of moisture does not occur until very shortly before the rain, perhaps an hour and a half, but the change is more rapid than in cases where the rain is of long duration.

#### Weather Maps\*

Science and experience have proven that the surest way of foretelling the weather for any given locality is by means of weather maps, showing the weather conditions existing elsewhere, over large areas. This is the method employed by the Meteorological Service of Canada in connection with their official forecasts. Scouts will, therefore, be well advised to obtain the official forecasts, when they are available, rather than to trust too much to their own judgment of weather signs.

The great advantage of the weather map over all other

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\*The following notes on weather forecasts and clouds, as well as the illustrations accompanying the latter, have been kindly contributed by Sir Frederick Stupart, Director of the Meteorological Service of Canada.

methods lies in the fact that where the local observer has for his horizon the horizon of the place, the weather map has for its horizon the confines of the continent and the forecasts based thereon are made by an experienced man.

The atmosphere is not spread evenly over the earth's surface, the difference of temperature between the equator and the poles, together with the turning of the earth on its axis leading to a distribution which causes a surface drift from northeast to southwest in the lower latitudes, and a general west to east drift in the middle latitudes within which latitudes most of Canada lies.

It is within this west to east drift that storms move and by storms we mean not only the great disturbances which cause gales with snow or rain, but also the more moderate disturbances which give the ordinary rains of spring and summer.

These storms may be thought of as vast eddies moving within the general easterly drift of the atmosphere.

As storms move from westward towards the eastward, the first indications of a change in the weather must be looked for in the west or southwest.

If a Scout has a barometer he will find that it is usually rising or high with westerly winds during fine weather, and that a falling barometer with southerly or easterly winds is usually followed within a short period by unsettled conditions.

#### Storm Signs

The clouds should be carefully watched as the approach of a storm is generally heralded by the appearance of cirrus clouds—high, whitish, wispy clouds, which may, indeed, precede the fall in barometer, or a change of wind.

Scattered isolated clouds are, as a whole, characteristic of fine weather; but when the sky becomes hazy and then thickens, when the clouds arrange themselves in long parallel rows giving the appearance of waves and finally become sheets of cloud, wet and perhaps stormy weather is indicated, and before long the sky is covered with the general rain cloud.

In autumn and winter a falling barometer and an easterly wind with a tendency to shift to the northeast indicates that a storm is approaching from the southwest and will probably pass to the south of the observer and that the rain or snow will be heavy and of considerable duration.

Should the barometer fall with an east wind shifting to a

south and southwest wind; the centre of the storm is passing to the northward, and the rainfall is likely to be more spasmodic, followed in summer by cool northwest winds and in winter by a northwesterly gale and much colder weather.

The summer thunderstorm which is at times accompanied by a violent squall occurs within the boundaries of an eastward moving disturbance of wide area. The usual conditions are a rather low barometer, falling slowly with the wind anywhere between east and south, and the weather decidedly warm. These storms may occur at any hour of the day or night, but the afternoon has perhaps the highest percentage.

Thunderstorms do sometimes occur when the barometer is high and steady and the weather rather fine, but this is not usual and these storms are seldom accompanied by severe squalls.

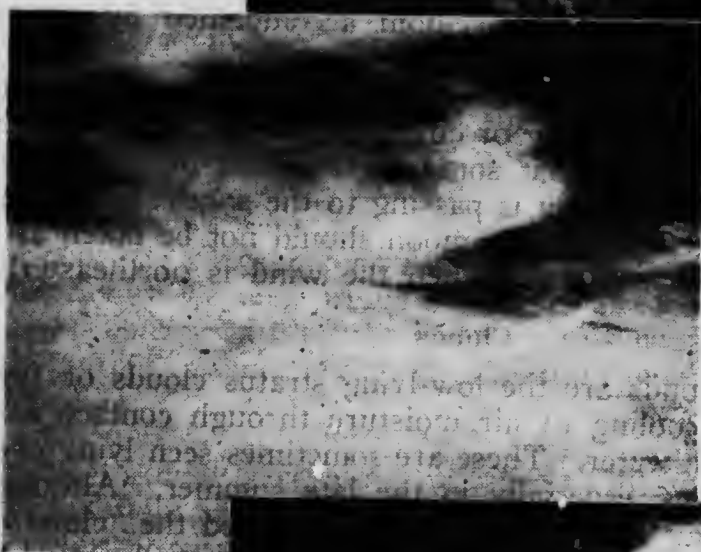
Among the many signs which are usually associated with the approach of rain is the ring or circle around the sun or moon. Experience has shown that some of the most brilliant rings occur, however, when rain is passing to the south: hence, the ring around either the sun or moon should not be taken as a sure sign of rain, especially when the wind is northeasterly.

#### Clouds

The lowest clouds are the low-lying stratus clouds or fogs formed by the cooling of air moisture through contact with the earth or with water. These are sometimes seen lying over lakes and streams, especially in the late summer. Although often seen during the day, the stratus is called the "cloud of night," as commonly it forms about sunset, grows denser during the night and is dissipated by the morning sun. The term stratus is broadly applied to continuous clouds at any height, arranged in horizontal layers or sheets. The low-lying stratus clouds in reality are nothing more than high fogs. Those of somewhat higher altitude are spoken of as strato-cumulus. From about 6,000 to 18,000 feet altitude they are described as alto-stratus and at very high altitude, up to 27,000 feet, as cirro-stratus.

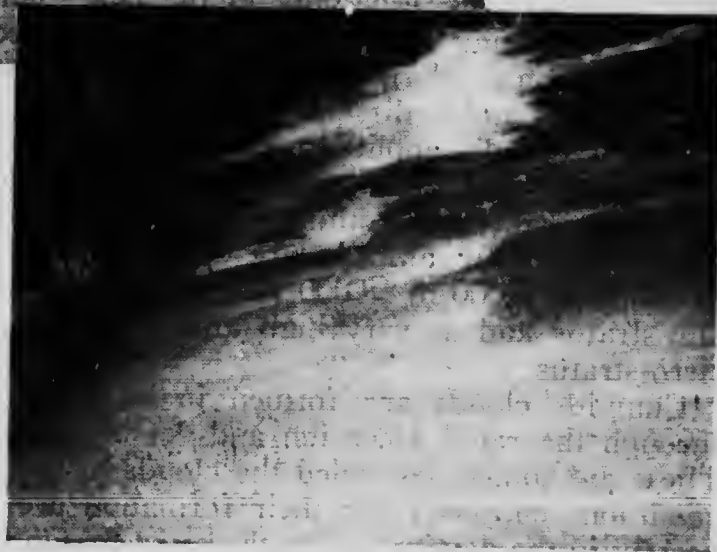
Cumulus clouds are formed in balls or rounded masses through the rapid ascension and cooling of warm, moist air. These are sometimes called the clouds of the day because the conditions necessary for their formation are more commonly present in the daytime. For the same reason they may also be

Cirro-Cumulus



Cirro-Stratus

Cirrus





Cumulus



Alto-Cumulus



Cumulo-Nimbus

called the clouds of summer. When spread out in a layer or in layers, forming an almost continuous mass, they are referred to as cumulo-stratus. Above the cumulus are the alto-cumulus clouds, extending to an altitude of about 12,000 feet. Like the alto-stratus the alto-cumulus clouds are composed of water particles, probably often below the freezing point.

Cirrus clouds are the highest of all, sometimes attaining an altitude of ten miles. They are usually made up of fine, white, thread-like or banded forms, sometimes having the appearance of hair or feathers, and are probably composed of minute particles of snow crystals sustained on rising or moving air currents. The movements of the cirrus clouds often differ in direction from the surface winds and are indicative of coming changes of weather. In their more massed forms they are spoken of as cirro-stratus and it is when this cloud is present that halos are often seen.

The nimbus is any cloud, or system of clouds, from which rain is falling. The term cumulo-nimbus is applied to the thunderstorm cloud.

#### MAP-MAKING AND CONVENTIONAL SIGNS














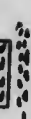











It is required in the training for the badge of a First Class Scout that the candidate must be able to read the conventional signs of a map correctly and draw an intelligible rough sketch map.

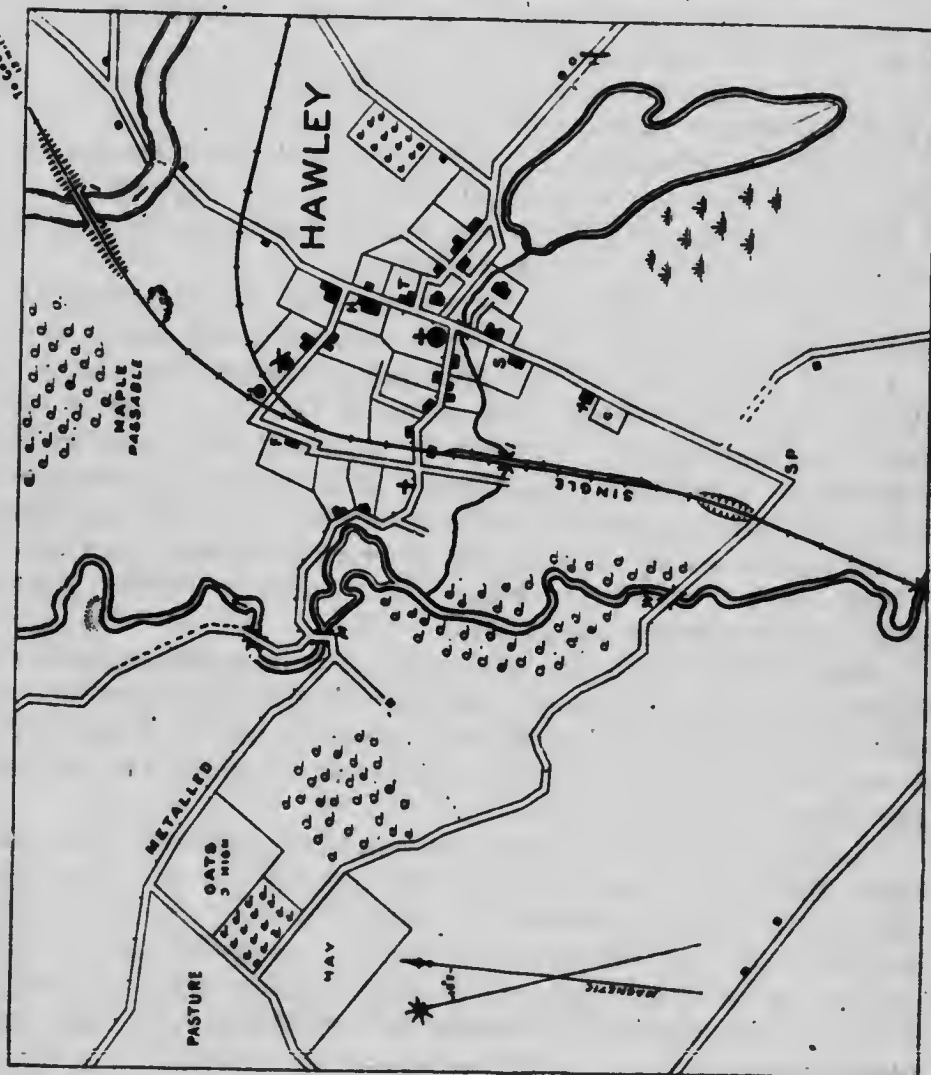
One of the first things which a Scout must note in order to understand any sketch map is the scale on which the map is drawn. By the term scale is meant the proportion which the distance between any two objects on the map bears to the real distance between the same two points. Thus, the scale may be one of ten inches to a mile, which means that a road ten inches long on the map is a mile long in reality. After acquainting himself with the scale the Scout should locate the north point on the map. The correct method of drawing this is shown in the illustration appearing on page 129. The variation between the "true north" and the "magnetic north" varies in different localities. A margin of at least one inch should be left all around the sketch.

Experience in map-making has shown that there is a practical advantage in using certain conventional signs to indicate roads, woods, houses, etc. A number of the conventional signs in use are shown on the illustration appearing on page 129.



## CONVENTIONAL SIGNS

- |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |  |   |   |   |   |   |   |   |   |   |   |   |            |
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|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |            |
| Railway Station   | Railway Cutting   | Embankment  | Metalled Road   | Unfenced  | Fence   | Bridges, Swing  | Masonry   | Iron  | Wood  | Wagon Ford  | Sand or Gravel Pt   | Church  | With spire tower  | Mill  | School  | Blacksmith shop  | Hotel   | Telegraph or Telephone  | Cemetery  | Marsh   | Woods   | Orchard   | Heath   | Field with fence, wall, etc   | Windmill  | Well  | Sign Post   | Lighthouse |



Specimen map showing conventional signs

Contributed by J. L. Crawford, Asst. S.M.

**Roads.**—Continuous lines are employed to show a road when it is enclosed by a fence, hedge, ditch or obstacle of any kind. Dotted lines are used when the road is unenclosed. Every road or railway must have "From ....." printed at the left end of it, on the margin of the sketch; and "To ....." at the right end. The distance between the nearest town or village should be given thus: "From Barrie—2 miles." (This would be on the left margin) and "To Crosby—12 miles." (This would be on the right margin.)

**Railways.**—A continuous line with crossbars is used to show a railway. The word "single" or "double" should be written along it, as the case may be.

**Woods.**—State their nature, whether maple, pine, etc., and whether they are passable or not.

**Cultivation.**—Indicate the nature of the crops; for instance, oats, wheat, pasture, fallow land, irrigated, rocky, etc.

**Bridges.**—Always indicate the material a bridge is composed of, as masonry, iron, wood, swing, etc.

**Rivers.**—The names of rivers should be written along their courses and the direction of the stream indicated by an arrow.

**Towns and Cities.**—The approximate positions should be shown of towns, villages and cities on the map. Large cities are often marked by a number of closely drawn parallel lines with perpendicular intersections. The names of towns, villages and cities should be in block letters. All lettering should be horizontal except the names of rivers, railways and canals, which should be written along their course. When possible rivers should be drawn in blue.

Churches are made an important item in sketches because a church is always a prominent feature of any view where a town or village is included, and by seeing a church marked in a map it is easily located when trying to compare the map with the country.

The reason churches are shown in three different ways is to show their value as signalling stations, or points where good observations can be made. A church with a tower would be available for this purpose, but one with a spire would not be.

The conventional signs used for sketching maps are not the same as those used in Ordnance Survey Maps. The signs used in Ordnance Survey Maps are given in the training for the Surveyor's badge, page 79.

Nothing should be in the map that is unnecessary for its complete understanding.

**JUDGING DISTANCE, ETC.**

Every Scout must be able to judge distance from an inch up to a mile or more. Objects appear nearer than they really are when the light is bright and shining on the object, when looking across water or snow, or when looking uphill or down. Objects appear farther off when in the shade, across a valley, when the background is of the same colour, when the observer is lying down or kneeling, or when there is a heat haze over the ground. A general rule to remember is that one is apt to underestimate the distance of a distinct object and to overestimate the distance of an indistinct one.

Fix firmly in your mind the length of a foot, 25 feet, 100 feet, and 100 yards and use these as units in estimating greater distances, remembering that for all ordinary purposes the horizontal distance is the one required. In the country, distances along the road can often be computed accurately by knowing the distance between telegraph or telephone poles, concessions, sections, range and township lines.

Make yourself familiar also with the size of objects of daily occurrence, such as the length of a street car or railroad car, the average frontage of a house or barn, the length of an average cedar rail on a rail fence; also standard distances, such as the width of the usual city street (1 chain, that is 66 feet). You ought to know exactly what is the span of your hand and the breadth of your thumb, the length from your elbow to your wrist, the length from one hand to the other with your arms stretched out to either side, and the length of your feet. If you remember these accurately they are a great help to you in measuring things. Also, it is useful to cut notches on your staff, showing such measurements as an inch, six inches, a foot and a yard. These you can measure off with a tape measure before you use your staff, and they may come in very useful.

A Scout should know his ordinary pace, and be able to judge distances by the time taken in walking, running or travelling "Scouts' pace." To find the length of his average step it is a good plan first to measure off a convenient distance such as 100 feet and then walk over it at his natural pace, counting the number of steps. Dividing the number of steps he has taken into 100 will give him the length of his average pace, which the Scout should note in his diary.

Judging the distance of objects from you is only gained by practise. The distance of a journey is generally estimated by seeing how long you have been travelling and at what rate;

that is to say, supposing you were travelling at the rate of three miles an hour, if you have been walking for an hour and a half you know that you have done about four and a half miles.

Distance can also be judged by sound: that is to say, if you see a gun fired in the distance, and you count the number of seconds between the flash and the sound of the explosion reaching you, you will be able to tell how far off you are from the gun. Sound travels at the rate of 360 yards in a second. A more accurate computation can be made by counting eleven beats to three seconds, each beat between the sight of the flash and the noise of the sound equalling one hundred yards. Practise is, however, required to estimate the beats correctly.

Another method of judging the distance to any object, either near or far, is to hold the arm stretched to its full length in front, cover the object with the thumb, close the left eye, then without moving the thumb close the right eye and open the left. It will be noticed that the thumb has apparently moved along to the right. Judge the distance in any units desired—for example in feet, yards or miles—which the object appears to have moved, and multiply by a factor ranging from eight to twelve. The result is the desired distance expressed in the same units as those just selected. The exact factor differs for individual boys and can only be definitely ascertained by practise. The factor for the average boy is, however, between ten and eleven. This method is particularly useful for judging the distance of the shore on the far side of a large body of water, as its degree of accuracy is quite unchanged by the amount of water lying between the observer and the far shore.

Still another way to estimate the distance across a river is to take an object X, such as a tree or rock on the opposite bank,



Judging distance across water

start off at right angles to it from A, and pace, say, ninety yards along your bank; on arriving at sixty yards, plant a stick or stone, B; on arriving at C, thirty yards beyond that, that is ninety from the start, turn at right angles and walk inland, counting your paces until you bring the stick and the distant tree in line. The number of

paces that you have taken along the line C D will then give you the half distance across A X.

#### Some Further Hints

Some further hints for judging distance are as follows:—

At fifty yards, the mouth and eyes of a person can be clearly seen. At 100 yards, eyes appear as dots; at 200 yards buttons and details of uniform can still be seen; at 300 yards a face can be seen; at 400 yards, the movement of the legs can be seen; at 500 yards the shoulders of a man no longer appear square, but bottle shaped; at 600 yards the head is visible as a dot; at 700 yards the head is invisible; at 800 yards a man looks like a post. The Arabs said: "at a distance of one mile one cannot tell the difference between a man and a woman."

For distances over these think out for yourself which point is half-way to the object, estimate how far this may be from you, and then double it to obtain the distance. Another way is to estimate the farthest distance that the object can be away, and then the very nearest it could be, and strike a mean between the two.

Lateral distances are usually estimated by the number of fingers required to cover the object, but this, of course, can be done only when the direct distance is known. The fingers are held at arm's length and not close up to the eye. One hundred yards is covered at 500 yards by six to seven fingers; one hundred yards is covered at 1,000 yards by three to three and a half fingers, one hundred yards is covered at 1,500 yards by two fingers; one hundred yards is covered at 2,000 yards by one thumb.

All the foregoing rules are for good light and level ground. In bad light, in mist, when looking across a valley or when lying down the tendency is to overestimate distance.

#### Practise in Judging Distance

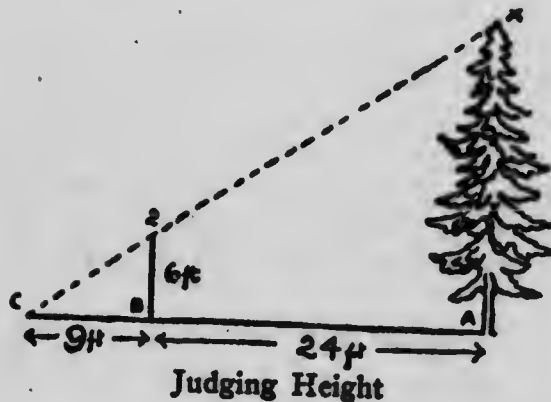
For practise in judging distances take a patrol and station its members about in different directions and with different backgrounds, according to the colour of their clothes; then take another patrol to judge the distance of these points. Practise may also be gained by sending two competitors in turn to three different points. At the first point they are merely given the compass bearing of the next one, which is some three hundred yards distant, and so on in succession. At each point each pair of Scouts notices, regarding the enemy—first, how many

are visible; second, how far they are off; third, their compass direction; fourth, how they are clothed. The best answers win; provided they are within the specified time. The time allowed should be one minute for observation at each station, and half a minute for each bit of running.

#### Judging Height

A Scout must also be able to estimate heights, from a few inches up to three thousand feet or more; that is to say, he ought to be able to judge the height of a fence, the depth of a ditch, or the height of an embankment, of a house, tree, tower, hill or mountain. It is easy to do when once you have practised it for a few times, but it is very difficult to teach it by book. The readiest way to estimate the height of a building is first to calculate the height of a storey and then multiply by the number of storeys in the building.

To find the height of an object, such as a tree (A X), or a house, pace a distance of, say, eight yards away from it, and



there at B plant a stick, say, six feet high; then pace on until you arrive at a point where the top of the stick comes in line C with the top of the tree. The whole distance A C from the foot is to A X, the height of the tree, the same as the distance B C, from the stick, is to the height of the stick; that is to say, if the whole distance A C is thirty-three feet, and

the distance B C from the stick is nine (the stick being six feet high), the tree is twenty-two feet high.

Other useful means of judging height and distance are referred to in the pamphlet covering the training required for the Surveyor's badge referred to at page 79 of the present Handbook.

#### Judging Weight

You must also know how to estimate weights, from a letter of an ounce, or a fish, or a potato of half a pound, or a bag of

bran, or a cartload of coal; also the probable weight of a man from his appearance. These, again, are only learned by practise, but as a Scout you should take care to learn them for yourself.

Practise lifting weights of one, five, ten and twenty-five pounds and in this way you will come to know how to judge the weights of different objects. A gallon of fresh water weighs ten pound and a cubic foot of water about sixty-two and one-half pounds. Salt water weighs a little more.

#### Judging Numbers

Scouts should be able to judge numbers; that is to say, for instance, to tell at a glance *about* how many people are in a group, or on a street car, or in a big crowd, how many sheep in a flock, or cattle in a herd, how many marbles on a tray, and so on. These you can practise for yourself. One of the best ways of estimating large numbers is by counting the number in a small group or section and applying this unit to the whole.

#### Judging Capacity

Capacity can be estimated approximately by making yourself familiar with the ordinary units of measurement such as a pint, a quart, a gallon, a cubic foot, a cubic yard, etc., and then applying the unit to the larger bulk.

#### Judging Area

The same plan may be applied to area by using the units of a square foot, a square yard, an acre, a small field and a quarter section or section.

#### Self Measures

Each Scout should know his exact personal measurements in the following details. The figures here given are the average man's measure:—

Nail joint of forefinger, or breadth of thumb . . . . .	1 inch
Span of thumb and forefinger . . . . .	8 inches
Span of thumb and little finger or other finger . . . . .	9 inches
Wrist to elbow . . . . .	10 inches
(This also gives you the length of your foot.)	
Elbow to tip of forefinger (called "cubit") . . . . .	17 inches
Middle of kneecap to ground . . . . .	18 inches

Extended arms, from finger-tip to finger-tip, is called a fathom, and nearly equals your height.

The pulse beats about 75 times a minute: each beat is a little quicker than a second.

A pace is about  $2\frac{1}{2}$  feet; about 120 paces equal 100 yards. When walking fast paces are shorter than when going slow.

Fast walking, you walk a mile in 16 minutes, or nearly four miles an hour.

### KNOT TYING\*

Every Scout ought to be able to tie knots. To tie a knot may seem a very simple thing, yet there are right and wrong ways of doing it, and, of course, Scouts ought to know the right way. Very often it may happen that lives depend upon a knot being properly tied. Who does not remember the catastrophe at Niagara Falls a few winters ago, when one woman and two men were carried down the rapids to the whirlpool on a block of ice, and lost their lives, owing to the inability of any one of them to tie a knot that would hold.

There are three essential qualities to a good knot:—

- (1) It must be capable of being quickly tied.
- (2) It must be capable of holding fast when formed.
- (3) It must be capable of being quickly undone.

The knots mentioned below are recommended as being very serviceable for the particular uses indicated. They meet each of the above three requirements, and, consequently, the knowledge of their construction will be a great help to any Scout in the ordinary course of his work. If the Tenderfoot will carefully *practise* the directions for the formation of each knot he will have very little difficulty in acquiring the dexterity necessary to enable him to use them as occasion may require.

As practically all knots are tied with rope, some simple method of treating the ends should be mastered to keep them from becoming frayed. The simplest way of accomplishing this is known as *whipping*, which is done with twine, spun yarn, marline, or cord. If any of these materials are untreated, they should, of course, be waxed.

To whip a rope end lay a long bight of marline or cord along the rope end (fig. 1a) and wind the cord around it and the rope itself until you reach the end (fig. 1b). Now put the end of the cord through the bight and make a quick jerk, by so

\*Contributed by Scoutmaster Leslie R. Thomson, of Montreal, Que.



doing pulling this end half way underneath all the turns previously laid upon the rope. (See fig. 1c.) If the ends have been properly pulled tight, they may then be cut off and the whipping is permanent.

A few brief definitions may be helpful in enabling Scouts to understand some of the terms used in knot making, as follows:

**Bend:** A Bend is a fastening of one rope to another rope or spar, of such a kind that it will hold permanently the full strength of the rope. The word must not be confounded with the non-technical meaning of 'bend' as 'a stick bends under

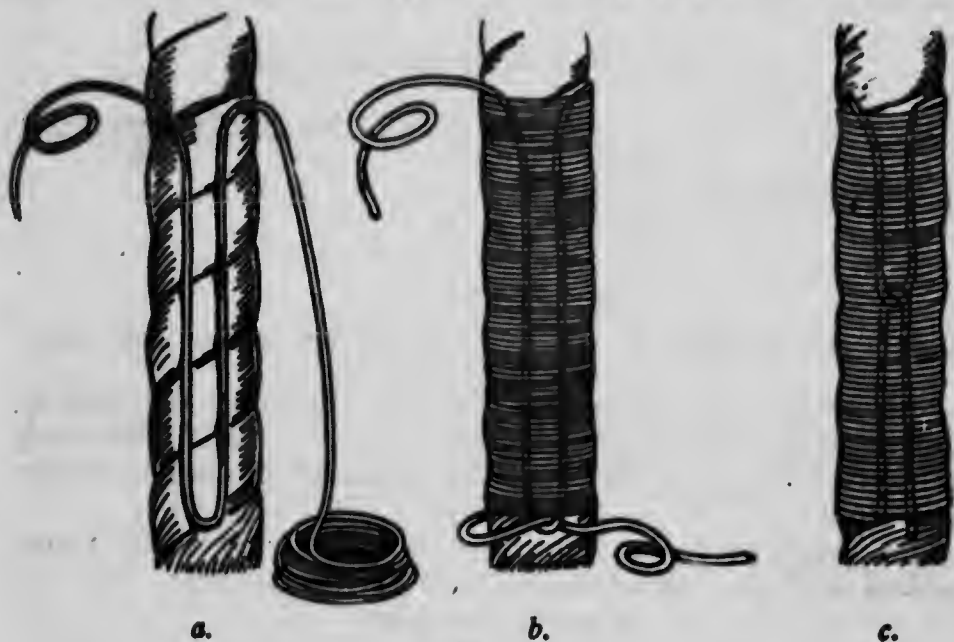


Fig. 1.

weight.' Two good examples of a Bend are the "Fisherman's Bend" and the "Carrick Bend." (See Nos. 14 and 15.)

**Hitch:** A Hitch is also a fastening, though generally less permanent than a Bend. It usually depends upon direct friction for its grip. Two good examples of Hitches are the Clove Hitch and the Blackwall Hitch. (See Nos. 11 and 17.)

**Seized:** The end of a rope is said to be *seized* to anything when it is attached to it by a few turns of yarn, or marline. (See G in Fig. 15.)

**Bight:** A Bight is a loop formed whenever a rope is turned back upon itself. (See B in Fig. 2.)

**Standing Part:** The Standing Part is the unused portion of a

rope which lies on the opposite side of the knot from the end. In Fig. 2, S is the Standing Part.

**End:** As its name would indicate, the End is the last few inches of a rope. It is used in leading when forming knots, hitches, etc., and is usually whipped or treated in some other manner, to prevent fraying. In Fig. 2, E is the End.

**Stopper Knot:** A Stopper Knot is any knot put on a rope, either at the end or in some other portion, to prevent its passing through a sheave block, or other opening through which the rope may be weaved.

**Jamb:** A Knot is said to jamb when, after being formed, and pulled tight it can not be readily undone. *This is a very bad fault.*

## 2. Rope showing Light and End

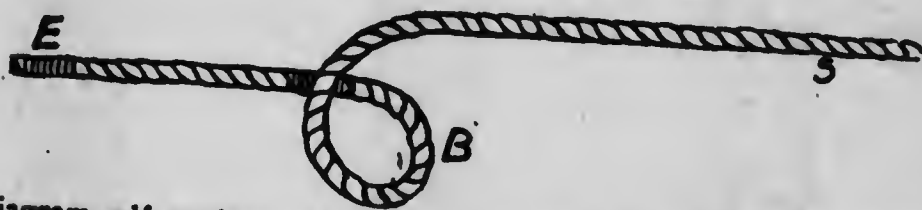


Diagram self explanatory.

Compare illustration with definitions.

**NOTE:**—For simplicity's sake, in the following illustrations all true ends are shown whipped and the ends of standing parts are left open. None of the bends or hitches is shown pulled taut.

*The Tenderfoot test requires a knowledge of those knots, marked with an asterisk and capital "T" thus—\*T.*

## 3. Overhand Knot



Diagram self explanatory.

Often used to tie a rope end. (Not very good.) Used also as a stopper knot. Not as satisfactory as "figure of 8" following.

## 4. Figure of 8 Knot



Start as for overhand No. 3, but lead end behind standing part, then insert into bight from above.

Serviceable and attractive as stopper knot.

5. Half Hitch (a) and Two Half Hitches (b)

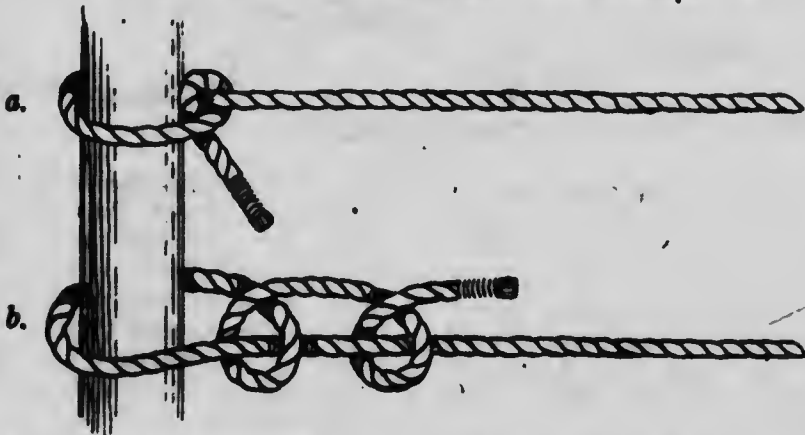


Diagram is self-explanatory.

• Used to bend a line to a spar. Will hold wet or dry.

6. Square, or Reef Knot

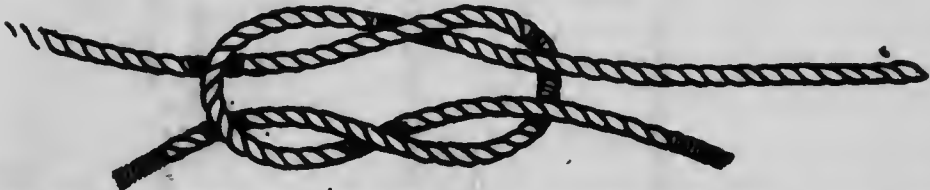


Diagram is almost self-explanatory, but note that it consists of one overhand knot on top of another. Observe also that end and standing part of one rope are on the same side of the bight formed by the other rope.

The commonest bend for two ropes of equal or about equal diameter. Also used in first aid bandages. Will hold wet or dry. Never slips with equal sized ropes.

7. Granny or "False Reef" Knot



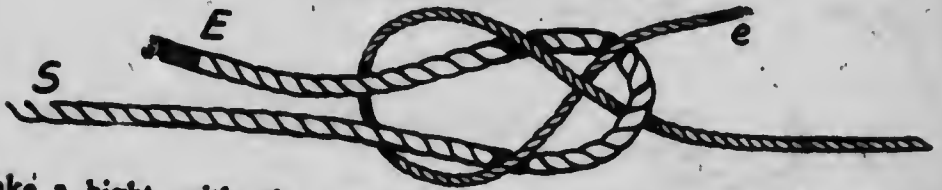
The lay of the ends is reversed from that in the square No. 6.

This is the knot commonly used by landsmen or others who have

not had special instruction in knot-tying. It is, however, a very poor one, because it is

liable to slip and will always jamb as the knot becomes tight. In fact, it should *never* be used.

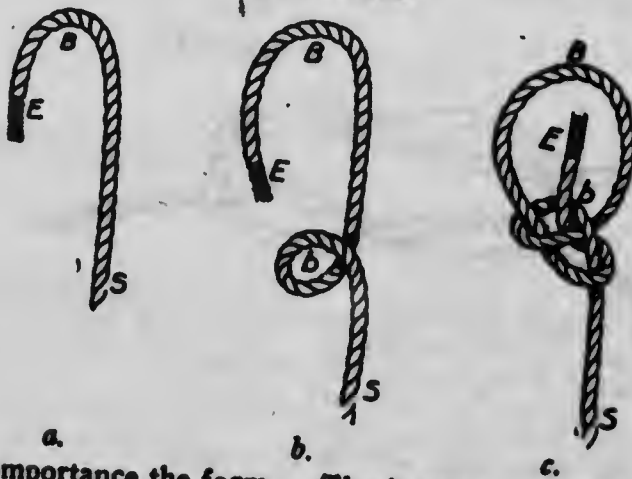
### B. Sheet Bend or "Weaver's Knot"



Make a bight with the heavier rope. S is standing part. E is end. Lead end of light rope e upwards through the bight, around E and S and then underneath itself. This bend should *never* be made in ropes by pulling out one end of a square knot.

Used for bending one rope to another of larger diameter. If properly formed and made "snug" will hold wet or dry. Also used by weaver for joining silk or cotton thread. This bend is sometimes made in its "double" form—which is even more secure.

### D. Bowline



Owing to its importance the formation will be taken up in stages.

(a) Form a bight B with the standing part S towards you.

(b) In standing part S form a small bight b with standing part above.

The bowline is probably the most useful all round knot that a Scout can know. By its means he can form a bight in a rope that will never slip nor jamb no matter what the load or conditions may be.

It will, of course, hold wet or dry. Among other uses, the following may be mentioned:—

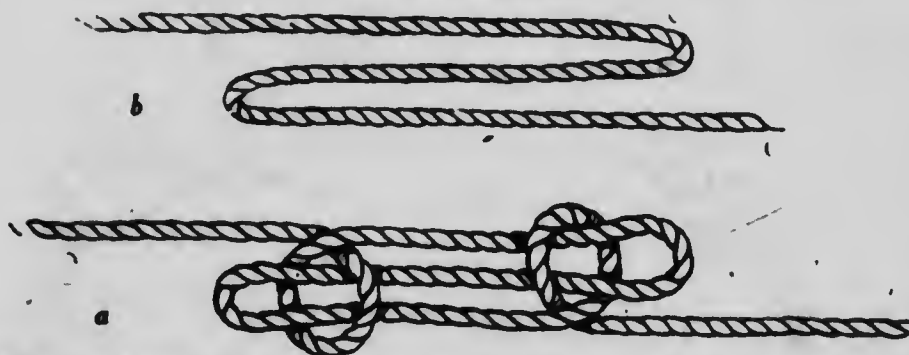
To lower a Scout from a cliff; to form a large bight on end of a ship's hawser, to slip over snub-

(c) Lead E through *b* from above, over S, under and upwards through *b* again.

bing-post; used for dragging insensible persons out of danger. (See p. 429.)

Having once thoroughly mastered the formation of the knot, as shown, the Scout should practise it with the main bight turned toward him.

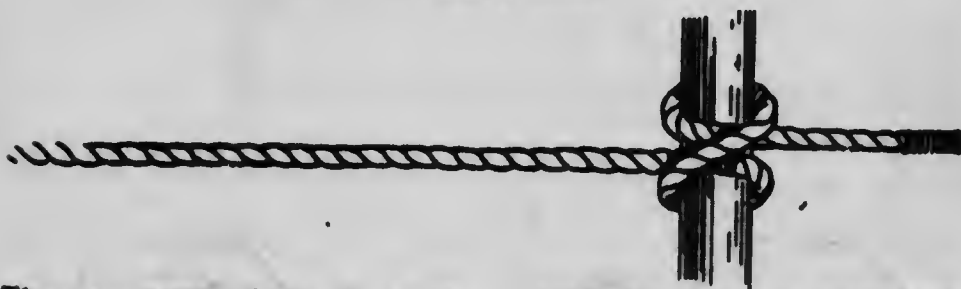
10. Sheep Shank



Gather up amount to be shortened by making two bights as shown (see *a*); then by using standing parts place a half hitch at each end of each bight in such a manner that each hitch nips an end of each bight.

Used for temporarily shortening a line. The advantage it has is that when the special need is over the whole knot may be disengaged by a sudden 'whip' along the line. This would not be the case, were a knot used.

11. Clove Hitch



There are two methods of making the Clove Hitch:—

- (a) Formed around a spar.
- (b) Formed completely in the hand and slipped over the end of a spar.

The final result is the same in either case.

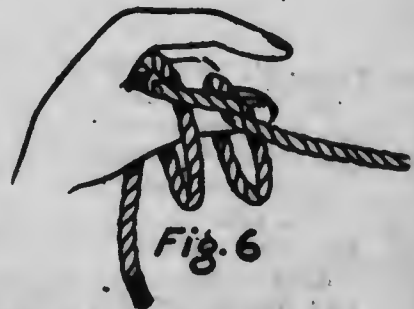
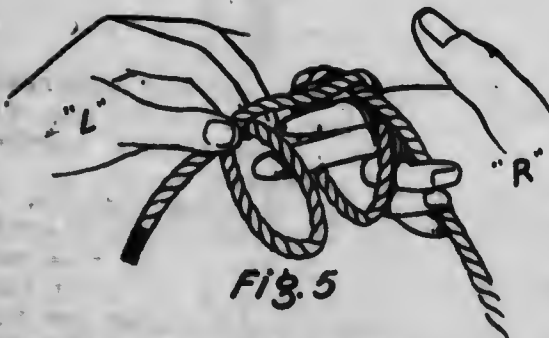
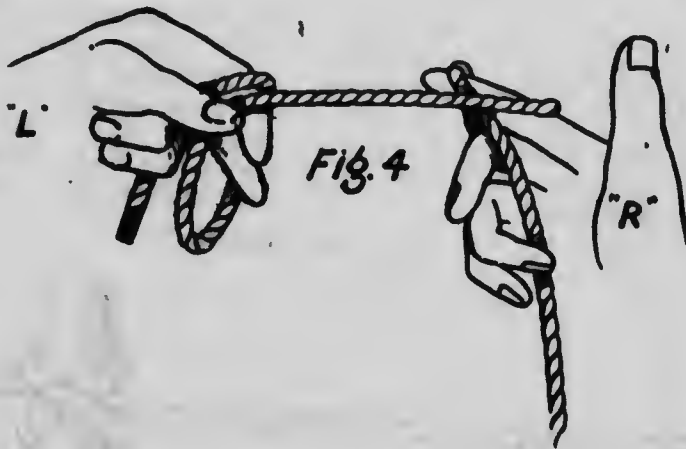
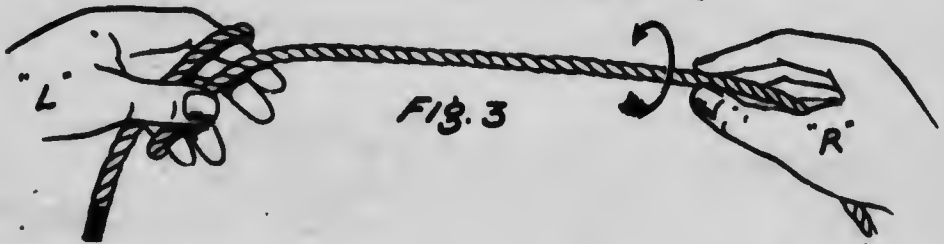
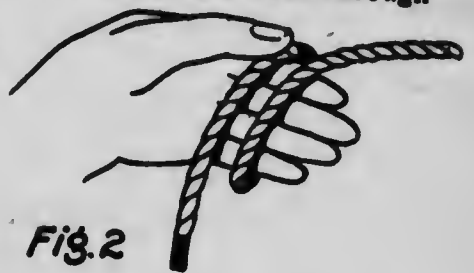
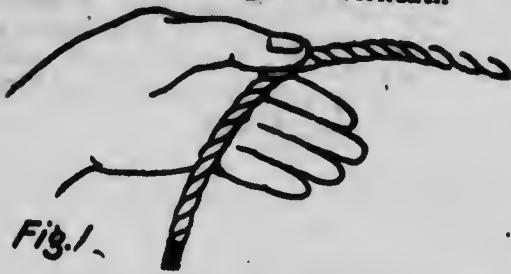
(a) Hold standing part in left hand. Pass end round the spar, over standing part around spar

again, and lead end underneath the last turn. After this, the hitch must be "pinched" together and pulled taut.

(b) Hold standing part low in palm of left hand, palm upwards, with the end of the rope outwards, lying in the right hand (See Fig. 1). Take one turn around the left hand (See Fig. 2). Then, by twisting the rope

from left to right (see Fig. 3).  
Between thumb and first finger,  
throw a small bight underneath

the part of the rope lying be-  
tween the two hands (see Fig.  
4); then pass right hand through



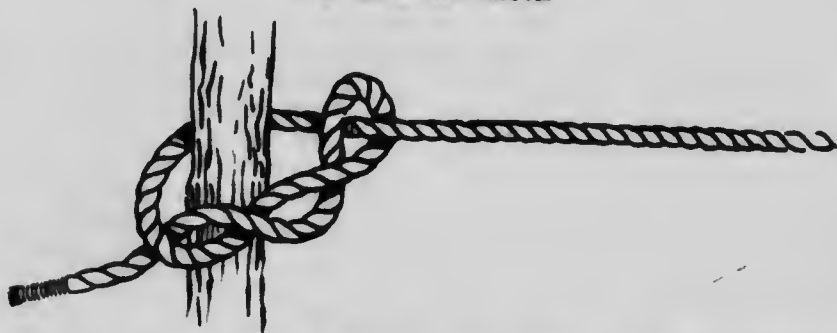
two bights (see Fig. 5) and a  
clove hitch is formed (See Fig.  
6).

This hitch is used to fasten a line  
to a spar or to another rope. It  
will withstand a load in either

direction equally well, and, if properly made will hold wet or dry. If, however, it is formed when wet, it must be tightened when the rope dries, or, otherwise, it will slip. A clove hitch

is also used to connect a 'square' lashing (see p. —). These figure Nos. all refer to the small diagrams grouped under 11.

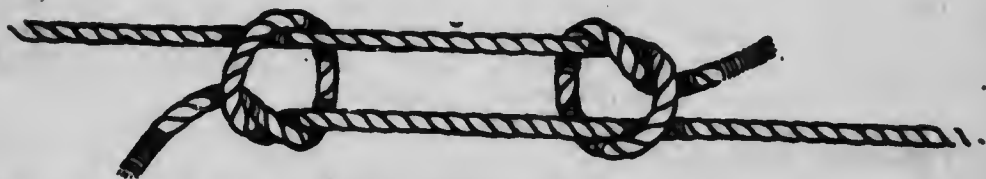
### 12. Timber Hitch



Pass the end of the rope around the timber spar, then lead it around its standing part and bring it back to make two or more complete turns on itself. It is then pulled up taut and the hitch is formed.

This hitch is used in hauling timber, also for commencing a diagonal lashing. (See p. —.) It will hold wet or dry.

### 18. Fisherman's Knot



Two ropes are laid alongside of one another, with a reasonable amount of overlap. At the end of each of the two ropes a simple overhand knot is then made around the standing part of the other rope, care being taken that the overhand knot is made so that its end lies along, not athwart, the standing part of the other rope.

Pull each overhand knot tight and bring the two knots together. This completes the formation of the fisherman's knot.

Used for tying two cords of approximately equal diameter in such manner that they may be absolutely secure in one direction, and yet be opened up in the other. An example of this is its use in uniting gut or silk on fishing lines. It will, of course, hold wet or dry.

## Boy Scouts

## 14. Fishermen's Bend

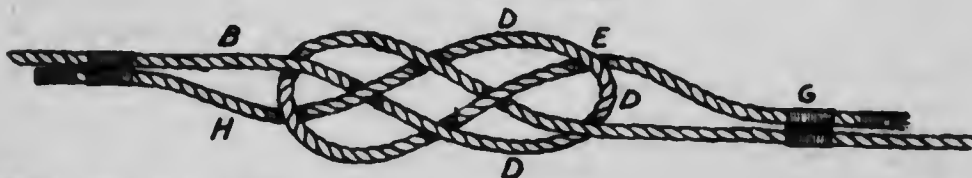


Make two complete turns round the ring, then lead end round standing part and through the turns already formed. Then above this take a half hitch round the standing part.

This is frequently used for bending a mooring line to an anchor or buoy, also used for attaching bucket line to water pail. When the bend is to be more or less permanent the end is usually seized to the standing part.

(Note the very clear distinction between Fisherman's Knot and Fisherman's Bend.)

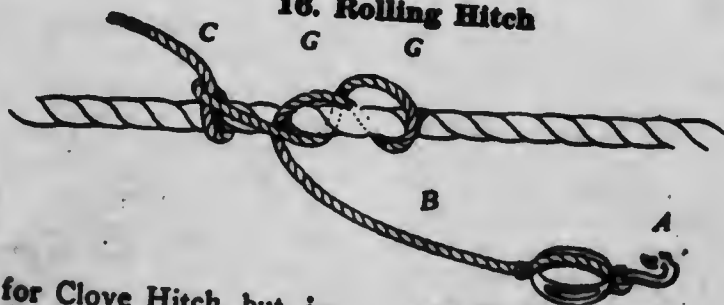
## 15. Carrick Bend



Turn one end of a hawser (H) over its own standing part (B) to form a bight DDD. Lay the other hawser across the bight thus formed, back of the standing part (B), over the end (H), then under bight (D) over its own standing part and under the other bight again at (E).

This bend is used frequently for uniting heavy hawsers. It is easily untied by pushing bights inwards. In practise, the ends (H) and (G) are usually seized to their respective standing parts.

## 16. Rolling Hitch



Start as for Clove Hitch, but, instead of taking one turn before crossing over, take two complete turns round heavy rope, then cross over standing part and finish as for Clove Hitch. This hitch is principally used for

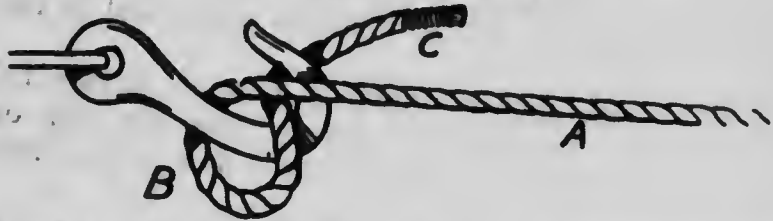
attaching a rope to a spar or to another heavier rope when load is to be taken from one to the other. It is particularly applicable for attaching the tail of a "handy-billy" to a rope which it is desired to haul tighter.



The illustration given shows the latter use. (A) being a block of the "Handy-billy" and (B) being the tail. (C) is the end of

the tail and (GG) are the two turns before finishing off as in the Clove Hitch.

### 17. Blackwall Hitch



Make a round turn (B) on the hook, with end (C) under the standing part. As soon as the load is applied on the standing part (A) it jams its own end and the hitch will then hold.

Used for a temporary hitch to a hook. It will securely carry a heavy load.

### THE LASSO

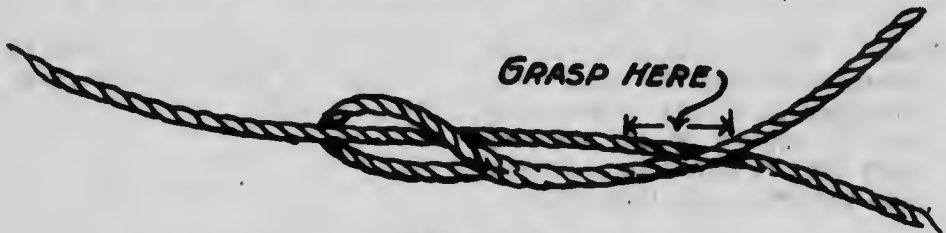
No healthy boy of Scouting age ever witnessed a Wild West show performance without having his imagination stirred by the cowboys' dexterity in handling the lasso and wishing that he too could throw a rope in the same way. Well, here's how its done, boys, and even if you are not privileged to live in Wild West surroundings perhaps you may nevertheless find use for your lasso in roping a wayward farm animal which has otherwise eluded capture. That after all is what it was invented for in the west.

A lasso to be of any use has to be well made and light. The material used in western Canada is known as "Montana hard twist," of inch and a quarter circumference and about fifty feet long. Considerably less than this length will, however, do for a boy's practise. The "eye" of the rope is sometimes made of metal, but more generally the cowboys splice an eye in one end of the rope themselves, or for temporary use tie a bowline to form the loop.

The first important consideration in the use of a lasso is to make sure that it is absolutely free from kinks or twists. To ensure this the rope should first be laid out at full length. The end of the rope remote from the eye is then carefully passed through the eye to form a loop or noose of sufficient size and convenience to catch the object aimed at. When the noose has been made, the remainder of the rope

is coiled up in concentric circles of equal size and held in the left hand, loosely, so that it will run out freely when the noose is thrown. If the operator is standing on the ground the end of the rope will be held firmly, but the spare coils loosely. If mounted it is customary to tie the end of the rope to the pommel of the saddle and to hold the spare coil in the bridle hand.

Keep the noose open as much as possible before raising it above the head. To throw the lasso, grasp the loop or noose with a portion of the remaining rope a few inches behind the



The Lasso

“eye,” as shown in the illustration herewith. Raise the right hand above the head in a circular motion from right to left to give sufficient momentum and by a dexterous movement of the wrist keep it twirling above the head in order to keep it open, as far as possible.

When sufficient momentum has been obtained, throw the loop forward with the right hand at the object aimed at and allow the loose coil in the left hand to run out freely. If the operator is dismounted and the end of the rope has not been made secure, he must make sure to retain a firm hold on the end of the rope with his left hand as well as to allow the spare coil to run out freely.

The method above described is for throwing the ‘rope’ over an object, but by perseverance and practise it is possible to throw the rope low and lasso an animal by one of its legs.

The Scout should also become familiar with the directions for throwing a coiled rope in the form of a life-line, which will be found at page 432. Sailors become very proficient in throwing a line from a boat to the wharf and vice versa.

#### MAKING FIRE WITHOUT MATCHES

Scouts going into camp or on a trip through unsettled country should be careful to carry their matches in a waterproof match-box so as to prevent the risk of their getting wet. At

the same time it is worth while knowing how to make fire, if need be, without matches.

Matches are, after all, an invention of the last century and many Canadian grandparents can remember when they came into general use. Prior to their invention a common method of making a fire was by striking sparks from a flint into a box of dry tinder. The sparks were produced by means of glancing blows from a piece of steel on the hard surface of the flint. The North American Indians, who had no steel, used iron pyrites instead, to strike their sparks, as did also the ancients.

The Indians had other primitive methods of producing fire by friction, among which may be mentioned the following:—

The fire-drill, consisting of a simple spindle twirled between the hands.

The pump-drill, in which the spindle was given momentum by means of a spindle-whorl of wood.

The bow-drill, in which the spindle was operated by a bow, the string of which was twisted once around the spindle.

The fire-plow, in which the end of a stick was rubbed vigorously back and forth in a groove.

The fire-saw, in which one stick was rubbed across another.

#### The Bow-Drill Method

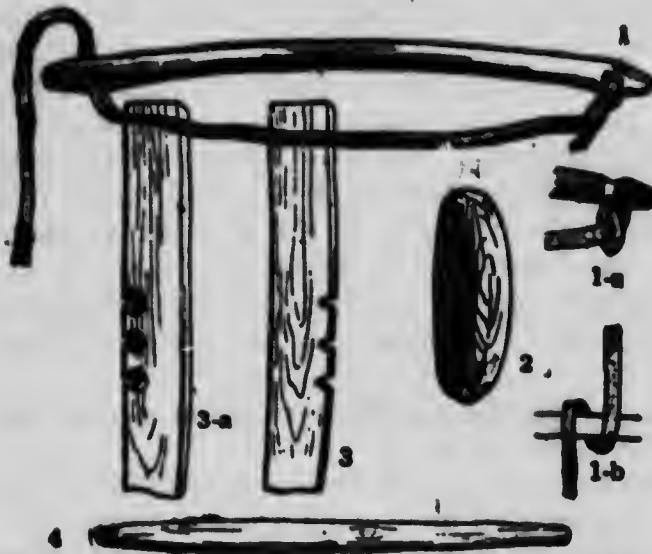
The bow-drill method, still used by many of the Eskimo and some of the northern Indian tribes, is a very interesting way of making fire.

The parts are shown in the illustration herewith and consist of the following: the bow and bowstring, the spindle, the hand rest for the top of the spindle, and the hearth. The bow should be about seventeen inches long and may be whittled out of a strip of wood one and one-eighth inches wide, in such a way as to leave a curve of one-half an inch, a width of five-eighths of an inch and a thickness of one-half an inch. A little extra width may be left at the ends where the holes are bored for the cord.

The bowstring should be of soft leather, about five-sixteenths of an inch wide. One end of the bowstring is slit and fastened to the bow in the manner shown in the illustration. The other end is merely drawn through the bow as shown.

The spindle should be about a foot in length and whittled round, tapering slightly towards both ends from a thickness of three-quarters of an inch at the centre. The hand rest is a

piece of wood about six inches long and just wide enough to hold on top of the spindle. A socket is cut in the rest for the



1. Drill bow; 1-a. Applying the thong; 1-b. position of cord on spindle
2. Hand rest for top of spindle
3. Hearth showing slots; 3-a. Hearth showing pits and slots
4. Spindle of correct form

—By courtesy of the Boy Scouts of America.

top of the spindle to revolve in, or a piece of soap stone may be set into the rest for a socket.

The hearth should be not more than three-quarters of an inch thick and long enough to hold down firmly with one's foot. The hole for the spindle to turn in is shown in the accompanying illustration. The boring, it will be observed, is done close to the edge of the

hearth, a narrow slot being cut from the hole in which the spindle turns to the edge of the hearth so as to allow of the heated or charred dust passing into the punk or other kindling.

The Indians usually prepare their punk or other material for the sparks to drop on from rotten maple or beech thoroughly dry. The Copper Eskimo use dried ptarmigan dung for kindling and the down of the eriophorum seeds, shreds of cedar bark and dried grass. The down of the anemone, or thimble weed, will, however, serve equally well.

The spindle and hearth may be of the same kind of wood. Various woods are used for the purpose but cedar, basswood, pine, balsam and tamarac are as good as any.

The bowstring is given one twist around the spindle and made to revolve the latter by a back and forth sawing motion of the bow. The drill should be run easily at first and a little more pressure put on when you have caught the knack and the spindle has begun to bite. The kindling is, of course, laid

close up to the side of the hearth where the heated dust will fall into it. When the boring has produced a compact bunch of dust you may look for the spark and should be ready to fan the latter up into a blaze. Until the operator becomes



5. The fire drill set up ready for operation  
—By courtesy of the Boy Scouts of America.

proficient it is better to have a second Scout ready to blow the spark gently at the proper moment and to add kindling as required.

The bow-drill outfit may either be made at home and carried along, or it can be very easily made in camp.

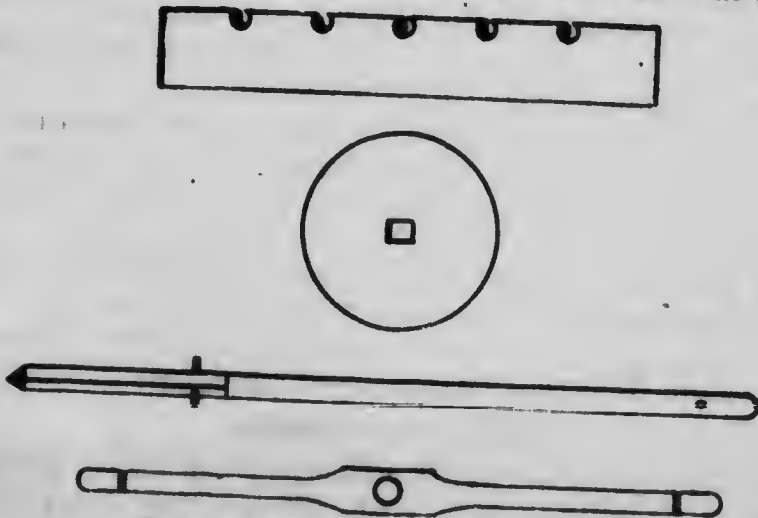
The Indians carried their fire-sticks with them, since to find thoroughly dry and seasoned wood may be almost impossible under certain conditions.

Scouts will find fire making without matches particularly interesting for exhibition purposes.

Mr. Ernest Thompson-Seton has made a fire in this way in thirty-one seconds, but most fellows will do well if they succeed at first in getting their fire going by this plan within five minutes.

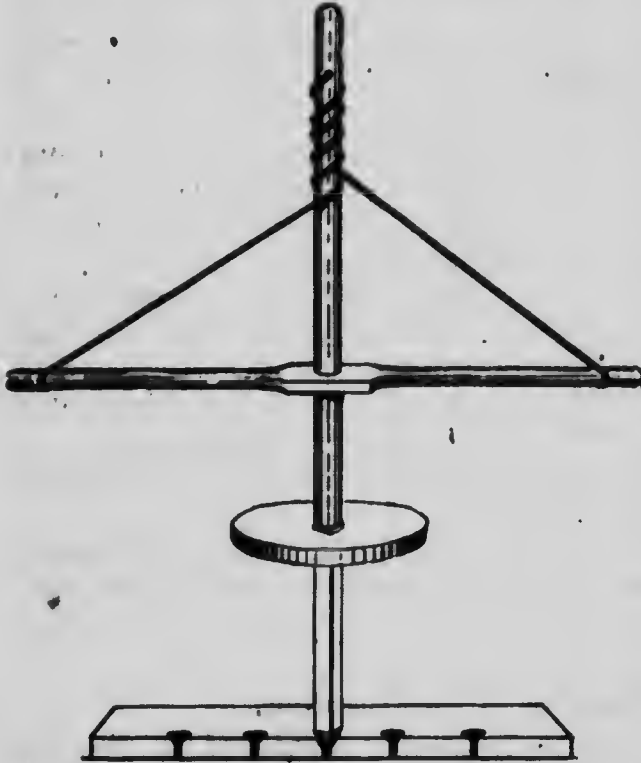
**Other Methods of Fire Lighting.**

The pump-drill was quite commonly employed by the Indians in the production of "new fire" at the New Year Festival.



Parts of pump-drill for fire making

also in the Sun Ceremony. This implement consists of a spindle with a disk of wood; a cross-piece, to the ends of which a slack cord is attached, the centre of the cord being fastened to the top of the spindle, and lastly, a hearth of dry



wood for drilling upon. The drill is operated by giving the cord a few twists around the spindle, then alternately pressing downward and relaxing the pressure, which causes the spindle to revolve rapidly in a small depression at one side of the hearth. A narrow groove at one side of this allows the ignited dust to fall upon some tinder placed below. A socket is sometimes applied to the top of the spindle to increase the pressure.

Pump-drill set up ready for operation.

The fire-plow was in use among the Onondaga Indians, though only rarely employed.

To make fire by the fire-saw method, a fallen ironwood tree is found and a dry spot in it is selected. A stick of the same wood is cut and is rubbed back and forth across the log by two persons.

When the sun is bright it is sometimes possible to light a fire by using the glass of a watch, lens of a camera or field glass. Burning glasses were formerly common articles of trade with the Indians for beaver and other furs.

#### WILD VEGETABLES

Not less than the enjoyment added to camp life by good fishing is the healthfulness and relish derived from the gathering

and use of wild fruits and vegetables. The North American Indians seem to have had little taste for agriculture; yet apart from their use of game, fish, nuts and berries, they made use of many different roots and vegetables which Scouts will find still growing wild in different parts of the Dominion.

Indian corn, or maize, was one of the staple foods of all the native tribes both of Canada and the United States, along with beans and squash. Among the Iroquois these were known as "the three sisters." For sweetening they used boiled maple sap and the saps also of the birch and poplar. Wild honey, no doubt, provided an occasional treat.

The root of the yellow pond lily was dried and made into a sort of flour for bread and soups. More appetizing than this, however, is the root of the Indian cucumber, or black snake-root. This is found nearly everywhere and can be eaten raw with a little salt or vinegar in the same way as garden cucumber, which it very much resembles in flavour. Crinkle-root, or pepper-root, is quite common and can be eaten in the same way.

#### Indian Potatoes

Jerusalem artichokes, or Indian potatoes, are sometimes to be found also, and are very tasty boiled or fried. This plant belongs to the sunflower family and is often met with around Indian settlements or encampments. In western and south-western Ontario another sort of Indian potato (*apios tuberosa*) is often met with in damp or shady situations. This is a coarse vine with a leaf somewhat like that of the ash, having three to nine leaflets and a purplish flower like that of the bean, to which family it belongs. The tubers, which grow quite large, taste like the sweet potato when cooked.

The tubers of Spring Beauty (*claytonia virginica*) are also an Indian food and are used by the Indians of Ontario; while its western relative is quite largely eaten by various British Columbia tribes. Other delicious vegetables found growing wild in various parts of the country are the leek, which is eaten raw like green onions, also the wild garlic. Both of these are close relatives of the garden onion and may also be cooked like greens.

Perhaps the most widely used wild vegetable of the western plains is that which is variously known in these days as Indian bread-root, the Cree or prairie potato, and the prairie turnip, a member of the pea family, which was formerly a staple food

of all the prairie tribes. This plant still grows in abundance throughout the Prairie Provinces and when cooked makes excellent eating.

Among the native vegetables of British Columbia the large lily bulb, known as *lilium columbianum*, is a prime favourite. These are often found weighing as much as a pound. Sunflower root is another favourite dish. Another kind of lily bulb, known as *camass*, is eaten by the Northwestern Indians. Wild onions and carrots and the roots of the white clover are also highly esteemed among these tribes. The roots of the flowering raspberry were formerly picked by the British Columbia tribes when the plants had reached about six inches in height, and were tied in bunches and boiled much in the same way as we treat asparagus, being afterwards served with a butter made from the fat of the salmon.

#### Wild Greens

Among the plants which can be safely recommended for greens, and are cooked in the same way as spinach, are: the common milkweed, also its flower clusters when they first appear; the waste leaf, wood betony, marsh marigold, pigweed, lamb's quarters, field mustard, purslane, dandelion and the fiddle heads or young shoots of several ferns, such as the sensitive fern and the bracken. The latter are particularly fine. All the plants mentioned should be taken when quite young and tender. Milkweed and bracken are classed as poisonous when they have grown older. Marsh marigold is poisonous also when it comes into bloom. Water cress may be eaten raw with salt. Scouts should, however, avoid picking it in any other than clean water. As relishes, one may also use wild peppermint with meat. The wild oxalis (or shamrock) and the sheep sorrel are eaten by Indians and others for their sour flavour.

#### Wild Rice

The Indians were fond of wild rice, which grows abundantly in shallow water in many parts of Canada, and can still be gathered in large quantities in the early fall. Wild rice is not particularly attractive in appearance, but is most appetizing when cooked, either alone or added to soup.

#### Mushrooms

There are a number of species of edible mushrooms in the Canadian woods, but expert guidance is needed to distinguish



them from the poisonous varieties, and cases of poisoning among persons who think they know the safe kinds, but don't are unfortunately all too common. Scouts are accordingly warned that the greatest possible care should be taken in the use of mushrooms as foods.

The black lichen known as "rock tripe," which is very common in the northern woods, though not palatable will help to sustain life.

It may be interesting to note that many Indian tribes eat, or used to eat, the inner bark of certain trees, such as the slippery elm. Some of the more northern tribes still consider it quite a treat to strip the bark off young birches and poplars and scrape up with a knife and eat the sweet sap and soft woody material found on the surface of the tree beneath the bark. The British Columbian Indians do the same with the black or bull pine.

Many other things used by the Indians are rather too strong or medicinal in their effect for general use. An informant well acquainted with Indian foods has, however, informed us that those above mentioned may be eaten with entire safety.

Pictures of a number of the above mentioned edible plants will be found in the section of Chapter III of the present Handbook dealing with Canadian wild flowers and plants.

#### Edible Meats

For their meat supply the native tribes depended in the main on venison (excepting the plains tribes, who used the buffalo) but occasionally used also the flesh of many other wild animals, including the porcupine, raccoon, beaver, skunk, groundhog, muskrat, rabbits, hares, squirrels and mice, some of which are still esteemed as a treat by Canadian woodsmen. In certain provinces the porcupine, indeed, is protected by law on account of its being the only animal in the Canadian woods that a man, in case of necessity, can kill with a club.

Native hunting parties were often compelled to hide their reserve stocks of food in what is known as a "cache" and this, like many other of the red man's customs, has been copied by the white hunters and woodsmen. "Caches" are of many different kinds and considerable ingenuity has to be employed in some cases to keep the food from being discovered and eaten by wild animals. The wolverene, in particular, is gifted with almost fiendish powers of destruction when it gets into a "cache" and is hated among woodsmen on this account. Often

the "cache" of provisions is made in the ground by digging a hole for the purpose and wrapping what is to be stored in



A "Cache."

bark or rawhide. The mouth of the "cache" is then covered over with rocks, brush, earth or leaves, according to circumstances. Sometimes a fire is built on the spot to hide the disturbance of the surface. In other cases the "cache" is placed in trees. To make one of these

"caches" peel a pole strong enough to carry the weight, and place the ends in the forks of two trees about fifteen feet apart. The trees should not be large enough for an animal to climb, nor yet so small as to be easily shaken. The parcel should then be wrapped in canvas or oilskin and suspended high enough above the ground so that it cannot be reached. A small island in a river or lake is a good place for a "cache" as there are not likely to be any animals to molest it.

#### NATIVE COOKING METHODS

When the white man set foot in Canada the Indians had no iron or other metal cooking vessels; yet they had their own methods of boiling, baking and roasting, some of which can easily be tried out with interest in the Scout camp.

Bark, wood, skin, earthenware and stone were all used by the red man in making pots or vessels for various forms of cooking. Of these, the earthenware and the stone pot seem to have been the best, as they could be placed directly over the fire like metal pots. The Iroquois used bark pots also for placing directly over the fire in this way, the liquid inside preventing the vessel from burning. Some care, however, is necessary to prevent the bark from burning at the edges. Many of the Eskimo still do their cooking in pots made from single blocks of soapstone. These are, however, weighty and difficult of manufacture.

A common method of cooking used by the Canadian Indians was that of stone boiling. For this purpose, large pebbles were heated in the fire and then dropped into the pot with wooden tongs. The stones were taken out from time to time and re-heated, this process being kept up until the pot was boiled and the food sufficiently cooked. Other tribes cooked starchy roots and tasty leaves in the same way with their meat. Wild rice and Indian corn were also served in the boiled form.

Doubtless, the aborigines toasted cobs of corn at the camp fire, as is often done in camp nowadays. Jolly good eating it makes too when there is salt and pepper and plenty of melted butter handy.

Curiously, although there were various deposits of salt in the country, the natives never used this article of diet. The Eskimos, indeed, still fight shy of salt and explorers have found that uninvited native guests in the far north are easily driven away by salting all the food.

Meat can be readily cooked either by toasting it on a pointed stick in the case of small pieces, or in the case of larger cuts by broiling or roasting before the fire. For fuller reference to various forms of camp cooking see p. 346.

The native tribes of British Columbia sometimes cooked their vegetables by a steaming process in an underground oven. This method is one which Scouts too may be interested in trying. A hole was first dug in the ground and partly filled with heated stones. Over these was laid a layer of grass or aromatic leaves on which the vegetables were placed for cooking, and covered in turn with more grass or leaves. The rest of the pit was then filled in with earth, a small opening being left, however, in the centre. Water was thereupon poured into the opening, which was converted into steam by the heat of the stones, the oven being opened when it had cooled off.

Fish and game may be cooked in this way.

#### AXEMANSHIP

The backwoodsman depends almost as much on his axe as he does on his rifle. With little else in addition to these two implements our forefathers attacked the forests of our country and subdued them for civilization. We Scouts will do well to imitate these early pioneers by becoming familiar with the use of the axe, at least, to the extent of knowing how to use it for chopping down small trees and branches.

The way to cut down a tree is first to chop out a notch near the bottom on the side to which you want the tree to fall; then go around to the other side and chop on the opposite side of the trunk a few inches above the first one until the tree topples over. If there is nothing in the way, have it fall on the side to which it is naturally inclined. Do not try to fell a tree against the wind if it is blowing very strongly. Be sure to clear away all underbrush within reach of your ax before starting to fall a tree. Never stand behind a tree when it is falling as it is liable to kick back. Neglect of any of these points may result in very serious injury.

It is a matter of practise to become a good axeman and you have to be very careful at first lest you miss the tree and injure your leg or foot. Practise until you can hit the same spot again and again. Beginners usually over-exert themselves and are soon short of wind. A good chopper chops slowly but regularly and puts very little more effort into striking than he does into lifting his axe. It is better to begin on comparatively small trees until you have got the knack. If you are cutting small trees to drag into camp, fell them in the opposite direction from camp so that they can be dragged out by the butts, and the branches will not catch into brush and other obstacles along the way.

A very common accident in the woods is a broken axe handle and until a new one is made and fitted, the woodsman or camper is apt to find himself more or less seriously handicapped. Sometimes it is difficult to remove the stub of the old handle and it may even become necessary to burn it out. To do this without drawing the temper of the steel, the blade of the axe should first be driven into the ground up to the eye, care being taken that the earth is free from stones or small pebbles. A fire may then be built all around the ax-head and kept going until the obstruction is burned away. In making a new handle it is not necessary to have a crooked one like those sold in the stores as a straight one will do just as well. In fact, thousands of expert woodsmen prefer a straight handle. Hardwood is always used in making axe-handles, hickory being the most common. A good way of driving the sap out of green wood and hardening the fibre is by roasting it in hot ashes or over the camp fire. When the wood has cooled off it gets very stiff as if it had been seasoned in the regular way. Always be sure that the head of the axe is firmly attached to the handle, and wedged to prevent it becoming loose.

A woodsman's or camper's ax, to be of use, must be sharp. If possible it should be sharpened on a grindstone. In doing so remember, however, to use plenty of water so as not to overheat the steel and thus draw the temper. The average "grinder" in the city will do it quickly on an emery wheel but will ruin the edge. After grinding, whet off the wire edge with a stone. A file and whetstone should be carried for touching up the edge of the ax when it is not possible to get the use of a grindstone. A leather sheath should be used to cover the ax-head when being carried. When not in use stick the ax in the top of a stump, in a log, or in the ground. Do not leave it lying around or someone may stub his foot against the edge and get a bad cut.

Always get permission before attempting any tree felling, because only in the more remote parts of Canada will it be possible to cut timber without trespassing on private property.

#### BRIDGE BUILDING

There are many ways of making bridges. In the army they

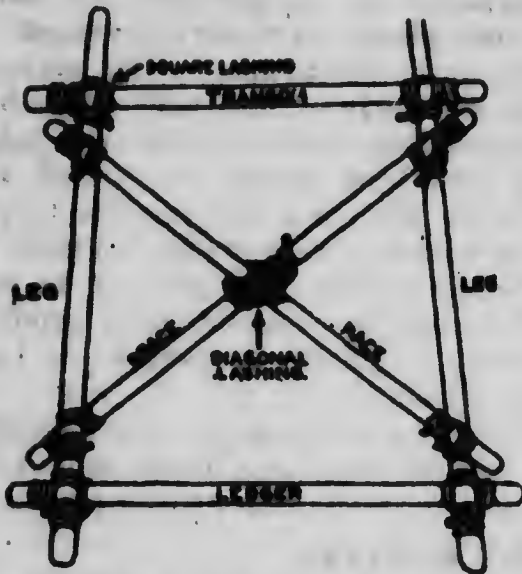


Rope bridge

are generally made of poles lashed together. In India, in the Himalaya mountains, the natives make bridges out of three ropes stretched across the river and connected together every few yards by V-shaped sticks, so that one rope forms the footpath and the other two make the handrail on each side. They are jumpy kind of bridges to walk across, but they take you over; and they are easily made.

The simplest way for bridging a narrow, deep stream is to fell a tree, or two trees side by side, on the bank, so that they fall across the stream. With an adze you then flatten the top side; put up a handrail and there you have a very good bridge.

Rafts, too, can be used. You build your raft alongside the bank, in the water if the river is shallow; on the bank if deep. When it is finished you hold on to the down-stream end, push the other out from the bank, and let the stream carry it down into position.



A two-legged trestle used in constructing the bridge shown below

A bridge which Scouts can build is the single-lock bridge shown below. This, as you will see, is constructed with the aid of two trestles, and these are lashed together in the manner shown herewith.

For fuller instructions on bridge building see the bibliography at the end of this book under "Pioneer," p. 631.



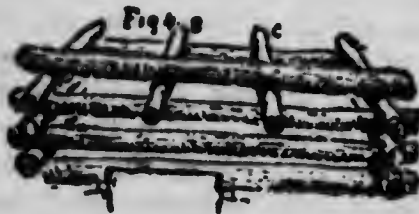
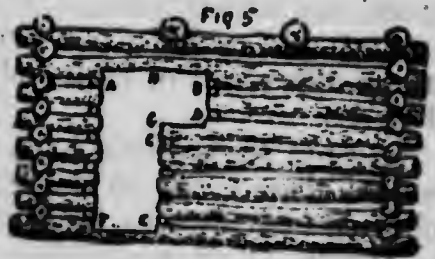
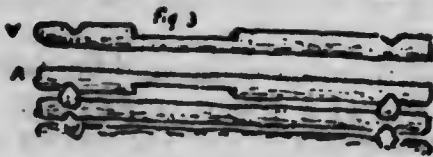
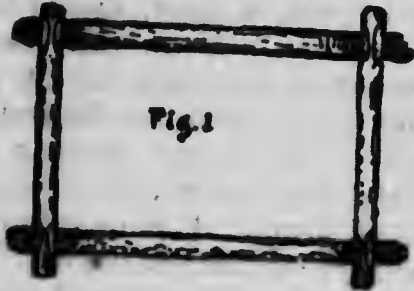
A single-lock bridge

#### BUILDING A LOG CABIN\*

There are as many different kinds of log cabins as of any other architecture. It is best to begin with the simplest. The tools needed are a sharp ax, a crosscut saw, an inch auger, and a spade. It is possible to get along with nothing but an ax (many settlers had no other tool), but the spade, saw, and auger save much work.

\*By kind permission of Mr. E. T. Seton.

For the site select a high, dry place, in or near the woods, and close to the drinking-water. It should be a sunny place, and with a view, preferably one facing south or east. Clear



off and level the ground. Then bring your logs. These are more picturesque with the bark left on, but last longer peeled. Eight feet by twelve feet outside makes a good cabin for three or four boys.

Cut and carry about twelve logs, each ten feet long; and twelve more, each fourteen feet long. The logs should be at least six inches through. Soft wood is preferable, as it is easier to handle; the four ground logs or sills, at least, should be of cedar, chestnut, or other wood that does not rot. Lay two of the fourteen-foot logs on the ground, at the places for the long sides, and seven feet apart. Then across them, at the end, lay two short ones, eleven feet apart. This leaves about a foot projecting from each log. Roll the last two into their resting-places, and flatten them till they set firmly. It is of prime importance that each log rest immovably on the one below. Now cut the upper part of each end log, to an edge over each corner. (Fig. 1.)

Next put on two long logs, roll them onto the middle, taking care to change off, so the big end at a given corner may be followed next time by the small end and insure the corner rising evenly. Roll one of these large logs close to where it is to be placed, then cut on its upper surface at each end a notch corresponding with the ridge on the log it is to ride on. When ready, half a roll drops it into place. The logs should be one to three inches above the one under it, and should not touch except at the ends. Repeat the process now with the other sides, then the two ends, etc., *always keeping the line of the corner plumb*. As the walls rise, it will be found necessary to *skid* the larger logs; that is, roll them up on two long logs, or skids, leaning against the wall. (Fig. 2.)

When the logs are in place to the height of four and a half feet from the ground, it is time to decide where the door and window are to be; and at that place, while the next long log is lying on top, bottom up, cut out a piece four feet long and four inches deep. Roll this log into place. (Fig. 3.) One more log above this, or certainly two, will make your shanty high enough for boys. Put on final end logs, then two others across the shanty. (Fig. 4.) Roll up the biggest, strongest log of all for the ridge (sometimes two are used side by side); it should lie along the middle of the four cross-pieces shown in Fig. 4.

The two cross-logs, *B* and *C*, and the ridge log should be very strong, as the roof is heavy.

Now we are ready to cut the doorway and window.

First, drive in blocks of wood between each of the logs, all the way down from *A* to the ground, and from *B* down to *D*, and *C*. to *E*. (Fig. 5.) Saw down now from *A* half-way



through the ground log *F*. Then from *B* down to half-way through the log *D*; now continue from *G*, cutting down to half through the ground log. Use the ax to split out the upper half of the ground log between the saw-cuts and also the upper half of the log *D*.

Hew a flat piece of soft wood, five or six inches wide, about two inches thick, and as long as the height of this doorway. Set it up against the ends of the logs *A* to *F*. Bore an auger hole through it into the end of each log (these holes must not be in line lest they split the jamb), including the top and bottom ones, and drive into each a pin of oak. This holds all safely. Do the same on the other side, *H* to *E*, and put a small one down *B*, *D*, which is the side of the window.

Now we are ready to finish the roof. Use the ax to level off the corners of the four cross-logs, *A* and *B*. (Fig. 6.) Then get a lot of strong poles, about five feet long, and lay them close together along the two sides of the roof till it is covered with poles; putting a very heavy one, or small log, on the outer edge of each, and fastening it down with a pin into the ridge log. Cut two long poles and lay one on each of the lower ends of the roof poles, as at *A*, *B*, and *C* (Fig. 7), pinning them to the side logs.

Cover this roof with a foot of hay or straw or grass, and cover that again evenly with about four inches of stiff clay. Pack this down. It will soon squeeze all that foot of straw down to little more than one inch, and will make a warm and water-tight roof. As the clay is very heavy, it is wise, before going inside, to test the roof by jumping on it. If it gives too much, it will be well to add a center prop.

Now for the door: hew out planks; two should be enough. Fasten these together with two cross-pieces and one angle-piece, using oak pegs instead of nails, if you wish to be truly primitive. For these the holes should be bored part way with a gimlet, and a peg used larger than the hole. The lower end of the back plank is left projecting in a point. (Fig. 8.) This point fits into a hole pecked with a point or bored with an auger into the door-sill.

Bore another hole near the top of the door (*A*), and a corresponding one through the door-jamb between two logs. Set the door in place. A strip of rawhide leather, a limber willow branch, or a strip of hickory put through the auger hole of the door and wedged into the hole in the jamb, makes a truly wild-

wood hinge. A peg in the front jamb prevents the door going too far out, and a string and peg inside answer for a latch.

The window opening may be closed with a glass sash, with a piece of muslin, or with the rawhide of an animal, scraped clear of hair and stretched on a frame.

It now remains to chink and plaster the place.

Chinking is best done from the inside. Long, triangular strips and blocks of wood are driven in between the logs and fastened there with oak pins driven into the lower log till nothing but small crannies remain. Some cabins are finished with moss plugged into all the crannies, but mud worked into plaster does better.

It should be put on the outside first, and afterward finished



The "Royal Shanty," Ottawa

Photo by Pittaway, Ottawa.

from the inside. It is best done really with two plasterers working together, one inside and one out.

This completes the shanty, but a bunk and fireplace are usually added.

The fireplace may be in one corner, or in the middle of the end. It is easiest to make in the former.

Across the corner, peg three angle braces, each about three feet long. These are to prevent the chimney falling forward.

Now begin to build with stone, using mud as mortar, a fireplace this shape. (Fig. 9.) Make the opening about eighteen inches across; carry it up two feet high, drawing it in a little,

then lay a long stone across the front, after which build up the flue behind the corner braces right up to the roof. The top corner-piece carries the rafter that may be cut off to let the flue out. Build the chimney up outside as high as the highest part of the ridge.

But the ideal fireplace is made with the chimney on the *outside* of the cabin, at the middle of the end farthest from the door. For this you must cut a hole in the end log, like a big, low window, pegging a jamb on the ends as before.



Interior view of Royal Shanty, Ottawa

Photo by Pittaway, Ottawa.

With stones and mud you now build a fireplace inside the shanty, with the big chimney carried up outside, always taking care that there are several inches of mud or stone between the fire and any of the logs.

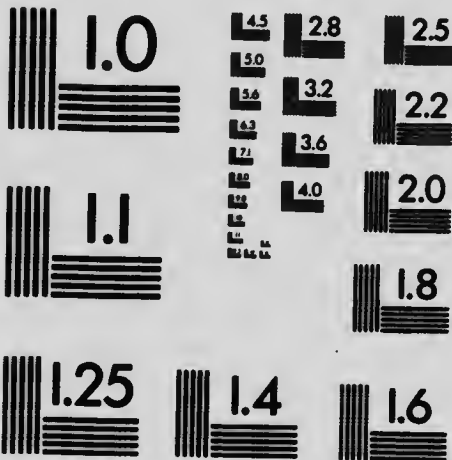
In country where stone cannot be found, the fireplace is often built of mud, sustained by an outside cribbing of logs.

If the flue is of a fair size, that is, say one-quarter the size of the fireplace opening, it will be sure to draw.



# MICROCOPY RESOLUTION TEST CHART

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The bunk should be made before the chinks are plastered, as the hammering is apt to loosen the mud.

Cut eight or ten poles a foot longer than you need the bunk; cut the end of each into a flat board and drive these between the long logs at the right height and place for the bunk, supporting the other end on a cross-piece from a post to the wall. Put a very big pole on the outer side, and all is ready for the bed; most woodsmen make this of small fir boughs.

There are two other well-known ways of cornering the logs—one is simply flattening the logs where they touch. This, as well as the first one, is known in the backwoods of Canada as *hog-pen finish*. The really skilful woodsmen of the North always *dovetail* the corners and saw them flush: (Fig. 10).

Sometimes it is desirable to make a higher gable than that which one ridge log can make. Then it is made thus: (Fig. 11).

This is as much slope as a clay roof should have; with any more, the clay would wash off.

This is one of the simplest ways to build a log cabin, but it illustrates all the main principles of log building. Shingle roofs and gables, broad piazzas outside, and modern fitting inside, are often added nowadays in summer camps, but it must be clear that the more towny you make the cabin, the less woodsy it is, and less likely to be the complete rest and change that is desired.

Scouts may be interested in the accompanying illustration of the "Royal Shanty," as it is called, in Rockcliffe Park, Ottawa, which was erected on the occasion of the visit of King George V to the Canadian Capital in 1901. The roof of the shanty is made of split logs, hollowed out in the form of what are known as "scoops." Most of the shanties in the Canadian lumber woods were formerly roofed in this way; nowadays, ready roofing is preferred. The interior illustration shows the plan of cooking on raised ground in the centre of the shanty, the smoke escaping through a chimney built of wooden cribwork. The cooking implements shown in the illustration are typical of those employed in many Canadian lumber camps. Beans are baked shanty style in the hot ashes of the cambuse fire overnight. (See p. 350.)

#### A Sod Hut

Scouts who attempt the construction of a sod hut will find the work interesting and not too difficult. The finished hut

may be used as a troop rendezvous. The walls should be about sixteen inches thick, made up of strips of sod with the joints overlapping, like brick. The ridge pole should be ten or twelve inches in diameter, and should rest on two heavy upright posts with forked tops. The rafters require to be strong, as the roof when finished will be quite heavy. Over the rafters a covering should be laid of brush, then a layer of grass, and on top a layer of sods to form the roof. If the brush for the roof be cut when green the leaves will not drop off, and if brush from poplar, willow, cedar or other evergreen be used, it will keep the inside fragrant. The floor should be about a foot below the level of the ground and be covered with clean sand. A rough door and windows should be placed in the wall. When furnished with a stove, benches, table, pictures, flags and so on, a hut of this order makes very comfortable and cozy quarters.

#### A Straw Hut

A very satisfactory hut may be constructed of straw by using chicken wire netting as forms for the walls. These forms should be about ten or twelve inches apart and strengthened by stakes driven into the ground at intervals of three or four feet and extending to the top of the walls to assist in supporting the roof. The walls should then be packed tightly with straw, leaving openings for a door and window. The roof should be thatched with straw on a framework of poles and it will be an improvement if the framework is covered with a layer of the wire netting. Stakes of sufficient strength should be placed at each of the four corners as supports for the roof.

#### Temporary Shelters

Serviceable shelters or huts for temporary use are referred to on page 375 of Chapter IV.

#### Snow Houses

On the Arctic coast of Canada some of the Eskimo tribes still live in snow houses, whilst others on their hunting trips have recourse to this form of shelter. In northern Labrador white men travelling on midwinter trips take along native guides to build snow house shelters for protection against the storms that might otherwise overwhelm them. Very few people in the settled part of Canada have ever seen one of these



Eskimo "iglu"

"iglus," as they are called, and in southern Labrador this ancient art has so nearly died out that the missionaries hold snow-building contests among the natives to keep it alive. Boy Scouts will, however, be interested in the manner of constructing snow

houses in accordance with the Eskimo style and on a midwinter week-end outing may enjoy trying out this novel form of construction.

For building purposes the Eskimo prefer "living snow," that is snow which will adhere when the blocks are placed together. Such snow is found in a newly made drift that has begun to harden. Across the surface of the snowdrift the native cuts an oblong trench the length of which equals the diameter of the house. It will average five feet in length, two or three feet in width and twenty inches in depth. From the face of this trench he then cuts domino-shape blocks of snow, about thirty inches long, twenty inches wide, and from four to six inches thick. These are then placed on edge and end to end in a circle, enclosing the desired ground area. They are trimmed in semi-circular shape with the inner edge slightly concave so that when set up they lean inward. The Eskimo snow-knife is flat and double edged in form.

The first line of blocks form the first tier of the snow-house, and material for the rest of the house is found within the ever lessening circle, so that the builder works within his ascending abode, cutting out his material as he builds. One man only is required for the operation in Labrador, but where two Eskimos work together one is engaged in stamping the snow around the tiers, and filling in the cracks between the blocks with soft snow. Sometimes one man cuts the blocks and the other builds, as in Baffin Island, but one man is able to construct a house alone.

When the first round of blocks has been laid, a cut is made diagonally in the tier, and the next round started in a spiral which winds in a decreasing curve to the top. The weight of the ascending blocks wedges those behind tightly together, so



that the house really becomes more solid as each block is placed.

The Eskimos always build "as the sun goes," i.e., from east to west, smacking each block tightly into place with a vigorous thrust of the arm. When the top is reached the irregular opening left is closed with the keystone block which is cut out to fit it exactly. The keystone is lifted through the top from the inside and by reason of the outer edges being wider than the inner it fits snugly into place. A smaller lean-to, adjoining the house at the door, is built for the dogs.

Eskimo families living in the grander style join two or three snow houses together by tunnels, so that one serves as a living room, another, spread with polar bear skins, as a bed room, and a third as a store house.

Old missionary accounts speak of snow houses sixteen feet high, and seventy feet across, in which the Labrador Eskimo in their heathen days celebrated their winter festivals. Scouts trying out this form of midwinter construction will, however, be wise in limiting their initial efforts to houses of not more than ten feet diameter and six feet in height.

A block of clear ice in the side of the "iglu" will serve as a window and the interior may be heated, if so desired. In some of these Eskimo dwellings the temperature ranges from twenty below zero at the ground level to above freezing point near the roof. The explorer, Stefansson, used, however, a sheet-iron stove in the houses that he built on the Arctic coast, with which he was able to maintain a temperature of moderate comfort for a night or two. A wood fire in a snow house will, however, melt away the wall near the stove in a short time, and as soon as a little hole is made the hot air rushing out quickly enlarges the aperture. "I longed," Stefansson writes, "for a dressing gown and slippers, but one cannot burden his sled with such luxuries."

Sometimes the entrance into the house is made through a tunnel; in other cases a block of snow is leaned against the doorway to keep out the wind.

#### METHODS OF TRAPPING\*

There is something which is always fascinating in pitting

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\*The notes herewith on Methods of Trapping as well as the notes on Birch-Bark and its Uses, Indian Basketry and Indian Bows and Arrows, have been contributed, together with the accompanying illustrations, by Mr. F. W. Waugh of the Anthropological Division, Victoria Memorial Museum, Ottawa.

one's wits against those of the wily creatures of the forest. The Boy Scout training properly teaches the conservation of our wild life from wanton destruction and that only those animals should be taken which are either injurious or necessary for food. Where traps are set they should be visited often enough to prevent unnecessary suffering by any creatures caught therein. With this in mind, an acquaintance with various methods of trapping adds greatly to one's resourcefulness on the trail and in camp. A further caution which should always be observed is to read the game laws of one's own province carefully so as to learn which animals may lawfully be taken and at what seasons.

Our North American Indians are past-masters in this art and succeed quite frequently without other materials than bark and wood in trapping the very wariest animals. Indian trappers declare the fox to be the most difficult animal to catch. The steel trap is frequently used for taking them, but has to be carefully deodorized and the bait must often be exposed for some time before the trap is finally placed. It will be better, therefore, to make a beginning on something less difficult of capture.

One of the easiest animals to take is the hare, which is snared in its winter paths, or pads, in the snow. The snare is merely a running loop of fine brass or copper wire, the loop being made just large enough for the animal's head to go through. It is then attached at one end to a sapling and suspended a couple of inches above the surface of the snow and directly in the hare's pad. The snare usually requires to be



Rabbit snares

steadied by means of a twig placed on one or both sides and stuck in the snow. A sapling is sometimes bent over and a string with a small peg attached to it tied to the end, the peg

being placed under a projecting root or else a hooked peg driven in the ground. The peg is so arranged that when the hare is caught in the snare, which is also attached to the bent-over sapling, its struggles loosen the peg and it will be suspended in mid-air where it cannot escape and where prowling animals are not so likely to get at it. Two common Indian forms of rabbit snares are shown in the illustration herewith.

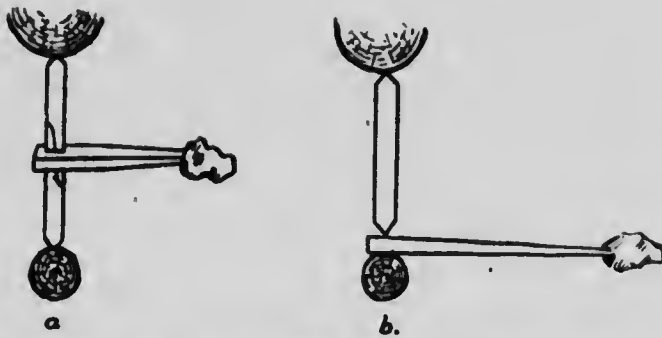
### Deadfalls

Another common Indian trap is the deadfall, either baited or unbaited. In the latter case a house of stakes, roofed over with brush, is built for the bait. The unbaited deadfall, which trips with a small stick placed crosswise, on which the animal steps, is set in runways or paths made by the animal it is desired to take. In either kind of deadfall the essential feature is a heavy log placed between two pairs of guiding stakes (see illustration), and usually weighted with other logs laid with their ends upon it. In the unbaited deadfall, shown herewith, the stick running across horizontally near the bottom, when stepped upon, releases the end of the vertical stick over the opposite end of which is placed the loop of bark or cord which holds up the weighted log. This allows the latter to drop upon the animal as it attempts to go through. The lower horizontal stick is not tied, but is held in place by the outward pressure exerted upon it by the end of the vertical stick.



Indian deadfall

A couple of methods of supporting the weighted log in a baited deadfall are illustrated herewith. The first, marked (a), is an upright stick in two pieces, which are held together by a notched stick holding the bait. When the latter is touched



Methods of setting Indian deadfalls

the stick holding it slips off the upright and allows it to collapse. The second, marked (b), consists of an upright sharpened at each end to a sort of wedge-like point, which makes it slip

very easily when the bait-stick is touched.

The deadfall is most frequently used for such animals as the bear, lynx, fisher, wolverene, marten, mink, muskrat and skunk. The larger the animal, the larger the logs which are used in constructing the deadfall. Brush is piled at the sides to prevent the animal from going round the trap.

The question of bait for baited traps is an important one. A rabbit or hare is attracted by almost any kind of vegetables; a muskrat by the same, or by an apple. A skunk is partial to a fowl's head, a bird, or a piece of meat; a mink or marten to fish, birds or mice. Deadfalls for bear are baited with meat of some kind, also fish or honey; or the body of a partridge or hare.

#### BIRCH-BARK AND ITS USES

Few materials found in the woods and utilized by the Indians are capable of more numerous uses than birch-bark. This is very widely found throughout North America, northward to the Arctic and southward to Pennsylvania and Iowa, though not equally so in all localities. The Iroquois or Six Nations, some of whom still live in New York State and Southern Ontario found elm bark much more abundant and made canoes and household utensils of the latter, but were delighted to trade corn and other products for the light and beautiful birch-bark canoes made by the Algonkian tribes farther north.

The white bark of the white or canoe birch is removed from the tree most easily in the latter part of June or in July, having a tendency to stick at other times. The tree is girdled in two places, a vertical cut being made between the two circular cuts, and the bark pried off carefully. The Indians sometimes suc-

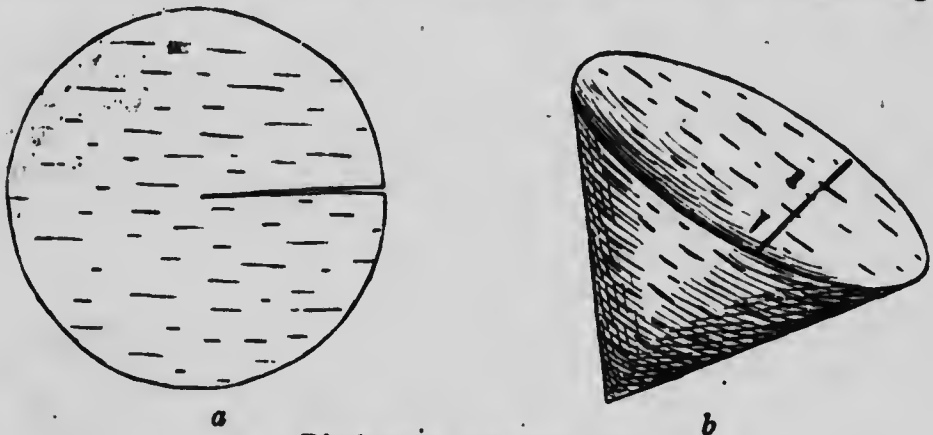
ceed in getting a sheet fifteen or sixteen feet long, thus forming a bottom for the canoe in one piece. Generally, however, two pieces have to be taken. The canoes are sewn with spruce root, which is pulled up in long pieces in the woods, split into slender strips, soaked to make them flexible, and used for sewing by punching holes in the bark with an awl.

The last step in canoe-making is to cover the seams carefully with spruce gum which has been thickened by boiling, and sometimes blackened by adding powdered charcoal.

The sewing and gumming are here mentioned since exactly the same materials are used in the making of birch-bark boxes and trays. If the latter are not intended to hold liquids, the gumming may, however, be left out. The tops of the best made baskets are strengthened by sewing around them hoops made of the slender branches of various shrubs.

#### Birch-Bark Drinking Cup

One of the easiest birch-bark articles to make is a drinking cup. This requires a circular piece of bark, which should not be too thick and which is cut from the centre to the outer edge.



Birch-bark drinking cup

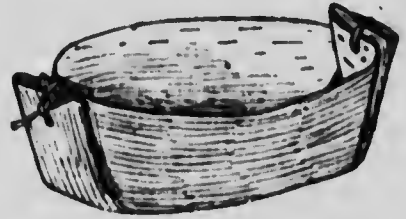
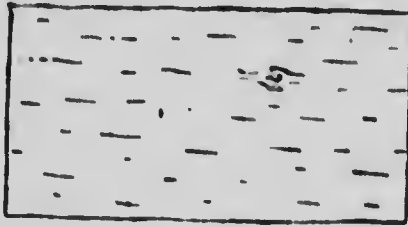
The edges of the straight cut are then folded one over the other and pinned in place with a thorn or wooden pin.

A dish for eating or holding any kind of food, one which is perfectly water tight, can readily be made from a fairly thick sheet of rectangular form. A good size would be eighteen inches by twelve inches.

#### Birch-Bark Dishes

In making this dish you take hold of the two corners at one end. These are creased inward and crossed at the upper ends

(see illustration showing inside of dish). This leaves, as will be seen from the accompanying illustration, a broad flat fold on the outside. This broad fold and the tips of the inside

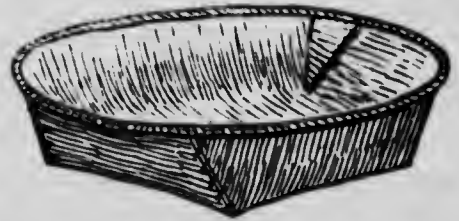
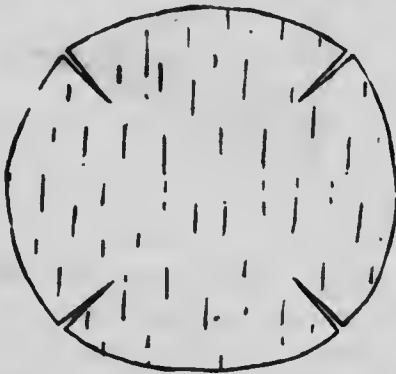


a Water-tight dishes of birch-bark b

crossed folds are all pierced with a single hole through which a piece of basswood bark or cord is passed and tied. The dish is, therefore, made without really cutting the bark at all, but only folding the ends and tying them. Scouts desirous of making this and other forms of birch-bark vessels will find it helpful to make them first in paper.

By changing the dimensions of the sheet of birch-bark dishes may be made of different shapes.

A very neat little tray or dish can be made by cutting a piece of birch-bark circularly and making a straight cut towards the centre in four places. The cuts should not be more than a couple of inches deep, as shown in the accompanying drawing.



a Birch-bark dish or tray b

The edges of these are folded over, like those of the drinking cup and the outer edge in each case sewn down with bark or cord. The top is then bound with a couple of thin hoops made

from split branches and sewn over and over, as shown in the illustration. A slender stick is sewn under the stitches, both inside and out at the corners to prevent their pulling through. A very good bark for sewing, if spruce root cannot be easily got, is the inner bark of young basswoods.

Besides the many kinds of birch-bark boxes and baskets made by the Indians we must not forget the use made of birch-bark for covering wigwams. The word wigwam itself, in fact, means a birch-bark house. This sort of shelter was, and is still used by a number of our northern Algonkian bands. The framework of the conical wigwam is merely a stack of slender poles evenly spaced, and with a slightly wider space for the doorway. Sheets of birch-bark are fitted around this framework and are held in place by other poles laid against the outside. The floor is covered with spruce branches, completing a very comfortable summer residence. In some localities the Indians used to sell birch-bark sheets to the whites for shingles.

Uses for birch-bark which will be appreciated by campers are for kindling a quick fire and for torches. The latter are used by a number of Indian tribes and are usually made by simply rolling up a piece of the bark. Papoose cradle-boards for babies are made of it by some tribes. Others have employed it even for smoking tubes or pipes.

Before leaving bark basketry, it should be noted that other kinds of bark, besides that of the birch, may also be employed. The bark of young pines is often used for rough trays or baskets; also basswood and buttonwood bark. The best bark after that of the birch is no doubt that of the elm. This is cut from the tree in the usual way, shaved a little on the outside to smooth away the roughness, soaked in water to soften it, then bent into shape and sewn, usually with a hoop around the top to hold it in shape. Well-made dishes of this kind are very handsome as well as substantial.

A caution to be rigidly observed by all Scouts is not to mutilate trees unnecessarily in removing the bark; *also not to destroy the beauty of our woods in the neighbourhood of towns and cities, or to take bark from any tree without permission.*

#### INDIAN BASKETRY

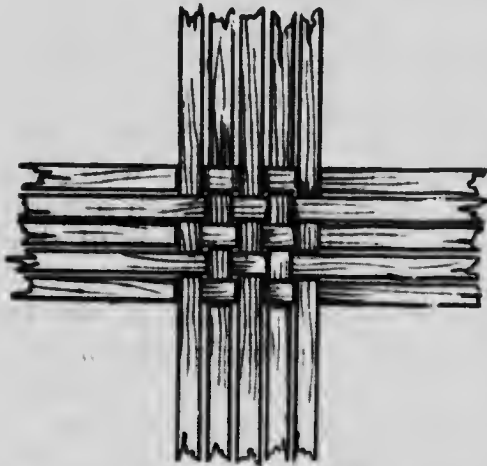
The adaptability of the Indian to his forest surroundings and his method of utilizing the materials found there is very well illustrated by his basketry. He did not always utilize all

the materials capable of being used, since he had his own traditional ideas on the subject, but he did make use of those materials which best suited his purpose and which were most convenient as well as most useful.

Among our eastern woodland Indians the splint basket is probably the most familiar. The kinds made for sale are generally modelled after European baskets, but the Indians had quite a number of shapes of their own, including the pack basket (carried on the back with a tump line), the basket for washing the hulls off corn after it has been boiled with wood ashes, the basket-sieve for cornmeal, the flat evaporating basket for drying green corn and berries, and the small berry-picking baskets which are carried at the belt.

The best material for making splint baskets is black ash, although shagbark hickory, soft or red maple, birch and red oak are all used when ash is not to be found. A fairly good substitute for splints is the bast or inner bark of young basswood, cut into flat, even strips. The splints for basket-making are split with a knife into the proper thickness and width, smoothed by drawing them under a knife blade and soaked to make them flexible. A number are then cut into the length required for the bottom and two sides of a basket, with a couple of inches added for turning over at the top.

#### Weaving Splint Baskets



Method of weaving splint basket

The first step in weaving a basket of simple criss-cross, or checker weave, is to lay the splints on a table or other flat surface and weave a square or oblong of the size required for the bottom of the basket, leaving enough of the splints projecting on each side to turn up for the sides. The latter are given a bend at right angles to the bottom and the weaving continued. When the sides have been made the right height, the ends are turned over and tucked under one



of the horizontal pieces on the inside. A couple of slender hoops to fit the top of the basket are then bound around the top inside and out, the binding being done with a slender piece of splint (well soaked), which is bound round and round the hoops, so as to catch the last horizontal splint at the edge of the basket. Last of all, a handle is whittled out, bent by soaking, the ends sharpened a little and made with a projecting ledge or notch so that they will not pull out after they have been inserted between the hoops at the top. Examining a ready-made Indian basket will make the directions clearer.

The splints for basket-making are obtained by felling a young tree of one of the species mentioned, about six to eight inches in diameter, cutting it to a suitable length, and loosening the annual layers or flakes of wood by pounding carefully and thoroughly up and down its length with the back of an ax. The layers will then strip off easily by starting them at one end with a knife.



Splint basket

Cedar inner bark is another fairly good basketry material. This is employed quite frequently by the Indians of British Columbia, who also make beautiful baskets from spruce root. The strands of spruce root are made as described for canoe and birch-bark basket-making. The rougher portions are used to make the coils which form the foundation or framework of the basket, while the smooth strips are used, like raffia fibre, in binding or sewing the coils together, the smooth surface of the sewing or binding strip being kept outward. The method is exactly the same as in raffia work. An awl is used to make a hole for the sewing or binding material. Pack baskets, berry-picking baskets and storage baskets are all made in this way, the result being a very beautiful and durable article.

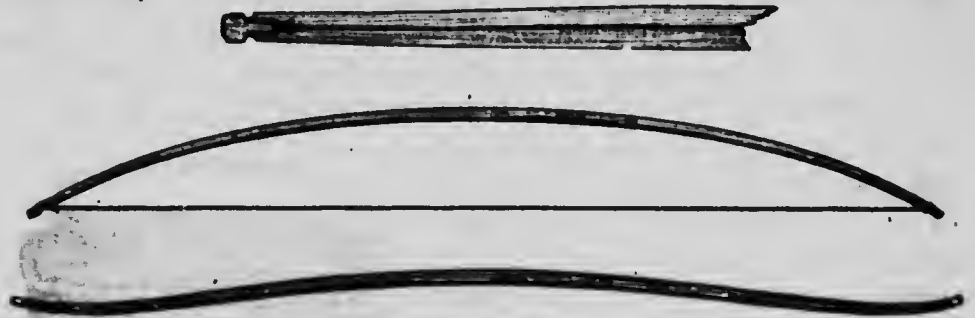
Many of the baskets just described will hold water.

### INDIAN BOWS AND ARCHERY

No Scout's training is complete unless he knows something about bows and arrows, how to make them, and their use.

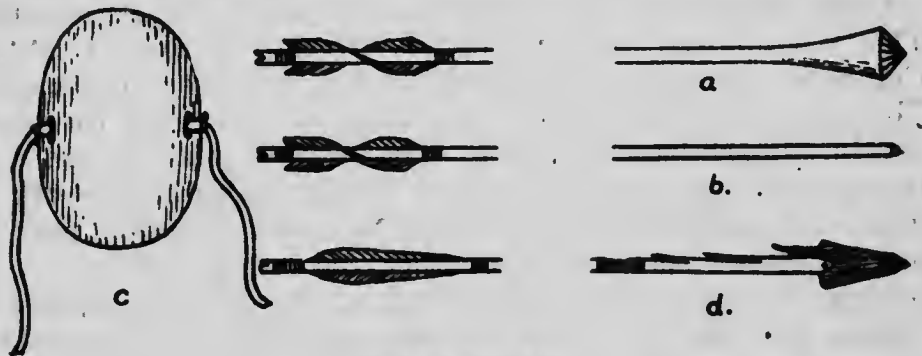
A number of our native tribes made excellent bows and arrows, although the more isolated bands of Eskimo are the

only ones who have recently used the bow and arrow to any extent. A number of our eastern tribes, however, still use the weapon for small game. The Iroquois bow, as found at present, is a simple slat of some springy wood, such as hickory or ash. This is usually about five or six feet long, and an inch or an inch and a quarter wide, and oblong in section



Iroquois bow

(that is looking at one end); the thickness varying from  $\frac{5}{8}$  to  $\frac{3}{4}$  of an inch in the middle and becoming slightly thinner and narrower towards the ends. The curve is generally simple, though the ends are sometimes slightly recurved or bent back.



Indian arrows

Fig. I.—*a* and *b* are Iroquois arrows with twisted feathering; *d* is a Copper Eskimo arrow with a copper point and the feathering only slightly twisted; *c* is an Eskimo bone wrist-guard to prevent the bow-string from hitting the left wrist.

The Northern Ojibwa, or Saulteaux Indians, of the Lake Nipigon region, made very good bows and arrows of dry cedar of the form shown in the illustration herewith, which they used for shooting small game. These are easily made and prove very serviceable for amateur workmanship. The bow

is made of sound, straight-grained white cedar, dressed down by means of a draw-knife or a sharp jackknife to a width of about  $1\frac{3}{4}$  inches at the middle, tapering gradually to about  $1\frac{1}{8}$  inches at each end and with a thickness of about  $\frac{3}{4}$  of an inch. These Ojibwa bows are usually from five to six feet long, but Scouts may make them if they fancy up to seven feet. Notches are cut at each end to hold the bowstring, which in former times, was made of groundhog skin or the twisted bark of young hickory. Strong, medium-sized twine, however, answers well. The notches over which it is tied should be rounded a little so as to keep the string from cutting. The string is tightly fastened to the bow at one end. A noose is made on the other end large enough to slip over the notch and the bow is strung by bending it outward with the knee. The Ojibwa type of bow will easily take an arrow a yard long, which may be feathered or not as desired. For small game, however, the arrows are blunt and unfeathered.

The Iroquois arrows vary in length from about 27 to 36 inches, are made of maple, ash and other light hardwoods, and are often left unfeathered and made with large blunt heads for small game. The feathering of the Iroquois arrow, like that of most Indian arrows, consists of two strips made by splitting a feather, trimming it to about  $\frac{1}{2}$  inch wide and 4 or 5 inches long, with  $\frac{1}{2}$  inch or so of the quill left at each end for tying. The upper ends of the strips of feather are tied near the nock on opposite sides, then given a twist, or quarter turn, round the arrow, and again neatly bound to the arrow by their opposite ends. This twist in the feathering gives the arrow a rotary motion like that of a rifle bullet, which is said to improve the aim. The bow is drawn by grasping the notch with the thumb and first finger, which are also assisted in drawing the string by the second and third fingers. This is called the secondary arrow release.

The Iroquois' quiver is simply a long and narrow bag of groundhog or other skin, with fringes at the top and bottom, and is carried on the back attached to a bandolier going over one shoulder and under the opposite arm. This throws the ends of the arrows where they can be easily grasped by reaching backward over the shoulder.

The Indians, in former times, were extremely expert archers and, it is said, could drive an arrow through the body of a buffalo or a deer. Many Indian boys and young men are still

quite skilful and can hit a coin placed in a split stick at a considerable distance.

Here then is a thoroughly enjoyable outdoor interest for Canadian Scouts,—one that combines the skill of a craftsman and of a good shot. The materials for bow and arrow making are everywhere within reach and full particulars how to make them up and how to shoot will be furnished on request by the headquarters of the Canadian General Council.

#### NATIVE TYING MATERIALS

Many of the native grasses, barks and other fibres found in different parts of Canada make serviceable tying materials and some knowledge of this subject is an almost indispensable part of woodcraft.

The inner bark or bast of the basswood is so strong and flexible that several of the Indian tribes use it for weaving bags. The bark is first detached from the young trees in long strips, the bast being then separated from the more brittle outer bark. For bag-making the Indians boil the bast with wood ashes until it can be rubbed or shredded into threads.

Other useful tying materials are the bark of young hickories, which the Indians formerly used in a twisted form for bowstrings, the bark of one of the willows (*salix humilis*), the inner bark of the slippery elm and the inner bark of the leatherwood, or moosewood as it is also called. Farmers sometimes use this last mentioned fibre for tying grain bags. The Indians use it for bow strings. Some very good fibres are obtained from the outer portion of the stems of the swamp milkweed, also from various species of dog-bane and from the hemp nettle. These are particularly of service in the fall or later summer when the stems are mature. The Iroquois Indians use the fibre of swamp milkweed for pulling teeth and have the curious belief that by so doing they prevent the decay of those remaining.

The long slender roots of the spruce are used by many Indian tribes for sewing canoes and in the making of birch-bark utensils of various kinds. For these purposes the roots are split in such a way that each strip retains part of the smooth, rounded outer surface, the heart or inner portion being discarded. The strips are soaked and kept moist during sewing. Withes of various shrubs, including willows and alder, are also used for tying purposes.

## WALKING STICKS

Scouts tramping through thick bush may with advantage be on the lookout for straight saplings which can be used as canes and walking sticks. Common sense will, however, keep them from taking anything on private property which might cause offence.

It will often be found that after a tree has been cut down a number of straight upright shoots will grow out of the stump. These make excellent walking sticks, if one knows how to prepare them for that use. In districts where lumbering operations have been carried on young hardwood saplings commonly spring up without any side growth to considerable height, many of which are suitable for the use already suggested. Occasionally the root will itself serve for a knob or grotesque handle, or the thicker end may be soaked in boiling water for half an hour, then bent to a crook form and held in that position until the stick is cold by means of a tourniquet, as shown in the illustration herewith.



Any necessary trimming should be left until the stick has well dried out. In some cases the bark may with advantage be left on, but in other instances the wood will be better peeled, then treated with fine sandpaper, oiled and varnished.

Scouts may occasionally be able to sell sticks which have been made up in this way to dealers.

## TOTEM POLES

Scout patrols may find it of interest to carve their patrol bird or animal on totem poles to be displayed in front of the patrol quarters, whether indoors or in camp. If it is so desired, the pole may further be carved and coloured in such a way as to illustrate any outstanding events in the patrol's history. There is plenty of scope here for originality of design and skill in execution. The illustrations herewith are of totem poles erected by the Indians of the northern British Columbia coast. Some of the "medicine men" of the eastern tribes, including the Iroquois, set up small poles adorned with images of their familiar spirits, but this particular feature of Indian art found its highest development among the Salish, Haida, Nootka, Tsimshian, Tlinget and Kwatiutl tribes on Vancouver Island,

and northward to Alaska. Some of those erected in front of the native lodges are over fifty feet in height, with a round hole at the base serving as a doorway into the house. Inside house poles were erected by members of the Haida tribe, but only by the wealthy. These stood in the middle of the house directly behind the fire, and marked the seat of honour. Totem poles of many different forms were erected as grave posts among some of the Pacific coast tribes.



Pacific Coast Indian  
totem poles

The Indian totem poles were erected during the great feasts, commonly known as "potlatches," when the Indians gave away an immense amount of property and consumed great quantities of food.

The poles were carved out of the trunks of trees that were cut down by native implements, rolled into the water and towed to the village amid songs and dancing. One or more regular carvers were employed to put on the designs, and these were paid handsomely for their work.

The Indian totem poles were made of cedar, and there is no wood in Canada better suited for like use

among the Scouts. Scout totem poles will necessarily conform in size to whatever use is intended to be made of them. If single posts cannot be obtained of sufficient size, two or three pieces may be glued together for the purpose. Before the carving is done, the designs should, of course, be drawn on paper and the membership of the troop drawn on for suggestions.

## CHAPTER III

### NATURE

"And Nature, the old nurse, took  
The child upon her knee,  
Saying: 'Here is a story book  
Thy Father has written for thee.'

"'Come wander with me,' she said,  
'Into regions yet untrod,  
And read what is still unread  
In the manuscript of God.'"—LONGFELLOW.

#### (GEOLOGY)

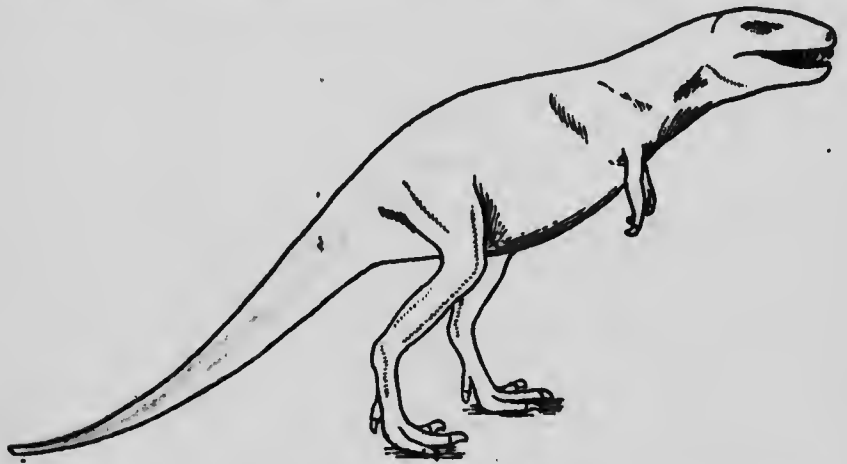
##### Rocks and Minerals\*

The lover of nature as he strolls along the shady trail will enjoy the variegated colours of the flowers, the fine green moss edging the bubbling brook, and the intricate tracery of the green trees against the sky; but generally a stone in his path has nothing in it but stumbling, no pleasure, no food, no good of any kind. To one, however, who has studied stones, close examination may perchance reveal animal remains called fossils. And so the great scroll of time is slowly unrolled and the observer may be able to picture this old world of ours in ages long gone by, to portray in their true colours other oceans and other lands peopled with strange and fantastic creatures whose remains we hold in our hands.

In Canada, as well as in other parts of the world, are found the fossil remains of all forms of animal and plant life. In a great many cases there are no living representatives of these prehistoric forms: for example, toothed birds, flying reptiles, sea lizards, the latter sometimes twenty-four feet in length, and land reptiles, which in America reached a length of nearly one hundred feet and a height of thirty feet. The last named reptiles, called dinosaurs, are of special interest to Canadians as many specimens have been dug up on the "badlands" of Alberta along the Red Deer valley, and are on exhibit in the Victoria Museum, Ottawa. These slow-moving fantastic creat-

\*Contributed by Mr. Stuart Schofield, M.A., B.Sc., Ph.D., with permission of the Geological Survey of Canada.

ures in many cases were protected from their enemies by the presence of horny plates forming a kind of armour. In fact, they might be compared to the "tanks" employed in military operations, only the armoured creatures were harmless. They lived around the swampy shores of seas and lakes, feeding upon the soft vegetation which grew there in abundance. Descriptions of a number of different types of Canadian dinosaurs have been published by Mr. L. M. Lambe, of the Geological Survey of Canada. The one shown in the accompanying illustration was a carnivorous creature twenty-nine feet long and eleven feet in height, the skeleton of which was excavated in 1913 in the valley of the Red Deer River, Alberta.



Carnivorous Dinosaur

From their skeletons scientists have reconstructed these strange, once existent animals and their surroundings.

Thus, the great changes which have taken place on the surface of the earth in the long ages of the past are recorded in the rocks out of which it has been constructed. As Tennyson says:

"There rolls the deep where grew the tree,  
O earth! what changes hast thou seen?  
There where the long street roars hath been  
The stillness of the central sea.

"The hills are shadows and they flow  
From form to form and nothing stands;  
They melt like mists, the solid lands  
Like clouds they shape themselves and go."

How true these lines are of the changes time has wrought in our own land.



The city of Vancouver is built on an old delta of the Fraser River and was once covered by the sea. The cities of Calgary and Regina stand on shales and sandstones which were long ago deposited in the bed of a great ocean, which in past ages stretched from the Arctic to the Gulf of Mexico. The city of Winnipeg is situated on the bottom of an immense inland lake that once covered a large part of the present province of Manitoba. Mount Royal, overlooking the city of Montreal, was probably in past ages an active volcano, belching forth molten lava and ashes, of which traces are still found in the surrounding country. Looking to the south-east from Mount Royal one can see the pipes of a number of extinct volcanoes stretching across the international boundary into the neighbouring state of Vermont.

Gazing northward from Parliament Hill, Ottawa, one's eye rests on the rolling Laurentian Hills, made up of some of the most ancient rocks of the earth's crust, which may be, geologists tell us, as much as fifty millions of years of age.

The northern part of Canada, within the Arctic circle, now barren, once was covered with vast forests whose remains are found in deposits of coal that have been uncovered in the far north. It is, of course, only a question of time until these remote parts of our country will be connected by railway with the rest of the Dominion.



Mount Garibaldi, an extinct volcano, near Vancouver, B.C.

## Canadian Volcanoes

There are no active volcanoes in Canada in these days, although our north-western coast has been in the past the scene of considerable volcanic activity and there are still active volcanoes in Alaska. The most recent volcanic action in Canada apparently occurred on Mount Garibaldi, about thirty miles north of the city of Vancouver, shown in the accompanying illustration. The crater of Mount Garibaldi is at present filled with glacial ice.



One of the "Flower Pots" on Georgian Bay, illustrating the erosion of sedimentary rock.

## Sedimentary Rocks

The little running streams and the mighty rivers that give us so much pleasure in our holidays are really the agents that bring about the great changes in the earth's crust. The streams carry mud and sand (sediment) down to the ocean and in their passage eat out the valleys through which they run. The sand and mud are dropped on the floor of the ocean and in some cases form deltas like the Mississippi delta and the delta at the mouth of

the Kootenay river, where it enters Kootenay Lake in British Columbia.

Many animals seek their food around the mouths of rivers. Fish, clams, oysters, crabs, lobsters, and also land animals which feed on shell fish, are often buried in the mud and thus are preserved as fossils. The sand, mud and gravel, as they settle in the ocean, form layers and the weight of subsequent layers gradually compresses the mud and gravel with their animal remains into rock which will show a layered or bedded structure. Hence we have bedded or sedimentary rocks. The mud forms shale, the sand forms sandstone, and the gravel forms conglomerates. Limestone is formed of the ground up shells of clams, oysters and other shell fish. So that wherever you find any of these rocks you may be reasonably sure the area in which you are was at one time under water.

The boulders, loose gravel and field stones which are encountered in all parts of Canada have in most cases been carried down from the far north and dropped by the great ice sheets which once overspread the entire Dominion.

#### Mountain Chains

The streams resemble great tentacles of the ocean which continually rasp the land and carry the loosened material to the floor of the ocean. Hence continents are being carried gradually into the sea. Perhaps the streams would accomplish this if it were not that the accumulation of great thicknesses of sand, mud and gravel, along the coast lines weaken the crust of the earth at these points. The earth's crust has a tendency to shrink on its molten or partly molten interior like the skin on a drying apple. Naturally, wrinkles or folds on the earth's surface occur along its weakest lines, the areas in which beds of sand, mud and gravel have been deposited along the coasts. The folds slowly appear on the sea-floor and thus it is that mountain chains like our Canadian Rockies and the Coast Ranges in British Columbia have been formed. Sometimes the floor of the ocean rises with them, thus forming plateaus like the Great Plains of western Canada and the United States. So it comes about that the great mountains and the great plateaus of the earth's surface are composed of hardened sediments such as limestone, sandstone, shale and conglomerate. In the case of our own prairie provinces the surface is happily overlaid with a thick deposit of fertile soil, made up of decayed plant life.

**Igneous Rocks**

Through the cracking of the earth's crust in the vicinity of mountain chains, rocks from the earth's interior reach the surface at many points and volcanoes may arise. The liquid rock is called lava and when it has solidified is known as volcanic rock. Even when solid, volcanic rocks show their origin in their frozen fluid form and rough porous surface resembling the hardened slags found around blast furnaces.

Sometimes, however, the molten rock does not reach the surface but cools and solidifies deep within the heart of the mountain chain and is exposed only by wear and tear of the frosts, rain and rivers. These volcanic rocks form the massive rocks of the earth's crust and are not bedded. If light-coloured they are called granites, if dark-coloured, gabbros, or diabases. If we look closely at them we see that they are made up of little sparkling crystals. They form the cores of the great mountain chains, like the Coast Mountains in British Columbia, and are only exposed by streams, frost and ice tearing off the sedimentary rock roof that covered them. Volcanic rocks in cooling give off liquids and vapours which contain minerals, useful to man, such as the ores of iron, lead, gold, silver and copper. The mineral-bearing liquids rise in the fissures and cracks of the overlying crust, cool and solidify into ore deposits in the form of veins.

**Canada's Mineral Resources**

The President of the Canadian Mining Institute is authority for the following outstanding statements concerning Canada's mineral resources:—

—“Our coal resources are among the greatest in the world. Our asbestos deposits in the Eastern Townships of the Province of Quebec supply most of the asbestos of commerce. The greatest nickel deposits in the world are located at Sudbury. Ontario has the largest body of high-grade talc on the continent at Madoc; the largest body of high-grade feldspar on the continent in the Richardson mine near Verona; the greatest mica mine on the continent at Sydenham and the greatest graphite mine at Calabogie. During 1916 also a molybdenite property was discovered within twenty-five miles of Ottawa that bids fair to outstrip all rivals. The tar sand deposits of Northern Alberta are the most extensive in the world. We also have one of the richest silver camps in the world at Cobalt,

and the most promising of the younger gold camps on the continent at Porcupine. Our smelters at Deloro and Thorold also produce more refined cobalt than all the other refineries in the world put together. These are just a few of the lines in which we lead, but the remainder of our production is by no means insignificant."

#### Nature's Playground

The great mountain chains which occur around the coasts of the continent hold in their vastnesses large and small ice fields, called glaciers, the remnants of larger ice fields, which at one time covered nearly the entire surface of Canada.

The mountains are playgrounds of the world. To wander among the peaks and to feel in harmony with nature is the privilege of the few who can survive the fatigue of the toilsome ascent; but the reward is ample and sufficient when the summit has been reached. Perhaps it is morning on one of the great ice-fields which nestle only among the peaks. All is quiet and still. As the sun mounts the heavens the glacier apparently becomes alive, the small threads of water with their merry tinkle trickle over its surface to linger for awhile in the open sunshine only to plunge down some deep crevasse in the blue ice to the darkness below. The glacier in this respect shares with the living creatures of the earth this quality, it owes its life to the sun. Even the little insects and the which live on the ice-fields frisk about as if they too realized the shortness of the passing day.

Or perhaps you have selected a sheltered spot on some mountain peak to pass the night before the explorations of the next day. The sun sets behind the jagged peaks, making the silhouette so sharp that it looks almost artificial; the long shadows fill the valleys with inky blackness and slowly mount to the very peaks whose ghostly forms merge into the hazy grey of the distance; the bright twinkling stars come out and appear like pin pricks in the floor of heaven; the campfire dies down; and the quietness and peace is so restful that the beautiful thoughts inspired by the hours of twilight merge into the visions of our dreams.

"Happy the man whose lot it is to know  
The secrets of the earth. He hastens not  
To work his fellows hurt by unjust deeds  
But with rapt admiration contemplates  
Immortal nature's harmony,  
And how and when her order came to be."—EURIPIDES.

## CANADIAN TREES\*

Canada has always been a great forest country and should be such always, for there are great areas of land that are too rocky, too rough or too sandy to grow anything but trees. If we leave out all the land that is good for farming or that is too high on the mountains or too far north to grow trees, there will be about 500 million acres which we should always keep covered with trees.

How much are the wood and other things that come from the forest trees worth every year to Canada? About 188 million dollars, and if we take care of the forests this can be made much greater. If we do not preserve our forests the saw-mills, pulp and paper mills and the wood working factories will have nothing to keep them going and the people who work in them will be put out of employment. More than that, Canada has the largest area of any country in the British Empire suitable for growing forests and the Empire asks us to take care of them for her sake also.

Trees will grow for even thousands of years and reach enormous size. The largest trees in North America are the "Big Trees" of California. The highest, now fallen, was over 400 feet in height. Another tree had a diameter of twenty-five feet at a height of six feet, and after it was felled thirty-two persons danced on the stump while seventeen others stood on it at the same time. Some of the older trees are about four thousand years old. One-half of the life of such a tree was lived before Christ was born. It was a strong young tree when Abraham went to seek a new country, was bearing seed when Sodom and Gomorrah were destroyed, and was nearly one thousand years old when David killed Goliath.

The Douglas fir and cedar in British Columbia also grow to an enormous size, reaching twelve to thirteen feet in diameter and a height of 250 feet.

Forests have been so much a part of the life of Canada that it is a good thing to learn something about them. While the early settlers had to get the trees out of the way to prepare the land for agriculture, still they made use of the woods in many ways and nothing is more interesting than to read of the various ingenious devices to meet the pioneer conditions which were framed by them from their knowledge of the trees and their qualities. To know the trees is not only useful but

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\*Contributed by Mr. R. H. Campbell, Director of Forestry, Ottawa.



**The oldest and largest living thing.**

"Grizzly Giant," a California sequoia tree, about 4,000 years old; 93 ft. 7 in. in circumference at the ground, 31 ft. in diameter at the base; some of the larger branches are 6 ft. in diameter.

Picture in lower left-hand corner shows a monster log cut from one of these California tree giants.

adds greatly to the pleasure of excursions in the woods, and there is no great difficulty in learning to recognize the principal species of trees in Canada.

The number of tree species in Canada is about 120, but in most districts the actual number of species found growing is not large.

Trees may be recognized by their general form or by their buds, leaves, bark, flowers, fruit or other special features. Just as you can recognize some of your acquaintances at a distance by their size or carriage, you may also recognize trees by their shape, the arrangement of their limbs, or their colour when they are too distant for other features to be visible.

It is most interesting to practise how accurately you can determine the species from a distance. In studying the forms of trees it will soon be noticed that the form of the same species will vary to a great degree according to whether it has grown up in a close forest or in the open. The form and appearance are also greatly affected by variations in soil and moisture and by climatic conditions. As trees get nearer the northern limit of their range or attain higher elevations they frequently dwarf to mere shrubs.

When variations are found in the forms of trees of the same species it is well to study out the causes of such differences and often the history of the tree can be learned from them on a close examination. The leaves are the feature usually taken first for identification and these are always present in the summer, but in the winter the buds and bark have to be relied on to decide many species, and sometimes the leaves of different species are much alike so that a thorough acquaintance with trees requires more than a knowledge of the leaves.

Trees are divided into two large groups according to the character of the leaves. One group, of which the maple is a sample, has broad leaves which last only for the summer and fall in the autumn. These are often called deciduous-leaved trees. Most of this group are included in what are called hardwoods. The other group, of which the pine is a sample, have, thin, needle-like leaves and have their seeds, usually two, under each scale of the cone. They are generally called cone-bearing or coniferous trees, or may be called needle-leaved trees. As a rule they do not drop their leaves for the winter. Most of the softwoods belong to this group.



### Uses of Wood

Have you ever considered how useful wood is? If not, look around your home or your school, or look at the newspapers that are turned out every day by the thousand all over the country the paper of which is made from wood-pulp.

It has been estimated that the special week-end edition of one of the large newspapers published in New York will use the trees from thirty acres of land. With so many and such large newspapers in the United States, much more Canadian paper is being used there than in Canada itself. Then, remember that every big tree that is being cut down and made use of to-day had its beginning in the seed and had to start in life an inch high and pass through all the stages by small but steady growth each year till at the end of sixty, eighty, one hundred years or more, it has become ready to be of use.

The young trees you see in the forest now down to the tiniest are the promise of the future. If they are destroyed the forest of the future is gone. But can they and will they be destroyed? There are many things that work to destroy them. Insects destroy many; fungi, such as the shelf fungus which you frequently see on the trees, enter by some wound in the bark and spread through the tree.

### Forest Fires

Many square miles are destroyed every year by fire. Some of the past fires have been very destructive.

The historic fire in Miramichi, New Brunswick, in 1825, burned over 2,500,000 acres and caused the loss of 160 lives. The Fernie fire in British Columbia in 1909 burned the town, a large area of forest, and caused the loss of 22 lives. The fires in northern Ontario in 1916 burned over many miles of territory, caused a loss of 224 lives and of property worth over \$2,000,000.

### Forest Fire Law for Boy Scouts

To be a good Scout is to be a good citizen, and the first duty of a citizen is to uphold his country by carrying out the laws made for its defence and the protection of its citizens and property. The forests are among Canada's chief resources and their protection depends more upon the carefulness of those who go into the woods to camp and hunt and work than upon all other agencies put together. Canadian boys take more readily to camp life in the woods than boys from Europ-

ean countries, and for obvious reasons Canadian Scouts ought to be leaders in woodcraft and forestry.

There are several signs of a good woodsman. One is the



Big Trees in Stanley Park, Vancouver, B.C.

quiet, easy yet rapid way he goes through the forest; and another is the way he leaves his fire. The laws of Canada in

regard to camp-fires have been a long time in the making and contain the necessary points to ensure the safety of the forest. These laws are enforcible with heavy penalties but the good Scout is moved by love of duty and love of country, not by fear of penalties and he wants only to know in brief space what are the points not to be overlooked. Well, here they are boiled down into small compass for his direction:

**IT IS STRICTLY FORBIDDEN TO LET FIRES RUN AT LARGE OR LEAVE ANY FIRE UNEXTINGUISHED EVEN FOR A SHORT ABSENCE.**

Care with small Fires is the Best Preventive of large Ones. Therefore:

1. Carefully extinguish lighted matches, wadding of fire-arms, or other burning substances before throwing them away.
2. Build camp-fires no larger than necessary; large fires are harder to extinguish.
3. Do not build fires in leaves, long grass, moss, rotten wood, or other places where they are likely to spread; a bare rock makes a safe fire site.
4. Do not build fires against trees or under overhanging evergreen trees or against large or hollow logs, where it is difficult to extinguish them.
5. In windy weather, and in dangerous places, dig holes or clear the ground to a distance of ten feet on every side to confine the camp-fire.

The experienced woodsman extinguishes with water his camp-fire when leaving camp, even when he is to be absent only an hour or so.

Any one who leaves his camp-fire burning can never be anything else than a tenderfoot.

If the Boy Scouts of Canada prove themselves to be careful in such matters they may help in guarding against the terrible destruction Canada has suffered in the past as a result of forest fires.

A short description is here given of some of the leading species of trees in Canada with some of the marks of identification.

## HARDWOODS

## The Maples



Silver Maple



Sugar Maple



Manitoba Maple

The maple leaf is the symbol of Canada and the tree is well known. There are nine species of maple in Canada but they can all be distinguished from other species of trees by the shape of the leaf which has three to five pointed lobes. In Ontario and eastward the three chief species are hard or sugar maple (*Acer saccharinum*), the soft red maple (*A. rubrum*) and the silver or white maple (*A. dasycarpum*). The leaf of the hard maple has five lobes and the edge of the leaf is entire, that is, it is not broken up into fine teeth.

In the leaf of the red maple the two lower lobes nearest the stem are small and the edge of the leaf is serrated or cut into small teeth like those of a saw. The leaf of the silver maple is much like that of the red maple but the notches between the lobes are narrower and come to a sharp point. In the Prairie Provinces the only maple growing naturally is the Manitoba or ash-leaved maple (*A. Negundo*). Some of the leaflets are shaped like those of the maple and some resemble those of the ash, and the leaf is compound, as explained under walnut. In British Columbia there are the large-leaved maple (*A. macrophyllum*) with leaves somewhat like those of the hard maple but much larger, and the vine maple (*A. circinatum*), a small tree growing under the shelter of others and with leaves somewhat circular, and having seven to nine sharp-pointed, sharp-toothed lobes.

Maple wood is used for flooring and furniture. The wood with the peculiar figures called "bird's eye" is particularly handsome. Maple sugar, made from the sap of the hard maple or sugar maple, is known to most boys.

## The Oaks

There are twelve species of oaks in Canada but most of them are confined to the peninsula forming the southwestern part of Ontario. The oaks are distinguished by their leaves, longer than broad, divided into several lobes, and by the acorns borne in cups. The oaks are divided into two main groups; the white oaks, with rounded lobes on the leaves and sweet acorns; and the black oaks (which include the red oaks) with the lobes of the leaves pointed and bristle-tipped and bearing bitter acorns.



White Oak

The typical white oak (*Quercus alba*), which grows in southern Ontario and Quebec, has leaves from five to nine inches long and three to four inches wide. The lobes are rounded or blunt and the notches are fairly deep, most of them one-half inch and over. The most widely distributed of the white oaks, or any of the oaks, is the bur, or mossy cup, oak (*Q. macrocarpa*) which is found from Nova Scotia to Manitoba and considerably farther north than other oaks. The leaves vary greatly in size and outline but their characteristics are well marked. The long deep notches in the leaf on each side of the main rib, which almost meet and cut the leaf in two, are a good distinguishing feature. The acorns are large and the scales on the edge of the cup are elongated and form a distinct fringe. The Garry oak (*Q. Garryana*) is found only in British Columbia and is the only oak there. Its leaves are like those of the white oak. The chestnut oak (*Q. prinus*) is found only in the extreme southwestern part of Ontario. The leaves resemble those of the chestnut tree but the points on the margin are more rounded and the outline of the leaf wavy rather than toothed.



Bur Oak



Red Oak

Of the black oaks the red oak (*Q. rubra*) is most widely distributed. It is found from Nova Scotia to the east shore of Lake Superior, and as far north as the height of land between the Great Lakes and James Bay in Ontario. The leaves have from nine to thirteen lobes, more than most oaks, and taper to a sharp point. The bark is generally smooth. The scarlet oak (*Q. coccinea*), black oak (*Q. velutina*), and pin oak (*Q. palustris*) occur in southwestern Ontario. The lobes of

the leaves are bristle-pointed and the bark rougher than that of the red oak. The white oak is the most valuable species and the wood is used for making furniture, for flooring, and for barrels and casks to hold liquor. It is now so scarce that most of the oak used in manufactures is imported.

#### The Walnuts



Black Walnut

There are only two species of walnut trees in Canada, the black walnut (*Juglans nigra*), and the white walnut or butternut (*J. cinerea*). The leaves of the walnut are compound; that is, there are a number of leaflets on each stem. Watch how the leaves drop from the tree. A leaf includes the stem and leaflets from the point where it separates from the tree in the fall of the year. The nut is enclosed in a round green covering about the size of a small apple. The black walnut is one of the most valuable trees we have, but unfortunately it is one of the scarcest. It grows

naturally only in southwestern Ontario and is found now scattered on farms. The wood is hard, dark in colour, and is used for making furniture, cases for organs and pianos, and gunstocks. The white walnut, or butternut, may be distinguished from the black walnut by the twigs which are downy and clammy. The nut is longer than broad. The butternut is found from New Brunswick and along the St. Lawrence valley to Georgian Bay in Ontario. The wood is soft and light in colour as compared with the black walnut and is used for planking for boats and for interior finish.



Butternut

The Hickories

There are six species of hickory in Canada but none of them are found west of Ontario. They are related to the walnuts and like them have compound leaves, though smaller, and smaller nuts. The bitternut hickory (*Carya cordiformis*) is one of the most generally distributed. Its bark is gray and rough, recent shoots are an orange-green colour and dotted, and the nut is bitter. Its winter buds are sulphur yellow in colour. The shagbark hickory (*C. ovata*) is named and distinguished by its bark flaking or shagging loose in plates which are free at both ends, and by its



Bitternut Hickory

sweet nuts. The wood is among the toughest, strongest, and hardest in Canada, and is used chiefly for vehicles, tool handles, agricultural implements, machinery parts, and sporting goods.

The Ashes

There are four species of ash in Canada. The leaves of the ash are compound and each pair is placed immediately opposite to one another on the branches, unlike those of the



White Ash



Black Ash



Green Ash

walnut or hickory, and its fruit is a winged seed. The white ash (*Fraxinus americana*) is the most valuable and is found growing from Nova Scotia to southwestern Ontario. The twigs are coarse and shiny, and the leaflets have stems. The red ash (*F. pennsylvanica*) is a smaller tree and has downy twigs. The black ash (*F. nigra*) has all but the terminal leaflet stemless. The green ash (*F. pennsylvanica* var. *lanceolata*), a variety of the red ash, is found from western Quebec to Alberta. It differs from the red ash mainly in the smoothness of its branches, leaves and stems. The blue ash (*F. quadrangulata*) is confined to southwestern Ontario in the counties bordering on Lakes Erie and St. Clair, but is not very common even there. It can be distinguished from the other ashes by its rather heavy branchlets which are more or less four-sided in cross-section. The wood of the ashes is noted for its toughness and elasticity. The more valuable species, particularly the white ash, are used for vehicle stock, tool handles, and interior finish. The mountain ash is not a true ash and is distinguished by its numerous small toothed leaflets and its red berries.

#### The Elms

There are three species of elm native to Canada. The leaves are not compound and the veins run off from the midrib to the outer edge like the barbs of a feather, or, to employ the usual terms, the leaves are simple and pinnate. The white elm (*Ulmus americana*) is the common one, with a great spreading top seen standing so grandly in meadows. The twigs are smooth. The rock elm (*U. racemosa*) has corky ridges on the twigs which easily distinguish it. The red or slip-



White Elm pery elm (*U. fulva*) has stouter twigs than the white elm and they and the inner bark are mucilaginous. The buds have a heavy covering of reddish-brown hair. The rock and red elms are found only in the southern parts of Quebec and Ontario but the white elm goes as far west as the province of Saskatchewan. Elm is used for making furniture, but principally for barrels, boxes and fruit packages.

#### The Birches

The birch-bark canoe of the Indian has made the birch well known in Canadian song and story. There are nine species of birches in Canada. The bark of all birches, which is smooth



and either brown or white in colour, is marked with long horizontal slits or lenticels and on young trees of most species can be separated into papery layers. The seeds are produced in small scaly cones. The leaves are simple and pinnate. There are two white birches, so called from the colour of their bark. One is the well known paper or canoe birch (*B. alba* var.



Paper Birch



Yellow Birch

The other a smaller (*B. populifolia*) is found in the Maritime Provinces and westward to eastern Ontario. The leaves are triangular in outline with a long tapering point. The yellow birch, (*B. Intea*) is found from the Atlantic to Lake of the Woods and is the largest birch in Canada. Its name comes from its yellowish straw-coloured bark. Cherry or sweet birch, (*B. lenta*) which comes into Canada only at a few places in southern Ontario and Quebec, has darker bark which is sweet and aromatic. Western birch (*B. occidentalis*) which is a large tree and has brown bark, is found in southwestern British Columbia. Two smaller birches, the Alaska (*B. alaskana*) and mountain birches (*B. fontinalis*), are found from Saskatchewan westward. The wood of the larger birches is used for making furniture, interior finish and veneers, and of the white birches for spools, bobbins, clothes pins, and small woodenware generally.



White Birch



Western Birch

The Cherries

There are three species of cherry trees in Eastern Canada, the black, red and choke cherries. The black cherry (*Prunus serotina*) is the largest tree with long, narrow leaves, having fine teeth and dark fruit. The red cherry (*P. pennsylvanica*) is a smaller tree, and has red fruit and lighter bark. The choke cherry (*P. virginiana*) has dark bark and rather broad and blunt leaves. It does not grow as tall as the others. The fruit is dark coloured with peculiar astringent properties which cause the "choking" sensation after eating it. A western choke cherry (*P. demissa*) is found on the coast of British Columbia and on Vancouver Island. There is another cherry in British Columbia, the bitter



Black Cherry

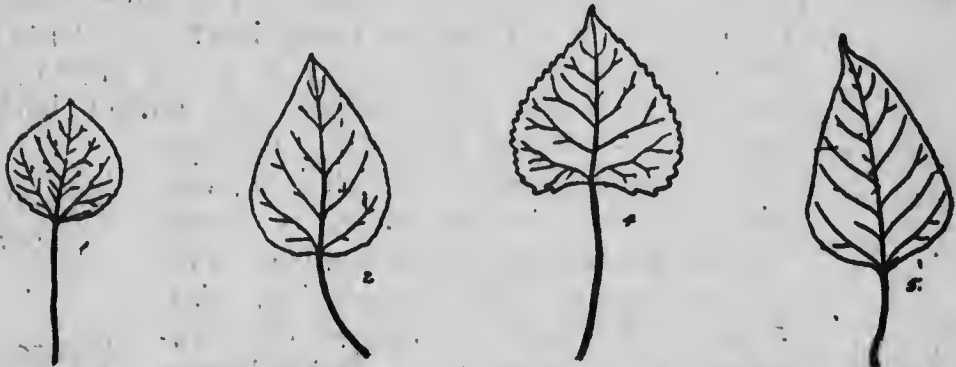


Choke Cherry

cherry (*P. emarginata*) which has dark, bitter fruit. The twigs are bright red as contrasted with the light brown of the choke cherry.

### The Poplars

The poplar is distributed all over Canada and there are seven species that are native. The aspen poplar (*Populus tremuloides*), distinguished by its almost circular, fine-toothed leaves, which on account of the flattening of the stems laterally, tremble in the slightest breeze, is the most widely distributed. The large toothed aspen (*P. grandidentata*), with larger leaves more coarsely toothed, is not found west of Ontario. The



Aspen

Balsam Poplar

Cottonwood

Black Cottonwood

balsam poplar (*P. balsamifera*), with larger, pointed leaves and buds, covered with a sticky gum, is almost as widely distributed as the aspen poplar. The cottonwood (*P. deltoides*), having broad leaves with square base, triangular in outline and coarsely toothed, is found scattered in river bottoms, in the southern part of both Eastern and Western Canada. There are two poplars (*P. acuminata* and *P. angustifolia*), with long narrow leaves in southern Alberta and Saskatchewan. The black cottonwood (*P. trichocarpa*) on the coast of British Columbia has leaves like the balsam poplar. The wood of the poplar is not very valuable and is used for fuel, for making excelsior and pulp, and, where better woods are not available, for lumber and various purposes. The Lombardy poplar, which grows a tall, narrow tree, and the silver poplar with leaves shaped like those of the maple, green and shiny on top and white and woolly beneath, have been introduced from foreign countries.

**The Beech**

Only one species of beech (*Fagus grandifolia*) is found in Canada and it grows from Nova Scotia to Lake Superior. The beech is readily recognized by its three-angled nuts, in a spiny covering, its smooth, gray bark, and long, pointed, lance-shaped buds. The leaves are simple, pinnate and coarsely toothed. The wood is used for flooring, furniture and a variety of smaller articles.



Beech

**The Chestnut**

The chestnut (*Castanea dentata*) grows in the southern part of Ontario, and is now very scarce. A disease which came over from Europe, the chestnut tree blight, is fast destroying what is left. The leaves are simple, six to eight inches long, and the margin is coarsely toothed with curved teeth, like those of a circular saw. The nuts are enclosed in large burs. The wood is mainly used for veneer cores and pianos and doors. The horse chestnut is a different species and is not native to Canada.



Chestnut

**The Basswood**



Basswood

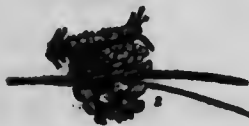
The basswood (*Tilia americana*) is found from the Atlantic coast westward to southern Manitoba. It is easily distinguished in the summer by its large heart-shaped leaves, yellow flowers and round, hard fruit, about the size of peas. The dark, red, sometimes green, smooth, lop-sided, or "hump-backed" buds are one of the trees best distinguishing features in the winter. The wood is light, of fine texture, and is used in cooperage, box making, and for panelling in carriages.

## THE CONIFERS, OR NEEDLE-LEAVED TREES

## The Pines

There are nine species of pine in Canada, three in the east, five in the west, and one crossing the whole northern part of Canada to British Columbia. The pines are divided into two groups: soft or white pines with their leaves in bundles of fives, and their cones hanging downward and with thin scales; and hard pines, with their leaves in bundles of two or three and their cone scales thick and woody. The white pine of the eastern provinces (*Pinus Strobus*) is the most important and was for many years the chief lumber used in the construction of houses. The bark is dark and rough, and the wood almost white. It is the only pine with five

White Pine needles in a bundle native to Eastern Canada. The western white pine (*P. monticola*) is a different species confined to British Columbia and has larger cones, though otherwise it resembles the eastern species. The red pine of Eastern Canada (*P. resinosa*) has long leaves, two in a bundle, reddish bark and wood, and is not found west of southeastern Manitoba. The western yellow pine (*P. ponderosa*) is found only in British Columbia, and has long leaves in clusters of threes, or occasionally twos, and reddish bark. Jack pine (*P. Banksiana*) grows all across Canada into Alberta where it is finally



Red Pine

Western Yellow  
Pine

Jack Pine

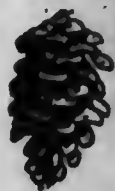
Lodgepole  
Pine

replaced by lodgepole pine (*P. Murrayana*) which is found throughout British Columbia. Both have their short leaves in bundles of twos and the cones are small and curved. The foliage of the lodgepole pine is darker and the leaves not scattered along the twigs so much as in the eastern jack pine.

There is more jack pine used for railway ties in Canada than any other species of tree.

**The Spruces**

There is more spruce lumber cut in Canada than of any other species and it has also the first place in the making of pulp and paper. There are five species of spruce in Canada. The leaves are short and generally arranged all round the twigs, at any rate they are not spread flat like the leaves of



White Spruce

balsam fir and hemlock. The white spruce (*Picea canadensis*) extends from the Atlantic coast to the Yukon but does not reach the Pacific coast. The leaves are sharp-pointed and have a peculiar skunk-like odour when crushed. The cones are from one and a half to two inches long. The Engelmann



White Spruce

spruce (*P. Engelmanni*), very similar to the white spruce, is found in Alberta, British Columbia and the Yukon. The black spruce (*P. mariana*) grows from the



Engelmann Spruce



Black Spruce



Black Spruce

Atlantic to the Yukon and is characteristic of low, wet places. The leaves are short, and blunt pointed, the cone scales have a toothed margin and the end twigs are slightly coated with a rusty-coloured hair. Red spruce (*P. rubra*) does not occur west of the eastern part of Quebec. Sitka spruce (*P. sitchensis*), found only in British Columbia, is the large spruce of the coast district. The leaves are stiff, thick and sharp-pointed so that they feel as if piercing the hand when a twig is grasped tightly.

**Fir**

There are five species of trees called firs in Canada, but one of these, the Douglas fir of British Columbia, is not a true fir.

The other four species are designated balsam fir. The leaves are flat and blunt pointed, and are two-ranked, that is, they spread out from opposite sides of the twigs. The cones stand erect and the scales of the cones are shed at the same time as the seed, leaving the stem standing bare. The bark is smooth but with the characteristic blisters filled with balsam. The eastern balsam fir (*Abies balsamea*) is found from the Atlantic to the Yukon. There are two balsam firs in British Columbia growing generally at low levels—the lowland fir (*A. grandis*), with yellowish-greenish cones, and the amabilis fir (*A. amabilis*), with purple cones. The Alpine fir (*A. lasiocarpa*) is found at higher elevations and has purple cones. Balsam fir timber is used as lumber and pulpwood.



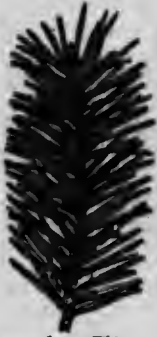
Balsam Fir



Balsam Fir



Western Cedar and Douglas Fir Trees.



Douglas Fir



Douglas Fir

The Douglas fir (*Pseudotsuga mucronata*), found only in British Columbia and Alberta, resembles the balsam fir in the earlier years of its growth, but later the bark becomes very thick and deep furrowed. The cones hang down instead of standing erect as in the balsam fir and have conspicuous three-pointed bracts attached to the back of the cone scales. The trees grow to enormous size and the timber is one of the most valuable in Canada. It is used for heavy framework, for buildings and cars, for bridges, docks, interior finish, paving blocks, wooden pipes, railway ties and many other purposes.

#### Hemlock

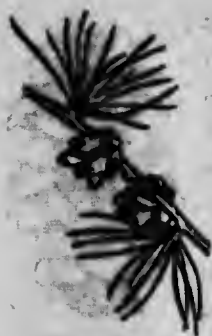


Hemlock

The hemlocks have two-ranked flat leaves like the balsam firs, but the leaves are generally smaller and have a distinct small stem. The top of the tree is whip-like and bends over slightly. The bark is rough. The cones are very small and hang downward. The eastern hemlock (*Tsuga canadensis*) is found from Nova Scotia to the western part of Ontario. There are two hemlocks in British Columbia, the western hemlock (*T. heterophylla*), and the mountain hemlock (*T. Mertensiana*). The wood of the eastern hemlock is poor but is used for lumber and ties. Western hemlock is much better in quality. Tannin, used in tanning leather, is obtained from the bark of the hemlock and many trees have been cut down simply to get the bark for this purpose.

#### The Larches

The larches are the only species of coniferous trees in Canada which shed all their leaves in the fall. The soft leaves are borne in clusters of about twelve to forty at the end of short knobs standing out from the twigs. The eastern larch, tamarack, or hackmatack (*Larix laricina*), is found from Labrador to the Rocky Mountains. The



Tamarack

western larch (*L. occidentalis*) is found in southern British Columbia and Alberta and the Alpine larch (*L. Lyallii*) in the same districts but high up in the mountains. The wood is hard and durable and is used for structural timbers and railway ties.



Western Larch

### The Cedars



Cedar

There are two species of cedar in Canada, one growing from the Atlantic to Manitoba (*Thuja occidentalis*), and the other confined to British Columbia (*T. plicata*). The bark is thin and shreds in strips and the foliage consists of tiny, over-lapping, scale-like evergreen leaves. The cones are very small. Cedar wood is light and durable and is used for shingles, poles, posts, railway ties, and in buildings. The yellow cedar of the coast of British Columbia (*Chamaecyparis nootkatensis*) belongs to a different

genus and is frequently called cypress. The cones are not so narrow and elongated as those of the cedars previously described, and the wood is harder and heavier and has not the same characteristic odour.

### CANADIAN SHRUBS

The only distinction between trees and shrubs is their size and the two classes pass into one another in such a way that it is frequently difficult to tell in which class to place any particular species. Species which are trees in one locality may reach only the size of shrubs in a more unfavourable location or under different climatic conditions. In general a shrub is a woody plant which does not grow higher than about twenty feet. It is impossible to describe all the Canadian shrubs in the space available but some of the most widely distributed will be mentioned.



## Willow

The willows (*Salix*) are distinguished by their bitter bark, their winter buds having only one scale, and their catkins. They are found all over Canada, especially in low wet places. The different species of willows are difficult to determine as they run into one another so much.



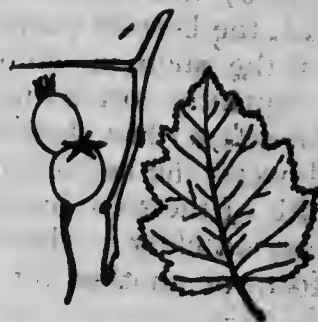
Wild Rose

## Rose

The wild rose, with its pink or red single flowers, reddish fruit known as rose hips, its prickly stem, and its compound leaves divided into small leaflets, is also to be found almost everywhere in Canada, growing generally in dry open places. *Rosa blanda* is the most common species.

## Hawthorn

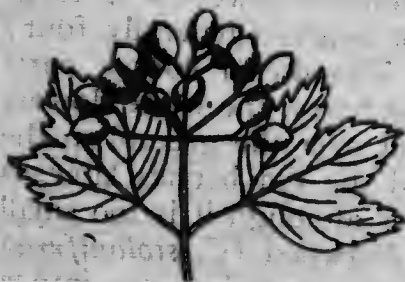
The hawthorn (*Crataegus*) is distributed throughout Canada and its small, white clustered flowers make a beautiful show in the spring. The zig-zag form of the twigs, the thorns on the branches and the red haws, or fruit, are the distinguishing features.



Hawthorn

## Arrow Wood

The most widely known and distributed of this genus is the maple-leaved arrow wood (*Viburnum acerifolium*), or as it is otherwise called, high bush cranberry. It is found generally in the woods and is distinguished by its three-lobed leaves, shaped like those of a maple, its small white flowers in clusters and its sour red berries.



High Bush Cranberry

## Service Berry

The service berry, or juneberry (*Amelanchier*), is found in some form throughout Canada. The flowers are white, in clusters, and appear early in spring. The leaves are not large and are smooth, simple and toothed on the margin. The bark is gray or brown in colour and smooth, like that of the beech. The berries, which are ripe in June or July, are dark purple, sweet, and perfectly safe to eat. The western species is called saskatoon and the fruit is in general use for preserving.

## The Elder

The elder (*Sambucus*) is a well known shrub with compound, opposite leaves and weak, pithy, large-jointed branches. The flowers are small, white, and borne in large clusters. In one species (*S. canadensis*) the clusters of flowers are flat, the berries purple and the pith of the stem is white. The other frequently occurring species (*S. racemosa*) has elongated clusters of flowers, the berries are red and the pith of the stem brown. The latter is generally called the red-berried elder. Almost all parts of the elder are used in some form or another for medicinal purposes.



Elder

## The Dogwoods



Dogwood

The dogwoods (*Cornus*) are deceiving in one way as what appears to be the flower is in reality a cluster of minute flowers with large white outer leaves or bracts (generally four) surrounding them. The dwarf cornel, part-ridge berry or pigeon berry, the white flowers of which are seen all over the ground in the woods in spring and the red berries later, is perhaps the best known of the species although it is too small to be even a shrub. The red osier dogwood (*C. stolonifera*) which has red branches and white berries and grows into a shrub, is one of the most widely distributed, being found from the Atlantic to the Pacific. The leaves are simple, opposite,

and the margin is not toothed. Another very similar species (*C. Amomum*) with blue berries has the name of kinnikinnik, and the dried inner bark was used by Indians for smoking. The two are difficult to distinguish and are both called kinnikinnik. Kinnikinnik is a name also applied to bearberry in the East. In southern Ontario, and in southern British Columbia, there are species with larger flowers known as the flowering dog-wood.

Sumach



Sumach

The staghorn sumach (*Rhus typhina*) is the best known of this genus and is found in Canada as far west as Lake Huron, generally distributed, but usually on poor soils. The leaves are composed of from eleven to thirty-one leaflets, the latter being long and narrow and toothed on the edges. The leaves become a brilliant scarlet in the autumn. The flowers are small, yellow in color, and in long close clusters. The fruit is also in large, close clusters of hard seed with a covering of short red hairs of distinctly acid taste. The twigs are covered with thick brown hair like the velvet on a stag's horns, hence the common name. A species with smooth twigs, known as smooth sumach, (*R. glabra*) grows as far west as Saskatchewan. A poison sumach (*R. vernix*), found in low wet places in southern Ontario, has leaves without teeth and whitish fruit. The poison ivy (*R. toxicodendron*), with three broad leaflets on each leaf, and whitish fruit, which belongs to the same genus as the sumachs, is found all over Canada.

Witch Hazel

Witch hazel (*Hamamelis virginiana*) is one of the most peculiar shrubs in Canada, as its flowers appear late in the fall. The flower leaves are yellow, narrow and fairly long. The foliage leaves are large, simple and irregular in outline. The fruit is small, about the size of a large pea, and is brown and woody. Extract of witch hazel is used as a lotion. Some people use the twigs as a divining rod for



Witch Hazel

locating water under ground and have great faith in their value for this purpose. Witch hazel is found in Canada eastward from Lake Huron.

### Hazel

The hazel (*Corylus*) is widely distributed throughout Canada, being found from the Atlantic to the Pacific. It never grows to any great height but is chiefly distinguished by its round nuts covered by a green hairy sheath which extends beyond the nut, forming in one species a regular beak. The leaves are simple, three to six inches long, and somewhat rough.



Hazel

### Juniper



Common  
Juniper

The common juniper (*Juniperus communis*) is found generally in clumps in pastures or open ground throughout Canada. Its branches grow from the centre of the clump and bend over towards the ground on the outside giving it a characteristic appearance. It is a conifer and has short, needle-like, evergreen leaves. The fruit is bluish-black and is much like a berry in appearance.

There are many shrubs, such as raspberry, black-berry, red and black currants, gooseberry, blueberry, buffalo berry, and others too numerous to mention, for which reference may be made to works on botany as space prevents them being described fully. (See p. 629.)

## CANADIAN WILD FLOWERS\*

The native spring flowers are, as a rule, the best known by amateurs in Canada. After the long winter, even before the snow has all gone, there is the longing to get out to the woods and sunny slopes where the first hepaticas are lifting up their delicately coloured heads through the snow and dead leaves; where the bloodroot still protects its fragile flower-buds by the enfolding leaves; where the blue cohosh stands purple and cold with its leaves tightly curled in, hardly daring to spread its sepals; where the buds of the spring-beauties, yellow adder's tongue, trilliums and others may be gathered and brought home to open in a sunny window.

The first trip to the woods in the spring leads to a second and a third. On each excursion some fresh flowers are in bloom and others coming into bud. In this way the spring flowers become familiar gradually and pleasantly.

But when the summer bursts upon us, as it often does in Canada, the great number of interesting objects in the plant kingdom is bewildering to the novice. Everywhere the green is dotted with colour. To learn the most conspicuous wild flowers in one's own neighbourhood is, however, a very good beginning of the study of botany and a very delightful summer's recreation.

## Preparation of a Herbarium

*Collecting.*—In studying the wild flowers you will naturally have a desire to make a collection or herbarium for your own use.

If possible, the specimens should be collected in the morning on a dry day, as the plants are then in better condition. Avoid all deformed, misshapen specimens and those that have been attacked by insects. A typical plant should be chosen, one that is neither too big nor too little. Where it is impossible to take the whole plant, roots, stem, leaves, flowers and fruit, portions should be cut showing as many of these as are obtainable at the time. When no fruits are present with the flowers, the plant should be marked for a later visit. It is interesting also to watch for the young plants, particularly for the first year growth of biennials and perennials. Thick stemmed plants and swollen roots may be cut in two before being pressed,

\*The following notes on Canadian wild flowers, as well as the drawings which accompany them, have been contributed by Miss Faith Fyles, B.A., Assistant Botanist, Central Experimental Farm, Ottawa.

saving both portions as you will want to show both the inner and outer sides.

*Pressing and Drying.*—It is best to take out into the field with you no more than is necessary. All that is really needed is a pocket pad and pencil, a hand-press, and something with which to dig up the plants. A simple press may be made out of two pieces of strong cardboard, size 12 x 18 inches. What is known as wallboard is best. Put the two pieces together and with an auger bore two rows of holes three-quarters of an inch in diameter at an even distance from each other and the margin. Place between the two cardboards as many drying papers as you need for the day and strap all together with a good shawl-strap. This makes a light and convenient press which may be strapped as tightly as you please. The botanical felt drying papers are the best but newspapers cut to the size are very good, with layers of white tissue paper next the plants. Ordinary white blotting paper is excellent and may be used with care for almost as long a time as the felt paper. It is an advantage to have a sheet of white tissue paper above and below the specimens for two reasons, that you can see through the paper if any part is disarranged, and also the specimen may be lifted without disturbance when you change the drying papers. To save time the press should be filled, before you start, with alternate layers of tissue paper and drying paper, first one or two sheets of drying paper according to thickness, next two sheets of tissue paper, and so on.

It is safest to put your specimens in the press as you collect them. Spread out the leaves and flowers in as natural a position as possible, avoiding doubling and folding the leaves. Show the under side of one or two leaves and flowers if possible. On a sheet of your pocket pad write the name of the plant if you know it, if not a note as to colour and perfume will help, the day, month, and year of collecting with the collector's name. These data are imperative if you wish your collection to be of use and value, and should be put with each specimen. When you have finished collecting and arranging, strap tightly and hang the press in the sun; the holes in the sides will let the moisture escape more readily. On coming home, the drying papers should be changed. At the same time you may rearrange any crumpled specimens. If you wish to use your press the next day, the specimens may be put on a wide flat board with another on top and then weighted with

about two dozen or more bricks. The drying papers should be changed once daily the first week.

If you prefer, you may buy a very useful press in two pieces, each made of five narrow strips of light hardwood eighteen inches long crossed by six strips twelve inches long and rivetted firmly together. There is also to be had a well made tin box called a vasculum with a small door and a shoulder strap. This is useful if you wish to bring back with you fresh specimens for further study.

*Mounting.*—Most, at least, of the specimens should be dry in two weeks' time. For mounting them you should secure a good quality of white drawing paper and have it cut to the regulation size,  $11\frac{1}{2}$  inches by  $16\frac{1}{2}$  inches. In mounting, *care and neatness are essential*. For small, delicate specimens you may use very narrow strips of gummed paper put in place with a pair of forceps. The ends of the strips may sometimes be hidden under some of the leaves. For heavier specimens it is best to cut small slits in the mounting paper, one at each side of the stem, and put the ends of narrow strips of a fairly heavy paper through to be gummed down securely on the wrong side. If you have several strips to be put on one specimen, they may all be put through at once, the sheet and specimen turned over carefully and then the strips all gummed down at once. Ways and means will come to you with practise. The main object is to have your specimen as neat and firmly mounted as possible without attracting undue attention to the strips of paper.

After mounting, the specimens should be neatly labelled, on a separate small label, with the scientific name of the plant, *i.e.*, the generic and specific name; the habitat, the locality, the date and the collector's name. The different species of the same genus should then be put in a genus cover, that is a folder of heavy manilla paper, 12 x 18 inches, with the name of the genus in the lower left hand corner, that will be next the folded edge. The herbarium labels should be placed on the lower *right* hand corner of the sheets. A cupboard with shallow shelves and doors makes a convenient place for your collection.

For the use of those who do not possess text books of botany a list of such, with the titles of some popular works on the same subject, will be found on page 629.

## SPRING FLOWERS

1. Jack in the Pulpit, or Indian Turnip [*Arisaema triphyllum* (L.) Schott], is a perennial plant, one to three feet high, growing from a corm or solid bulb. The leaves comprise three leaflets. The flowers are very small and are formed around the base of the spadix, or "Jack," protected by a green and purple striped spathe, which is bent over and forms the "pulpit." It is found in rich woods from Nova Scotia to Ontario and is in bloom between April and June.

2. Water Arum (*Calla palustris* L.), like the "Jack" and the two following plants, belongs to the arum family and has its small flowers arranged on a spadix, shielded by a spathe, the spadix being yellow and the spathe white. The leaves are heart-shaped and the berries red. It grows in bogs from Nova Scotia to Hudson Bay and is in bloom in May and June.

3. Skunk Cabbage [*Symplocarpus foetidus* (L.) Nutt.] sends up its spathe before the leaves. The spathe is purple and greenish yellow mottled, incurved in form, and hides the short spadix. It grows in bogs and wet soil from Nova Scotia to Ontario and is in bloom in March and April.

4. Western Skunk Cabbage [*Lysichiton camtschaticense* (L.) Schott] has a spathe of lemon yellow colour, flowers crowded on the spadix and leaves one to four feet long. It grows in marshes and wet soil in British Columbia and is in bloom in April and May.

5. Fritillary or Mission Bell (*Fritillaria vudica* Spreng.), a western species of the lily family, sends up a slender stem, four to eight inches high, from a small bulb. The leaves are two in number and narrow. The flower is solitary, nodding, and of a yellow colour. It grows on the plains in Alberta and British Columbia and is in bloom in May.

6. Western Yellow Adder's Tongue (*Erythronium grandiflorum* Pursh) is a western species of the lily family. Its leaves are two in number, not mottled. The bright yellow flowers are from two to four in number, but sometimes solitary. It is found in the spring in British Columbia.

7. Clintonia, or Queen Cup (*Clintonia uniflora* Kunth), a species of the lily family found in woods from Newfoundland to the Rockies and northward, bears a white flower. Its berries are blue. Its leaves are two in number and glossy.

8. Star-flowered Smilacina [*Smilacina stellata* (L.) Desf.] is a species of the lily family which bears from six to twenty small white flowers at the end of a leafy stalk. The leaves are slightly clasping and the berries green with dark red stripes. It is found in May and June from Newfoundland to British Columbia.



SPRING FLOWERS



- 1. Jack-in-the-Pulpit.
- 2. Water Arum.
- 3. Skunk Cabbage.
- 4. Western Skunk Cabbage.

- 5. Fritillary.
- 6. Western Yellow Adder's Tongue.
- 7. Clintonia.
- 8. Star-flowered Smilacina.

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## SPRING FLOWERS

1. False Solomon's Seal [*Smilacina racemosa* (L.) Desf.] is a perennial species of the lily family which grows from a fleshy underground rootstock. The leaves are numerous, oblong and pointed. The flowers are also numerous, white in colour and small. It is found in moist woods and thickets from Nova Scotia to British Columbia and is in bloom in May and June.

2. Solomon's Seal [*Polygonatum biflorum* (Walt.) Eli.] is a perennial species of the lily family with simple stems from a creeping, knotted rootstock. The leaves are oblong, pointed, nearly sessile, and hairy beneath. The flowers are usually two on a stalk, greenish white, narrowly bell-shaped and nodding. It grows in woods and thickets from New Brunswick to Ontario and is in bloom from April to July.

3. Painted Trillium (*Trillium undulatum* Willd.) is a species of the lily family which throws up a single stalk bearing three leaves, ovate and taper pointed, arranged in a circle near the top. The flower is white in colour, painted with rose towards the centre, the petals being wavy margined. It is found in the woods in May and June from Prince Edward Island and Nova Scotia to Ontario. Scouts should see how many other kinds of trillium they can find.

4. Ram's Head Lady's Slipper (*Cypripedium arietinum* R. Br.) is one of about fifty species of the orchid family found in different parts of Canada, many of which are among our most beautiful wild flowers. The stem of this species is slender and hairy and grows to a height of from one to two feet; the leaves are three to four in number and nearly smooth. The plant bears but a single flower. The sepals and petals are madder-purple, the lip whitish veined with crimson. It grows in swamps and rich woods from Quebec to Manitoba and is in bloom in May and June. If you should find a group of these lovely little orchids do not disturb the roots and only take one flower for a specimen for they are quite rare.

5. Yellow Lady's Slipper (*Cypripedium parviflorum* Salisb), also of the orchid family, is larger than the preceding. The sepals and petals are greenish, painted with madder, the lip bright yellow. This species is sweet scented. It grows in bogs and woods from Nova Scotia to Ontario and is in bloom from May to July.

6. Northern Lady's Slipper (*Cypripedium passerinum* Rich.), another species of the orchid family, has sepals and petals of greenish white and the lip white striped and spotted with bright madder. It is found in damp, shady places from Ontario to Alberta and British Columbia and is in bloom in different parts between May and July. Scouts should see how many other species they can find of wild orchids.

7. Wild Ginger (*Asarum canadense*, L.), a species of the birthwort family, is a perennial which grows from a creeping rootstock possessing the odour of ginger. The leaves are two in number, heart-shaped, soft and hairy with a single reddish, bell-shaped flower between the two leaf-stalks. It is found in rich woods from New Brunswick to Manitoba and flowers from April to May.

8. Spring Beauty (*Claytonia virginica* L.), called by the Indians "Miskodeed," is a species of the purslane family. This is a slender simple-stemmed perennial bearing two long narrow leaves and a loose cluster of white or pale pink flowers veined with deep rose. It grows in moist open woods from Nova Scotia to Saskatchewan and is in bloom from March to May. (See also p. 151.)

9. Hepatica (*Hepatica triloba* Chaix), one of the earliest of spring flowers, is a species of the buttercup family. The leaves all grow from the base and are thick and evergreen, with three rounded lobes. The flowers are white, pink, blue or purple. New leaves just unfolding are covered with silky hairs. It is found in the woods from Nova Scotia to Manitoba and is in bloom from March to May.

SPRING FLOWERS



1. False Solomon's Seal.
2. Solomon's Seal.
3. Painted Trillium.
4. Ram's-head Lady's Slipper.
5. Yellow Lady's Slipper.

6. Northern Lady's Slipper.
7. Wild Ginger.
8. Spring Beauty.
9. Hepatica.

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## SPRING FLOWERS

1. Pasque Flower or Crocus-anemone [*Anemone patens* L. var. *Wolfgangiana* (Beas.) Koch.] is sometimes called the "prairie crocus," which is very misleading as it is not a crocus at all but a species of the buttercup family. It is a perennial and is covered with fine silky hairs, the leaves being finely divided into narrow lobes. Like the other anemones it has no petals. The sepals are large and showy, from five to seven in number, and whitish to violet-blue in colour. The seeds have long feathery tails. It is found on the prairies from Manitoba to British Columbia in March and April.

2. Marsh-marigold (*Caltha palustris* L.), a species of the buttercup family, is a smooth perennial with hollow furrowed stems. The leaves are round or kidney-shaped, wavy, toothed or nearly entire. The sepals are bright yellow in colour. It is found in swamps and wet meadows from Newfoundland to Saskatchewan and blooms from April to June. The marsh-marigold is often incorrectly referred to as a "cowslip."

3. Wild Columbine (*Aquilegia canadensis* L.) is an attractive species of the buttercup family. It is perennial with compound leaves and lobed leaflets. The flowers are scarlet, yellow inside and nodding. The spurs are nearly straight and the stamens and styles longer than the sepals. It is found in the spring on rocks and in open woods from Nova Scotia to the North West Territory.

4. Blood-root (*Sanguinaria canadensis* L.) is a species of the poppy family, is a low perennial which grows from a thick rootstock filled with a red-orange poisonous juice. The leaves are palmately lobed and folded around the flower-bud to shield it from the spring winds. The flowers are white in colour, the two sepals dropping off when the flower opens. The seed pod is long and narrow, the seeds themselves being red-brown and glistening, with a large crest. It is found in open rich woods from Nova Scotia to Manitoba and is in bloom in April and May.

5. Dutchman's breeches [*Dicentra Cucullaria* (L.) Bernh.], a favourite spring flower, is a species of the fumitory family. This is a very delicate, stemless perennial, sending up from a cluster of small seed-like tubers, the finely cut leaves and slender stalk, bearing from four to ten oddly shaped white flowers tipped with pale yellow. It is found in rich woods from Nova Scotia to Lake Huron and is in bloom in April and May.

6. Trailing Arbutus (*Epigaea repens* L.), often called the Mayflower, is a species of the heath family. It is a low trailing, shrubby, rusty-hairy plant with evergreen leaves. The flowers are exceedingly sweet-scented and are white, cream or rose in colour, tubular and five-lobed. It is found in sandy woods or rocky soil under pine trees from Newfoundland to Saskatchewan and blooms in April and May. Trailing arbutus is one of the most attractive of our wild flowers.

7. Bearberry [*Arctostaphylos Uva-ursi* (L.) Spreng.], another species of the heath family, is a trailing plant with thick evergreen leaves about an inch long and a third of an inch wide, on very short, hairy stalks. The flowers are few in number, white and clustered. The fruit is a rich red in colour, but insipid and dry. It is found in dry, sandy or rocky soil from Labrador to British Columbia and is in bloom in May.

8. Starflower [*Trientalis americana* (Pursh) Pursh], a species of the primrose family, is a low perennial spreading by very slender rootstocks. The leaves appear in a circle at the top of the slender stem, and are long and narrow, tapering at each end, and somewhat unequal in size. The flowers are few in number, white and star-shaped. It is found in the woods from Labrador to Manitoba and is in bloom in May and June.

SPRING FLOWERS



- 1. Pasque flower or Prairie Crocus.
- 2. Marsh Marigold.
- 3. Wild Columbine.
- 4. Bloodroot.

- 5. Dutchman's Breeches.
- 6. Trailing Arbutus.
- 7. Bearberry.
- 8. Starflower.

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## SUMMER FLOWERS

1. Arrowhead (*Sagittaria latifolia* Willd.), a species of the water-plantain family, is a perennial marsh or water plant. Its flowers are bright white, with yellow stamens, in clusters of three at intervals up the stalk. The leaves are arrow-shaped and very variable in size. It is found in water or wet places throughout Canada, except in the extreme north, and is in bloom between July and September.

2. Western Lily [*Lilium parviflorum* (Hook.) Holtz], (*L. Columbianum* Henson), a British Columbia species of the lily family, is a tall slender perennial springing from a scaly bulb. The flowers are rich yellow or orange, spotted with purple, nodding and having the six perianth leaves turned back. The leaves are mostly in whorls. It is found in summer on the alpine slopes and meadows of British Columbia. This is a very handsome wild flower and is sometimes called the "wild tiger lily." (See also p. 151.)

3. Wild Yellow Lily (*Lilium canadense* L.) is a beautiful nodding, yellow lily which is often cultivated. The flowers are narrowly bell-shaped with recurved spreading, perianth leaves, spotted with orange or brown. It is found in summer in moist meadows and bogs in Quebec and Ontario.

4. Edible Camassia (*Camassia quomash* Greene.) is a perennial plant having a stem from one to two feet high which springs from a rather large coated bulb. The bulb is edible, but care should be taken to distinguish it from the poisonous bulbs of the "death camas." The flowers are rich, bright, purplish-blue, fading quickly. One of the perianth leaves stands apart from the other five. The flower stalk rises above the grass-like leaves. It is found in summer in grassy bluffs and meadows in British Columbia. (See also p. 152.)

5. Indian Cucumber-root (*Medeola virginiana* L.) is a perennial herb with a simple, slender stem rising from a horizontal white tuber which tastes like cucumber. The leaves are from five to nine in number and grow in a circle near the middle of the stalk, usually with three smaller ones at the top surrounding a cluster of small greenish-yellow flowers with recurved perianth leaves. It is found in rich, damp woods in June from New Brunswick to Ontario. (See also p. 151.)

6. Blue Flag (*Iris versicolor* L.), one of the iris family, is a perennial with sword-shaped leaves and large showy flowers, springing from a thick, creeping rootstock which is poisonous. Scouts will find it interesting to discover, if they can, how the bees pollinate these flowers. It is found in wet places from Newfoundland to Manitoba and blooms in June and July.

7. Showy Lady's Slipper (*Cypripedium acaule* Mill), a species of the orchid family, is one of the handsomest of our wild orchids. There is usually a single flower, but sometimes there are two. These are white, the lip much inflated, and painted with rose. It is a perennial with thickish, fibrous roots, and grows in swamps and wet, mossy woods from Newfoundland to Manitoba. It is in bloom in June and July.

8. Pogonia [*Pogonia ophioglossoides* (L.) Ker.] is another beautiful orchid, one single blossom of this species having the perfume of a whole bunch of violets. The flowers are pale pink to deep rose in colour with a yellow crest on the lip. The plant has but a single oval leaf near the centre of the slender stalk. It is found from Newfoundland to Ontario and is in bloom in June and July.

9. Goldthread [*Coptis trifolia* (L.) Salisb.], a species of the buttercup family, is a low, smooth perennial, with long, thread-like, bright yellow, bitter rootstocks near the surface of the soil. The leaves are shining and evergreen, with three leaflets. The scape is slender, with one white flower. It is found in mossy woods and swamps from Labrador to Alaska, and is in bloom from May to July.

SUMMER FLOWERS



- 1. Arrowhead.
- 2. Western Lily.
- 3. Wild Yellow Lily.
- 4. Camassia.
- 5. Indian Cucumber-root.

- 6. Blue Flag.
- 7. Showy Lady's Slipper.
- 8. Pogonia.
- 9. Goldthread.

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## SUMMER FLOWERS

1. Cow Lily or Yellow Water Lily (*Nymphaea advena* Ait.), a species of the water lily family, is an aquatic perennial which springs from a thick creeping rootstock. The leaves are mostly floating and are of oval or oblong form with a deep cleft (sinus) at the base. The yellow flowers are rather coarse. The six sepals are unequal, the petals dwarf and thick, somewhat like the stamens, but shorter and arranged around the disc-like stigma. It is found in still or stagnant waters from Newfoundland and Nova Scotia to the Rocky Mountains.

2. White Water Lily [*Castalia odorata* (Ait.) W. & W.] has beautiful white, sweet-scented flowers. The leaves are round and float on the water. The flowers open very early in the morning and close in the evening. They are found on ponds and still or slow-flowing waters from Newfoundland to Manitoba. The season of bloom ranges from June to September. The seeds ripen under water.

3. Crinkle-root [*Dentaria diphylla* Michx.), also called pepper-root on account of its hot taste, is a perennial species of the mustard family, which grows from a long, crisp, edible rootstock. The leaves are two in number, each with three leaflets, about the middle of the stalk, which ends in a short cluster of white or pale purplish flowers. It is found in rich woods and thickets, and is in bloom from April to June in Quebec and Ontario. (See also p. 151.)

4. Pitcher-plant [*Sarracenia purpurea* L.] is a species of the pitcher-plant family and a plant of peculiar interest to Scouts because of the habit it has of trapping flies and other insects which enter it to sip the water it contains. The leaves are tubular, green, veined with crimson, and with a broad wing. They are lined inside with coarse, but sharp pointed bristles pointing down and on which flies, etc., are caught. The single flowers are of a handsome crimson and green colour. It is found in June in peat-bogs, from Labrador to the Canadian Rocky Mountains.

5. Wood Nymph or White Mountain Avens (*Dryas octopetala* L.) is a beautiful little species of the rose family, and grows close to the ground in sandy and rocky places. The flowers are white and about an inch across. The leaves are thick, green, shining above and densely, white-hairy beneath. The base of the leaf is almost straight or slightly heart-shaped, which is one of the distinguishing marks between it and the next species, with leaves tapering at the base. It is found from Labrador and Greenland, throughout Arctic America to the Rocky Mountains and blooms from June to August.

6. Drummond's Dryas, or Yellow Mountain Avens (*Dryas Drummondii* Rich.) another species of the rose family, found in Canada, has yellow flowers, and black hairy sepals. The fruit or seeds of both this species and also of the wood nymph (No. 5) are very interesting, having long feathery tails. It is found on gravel in Gaspe, Quebec, Anticosti and Labrador, and throughout Arctic America to British Columbia. It is in bloom from June to August.

7. Prairie Apple or Potato (*Psoralea esculenta* Pursh.), a species of the pea family, was formerly a staple of the Indian tribes for food purposes. It springs from a large starchy root or sometimes a cluster of roots. The stem is covered with whitish hairs. The leaves are compound with five leaflets, all from the end of the leaf-stalk. The flowers are bluish in colour and crowded in a dense spike. It is found in May and June in Manitoba, Saskatchewan and Alberta. (See also p. 151.)

8. Canada Violet (*Viola canadensis* L.) is, as its name indicates, a native member of the violet family. The plant is from eight to twelve inches in height and branched, the leaves broadly heart-shaped, jointed and saw-toothed. The flowers are white tinged with pinkish violet on the back and are found in forests or wooded uplands from New Brunswick to Saskatchewan and the Rocky Mountains. It is in bloom from May to July.

9. Bunchberry (*Cornus canadensis* L.), a perennial species of the dogwood family, is an herb with a woody base, springing from a nearly horizontal rootstock. The stem stands erect with a circle of oval leaves at the top. The flowers are very small, of greenish colour, and are formed in a close head surrounded by from four to six white bracts resembling petals. It is found in the woods from Newfoundland to Alaska and is in bloom from May to July.

10. Twin-flower (*Linnaea borealis* L. var. *americana*), a species of the honeysuckle family, is a slender trailing little evergreen plant with threadlike, upright stalks bearing two flowers. The flowers are bell-shaped, nodding, and pale pink to rose coloured. The leaves are rounded, oval, and slightly scalloped. It grows in moist woods and cold bogs from Newfoundland to Alaska and is in bloom from June to August.



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1. Cow Lily.
2. White Water Lily.
3. Crinkle-root.
4. Pitcher Plant.
5. Wood Nymph.

6. Drummond's Dryas or Yellow Wood Nymph.
7. Prairie Apple.
8. Canada Violet.
9. Bunchberry.
10. Twin-flower.

## SUMMER FLOWERS

1. Calypso [*Calypso borealis* (L.) Oakes] is a wonderful little species of orchid which grows from three to twelve inches high from a small bulb. The flowers have sepals and petals of pale or dark magenta. The lip is yellow with madder stripes and spots. A single leaf grows from the base. It is found in deep, mossy woods across the continent, northward, and is in bloom from May to July.

2. Sundew (*Drosera rotundifolia* L.) is a curious little species of the sundew family which lives on insects. The leaves are clothed with bristles each exuding a drop of shining fluid which attracts insects. The latter are caught and held down by the bristles which fold over them. The flowers are white and small, opening only in sunshine. It is common in peat bogs and moist, sandy soil from Labrador to Alaska, and is in bloom from June to August.

3. Fireweed or Great Willow-herb (*Epilobium angustifolium* L.) is a showy perennial species of the evening primrose family which grows from two to eight feet in height. The leaves are long and pointed, the flowers pale or dark magenta and borne in an elongated cluster. It is found in clearings and newly burned lands from Greenland to Alaska and is in bloom in July and August.

4. Pipsissewa or Prince's Pine [*Chimaphila umbellata* (L.) Pursh] is a species of the heath family. The stem is leafy and from four to ten inches high, the leaves long, wedge-shaped and saw-toothed. The plant bears from two to eight flesh coloured flowers. It is found in dry woods from Nova Scotia to British Columbia, and is in bloom from June to August.

5. Pyrola or Shin-leaf (*Pyrola elliptica* Nutt), another species of the heath family, is a low perennial with running, underground shoots, bearing a cluster of evergreen leaves and a simple, slender stalk of nodding white flowers. It is found in dry woods and thickets from Quebec to British Columbia and is in bloom in June and July.

6. Indian Pipe or Ghost-plant (*Monotropa uniflora* L.), a species of the heath family, is a plant entirely white, but which turns black on drying. The leaves are reduced to mere scales. This peculiar flower grows in dark and rich woods across the continent, and is in bloom from June to August.

7. Labrador Tea (*Ledum groenlandicum* Oeder), a species of the heath family, is a low, evergreen shrub. The leaves are thick, with rusty wool beneath, the margins entire and rolled under. The flowers are white and are borne in fragrant, roundish clusters. It grows in bogs and damp thickets from Labrador to British Columbia and is in bloom in June and July.

8. Sheep Laurel (*Kalmia angustifolia* L.), a species of the heath family, is an evergreen shrub. The leaves are entire, leathery, opposite or in threes, bright green above and pale beneath. The crimson flowers are clustered, appearing later than the green shoots of the season. It is found on hillsides, pastures and bogs from Newfoundland to Hudson Bay and is in bloom in June and July.

9. Closed Gentian (*Gentian Andrewsii* Griseb.), a species of the gentian family, is a stout, smooth, perennial with a simple leafy stem. The leaves are ovate and narrowed or rounded at the base. The flowers appear in stiff clusters of deep blue, rarely of white, with closed corolla. It is found in moist soil from Quebec to Manitoba and is in bloom from August to October.

10. Butterfly-weed or Orange Milkweed (*Asclepias tuberosa* L.), a species of the milkweed family, is a leafy perennial with showy umbels of orange flowers. The seeds are flat with tufts of long, white, silky hairs. It is found in fields and banks in Ontario from June to August.

11. Bladderwort (*Utricularia vulgaris* var. *americana* Gray), a species of the bladderwort family, is an odd little plant, floating horizontally beneath the water, only half of the stem with the orange-yellow flowers showing above the surface. The leaves are very finely dissected, bearing many bladders. These bladders have trap-doors which open inwards and trap very tiny, aquatic animals upon which the plant lives. It is found in sluggish waters from Newfoundland to the Yukon from June to August.

12. Brown-eyed Susan (*Rudbeckia hirta* L.), a species of the thistle family, is a biennial daisy. Its stem is rough, bristly and hairy. The flower heads are large, with yellow rays and purplish-brown centres. It grows in dry soil from Quebec to Manitoba and is in bloom from June to September.

SUMMER FLOWERS



- 1. Calypso.
- 2. Sundew.
- 3. Fireweed.
- 4. Pipsissewa.
- 5. Shimleaf.
- 6. Indian-pipe.

- 7. Labrador Tea.
- 8. Sheep Laurel.
- 9. Closed Centian.
- 10. Butterfly-weed.
- 11. Bladderwort.
- 12. Brown-eyed Susan.

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## AUTUMN FLOWERS

All the plants on this page belong to the thistle family or composite family. Although some of them bloom in the summer they are all to be found in flower in the autumn as well.

1. Boneset or Thoroughwort (*Eupatorium perfoliatum* L.) is a stout, hardy plant, two to five feet high. The leaves are opposite and joined together at the base. The flowers are white and numerous in small heads crowded together. It is found in wet places from Nova Scotia to Manitoba and is in bloom from July to September.

2. Gumweed [*Grindelia squarrosa* Pursh) Dunal] is a coarse sticky plant with wedge-shaped to oblong leaves slightly saw-toothed. The flowers have both disk and rays of yellow. It is found in dry soil from Manitoba to British Columbia and occasionally in Ontario and is in bloom from July to October.

3. Canada Goldenrod (*Solidago canadensis* L.) has a slender stem, smooth and hairy above, and grows to a height of from one to five feet. The leaves are thin, three-nerved, entire or saw-toothed. The flower heads are very small and are arranged in a showy panicle. It is found in rich soil and thickets from the Atlantic to the Pacific and is in bloom from August to October.

4. New England Aster (*Aster novae-angliae* L.) is one of the most beautiful of our wild asters and is often cultivated. The stem is stout, from two to eight feet high and very leafy. The leaves are entire, thin, clasping the stem by a heart-shaped base. The flower heads are large and numerous, violet-purple with yellow centres. It is found in fields and along swamps from Quebec to Saskatchewan and is in bloom from August to October.

5. Purple Cone-flower [*Brouneria angustifolia* (D.C.) Heller] is a handsome perennial, often cultivated. The flower heads are large with purple or paler rays and dark purplish centres. The leaves are three-nerved and entire. It is found in dry soil in Saskatchewan from June to October.

6. Prairie Cone-flower [*Lepachys columnaris* (Sims) T. and G.] is another attractive perennial with a gray-green foliage, yellow drooping rays and grayish disc. It is found in the prairies from Manitoba to British Columbia and is in bloom from June to September.

7. Sneezeweed (*Helenium autumnale* L.) is a perennial plant having numerous and showy flower heads. The disk is round and yellow, the rays also yellow. The leaves are mostly toothed. It is found in river banks and wet ground from Quebec to Manitoba and is in bloom from August to October.

8. Gaillardia (*Gaillardia aristata* Pursh) is a very handsome flower and, like sneezeweed, often cultivated. The disk flowers are brownish-purple. The rays are yellow and three-cleft. It is found on the prairies of Manitoba, Saskatchewan, Alberta and British Columbia and occasionally eastward, and is in bloom from June to October.

9. Yarrow (*Achillea Millefolium* L.). There is something very attractive about the yarrow with its small flowerheads arranged in a broad flat-topped cluster, and its finely dissected leaves. Yarrow is common throughout eastern Canada and is in bloom from June to November.

AUTUMN FLOWERS

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- 1. Boneset.
- 2. Gumweed.
- 3. Canada Goldenrod.
- 4. New England Aster.
- 5. Purple Cone-flower.

- 6. Prairie Cone-flower.
- 7. Sneezeweed.
- 8. Gaillardia.
- 9. Yarrow.

## CANADIAN ANIMALS

Nature in many interesting forms is very close at hand in Canada; even in busy towns and cities the call of the wild sounds plainly within hearing of human ears so that there is little difficulty anywhere in Scouts gaining first-hand acquaintance with the teeming wild life all about them. The bookstore or the library shelf will furnish many thrilling adventures and accounts of wild life. What a story it would be, by the way, if the animals could tell their side of the tale! But still more thrilling than reading is to be introduced by personal experience to the pleasures of hunting.

The chief enjoyment of hunting is the adventurous life in the woods, rather than the mere shooting of animals. In the case of big game there is the chance of the animal hunting you instead of you hunting him. There is the interest besides of tracking him up, stalking him, watching all he does and learning his habits. No true Scout will kill any animal, unless there is some genuine necessity for doing so, and in that case he will kill it quickly so as to give as little pain as possible.

In studying animals you get to like them more and more and you will soon find that you don't want to kill them for the mere sake of killing. In fact, many hunters nowadays prefer to shoot their game with the camera instead of the rifle, for they find that thereby they obtain more permanently interesting results. If you are lucky enough to own a camera, don't spend all your spare time and cash in reproducing familiar scenes or posing your friends for portraits in stained glass attitudes. Rather strike out on a new path and see what you can accomplish by study and practise in photographing from life animals, birds, and other forms of nature. Let it be understood, though, that it takes infinitely more patience and skill to shoot animals with a camera than with a magazine rifle. Here is a branch of art which has not yet passed the pioneer stage and in which there is still plenty of scope for discovery.

An adventurous hunter once had the following experience snapshooting an elephant in East Africa. He had just set up his camera and covered his head with the cloth, so as to focus the camera, when his native attendant cried, "Look out, sir!" and started to run. The hunter at once poked his head out from under the cloth to find a great elephant coming straight for him, only a few yards off. So he just pressed the button and then ran away too. The elephant rushed up to the camera,

stopped, and seemed to recognize that it was only a camera after all, and smiling at his own irritability, lurched off into the jungle again.

There is no risk of encountering any elephants in the Canadian woods but a like adventure might occur in trying to snapshot a moose or bear. So be careful.

Unfortunately, much of the world's big game is already gone forever; yet enough wild animal life remains in every continent to make its conservation worth while. Boy Scouts can, if they will, wield an enormous influence in behalf of the protection of animals and in support of the policy of conservation. The destruction of wild birds, beasts and fishes within recent years has been wasteful and wicked. Let the Boy Scouts of to-day join hands in conserving what is left in order that the future generations may not be deprived of these interests.

If we want to study animals there is no need at the outset to travel far afield for we cannot do better than learn something about the habits of the domestic animals about us—the horse, the dog, the cat, for example—and when we have done so the life of the wild will be more intelligible to us than it was before.

#### The Horse

Scientists tell us that the modern horse is descended from a five-toed beast, no larger than a fox terrier, and they are able to point out the remains of all five fingers and toes on the fore and hind legs of the present day horse.

Solomon, we are told, had 40,000 stalls of horses for his chariots and 12,000 horsemen. Among the Greeks the people of Thessaly probably were the first to turn horses into the service of war; from this arose the fable that Thessaly was originally inhabited by centaurs, half man and half horse.

Every Scout ought to know enough about horses to be able to water, feed, groom, harness and drive them, with something besides about what to do when they show signs of going lame. When you harness a horse for driving see to it that you avoid that cruel abomination, the check rein.

#### The Dog

The dog has been known from early times as the friend of man, and both for affection and intelligence stands in the very forefront of the brute creation. Dogs would appear to have been on friendly terms with mankind even in prehistoric times,

and among some of the ancient nations the dog was worshipped as a god.

There is a very large number of so-called breeds of dogs but if specimens of all the breeds were allowed to run wild on some lonely island there is little doubt that all differences between breeds would quickly vanish and the offspring would revert to the wolf-like, half-wild dog which is found in such immense numbers in eastern cities. In many of these cities dogs are the only scavengers.

Of particular interest to Canadians are the Eskimo dogs "huskies," found in the Arctic regions of North America. Apart from their assistance in hunting seals, polar bears and reindeer, the Eskimo and all other residents of the far north are dependent on them for the haulage of their sleds from one point to another, and with good sleighing, six or seven huskies will draw from eight to ten hundred weight at a speed of seven or eight miles an hour for hours at a time, and up to ten miles an hour with a lighter load.

#### The Cat

The cat, the most familiar of our household pets, was a domestic creature in the days of the Egyptians, yet has retained throughout the centuries the hunting proclivities of its original stock and performs useful service in keeping down the pest of rats and mice about our homes. Unfortunately, cats are very destructive of bird life.

#### \*WILD ANIMALS

The following is a description of certain animals at present found in various parts of Canada, omitting some that are already well and widely known.

#### THE CAT FAMILY

##### The Puma, or Mountain Lion

The largest member of the cat family native to Canada is the puma, panther or cougar, which in the West is generally known as the "mountain lion." This animal formerly inhabited both North and South America, from southern Quebec and British Columbia to Patagonia, and from the Atlantic to the Pacific coasts. Although it is no longer found in eastern Canada or in the eastern United States, it still ranges from

\*The drawings accompanying the following notes on various Canadian animals are with a few exceptions reproduced by permission from the Handbook for Boys of the Boy Scouts of America.



British Columbia to Patagonia over a larger extent of territory than any other American wild animal. The puma is equally at home, as it would appear, in the severe winter climate of



Puma, Cougar, or Mountain Lion ♂  
Total length 8 ft. 9 in.; tail, 3 ft.

the snow-clad Rockies and Andes; in the arid, treeless part of the south in the United States and desolate plains of Patagonia; and in the steaming, tropical forests of Central and South America. Mountain lions vary from 150 to 200

pounds in weight and from seven to nine feet in length. Doubtless, the name lion has been given to them on account of their tawny colour rather than because of their courage. They are most destructive of deer, sheep, colts and cattle, and have been hunted as pests by Government hunters in the western States. Like the wolf, the puma is afraid of man, and authentic cases of its attacking human beings are exceedingly rare.

**The Canada Lynx**

There are two types of lynx in North America, the bay lynx, known as the bobcat or wildcat, of eastern North America, which is represented in Nova Scotia, Florida and the West by allied varieties, ranging southward into Mexico, and the Canada lynx, a somewhat handsomer animal, which is, as its name indicates, the typical lynx of this country, although specimens are also found in the western mountains as far south as Colorado and the Sierra Nevada.



Canada Lynx ♂  
Total length 40 in.; tail, 4 in.

The Canada lynx is pepper-and-salt-gray in colour, with long tufts of jet-black hair on the ear-tips, and possesses a cat-like head

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of exceptional beauty. Its fur is thick and warm, as it needs must be to protect it from the winter's cold, and when food perchance is scarce and it must search night after night for its prey. Lynx live on the smaller animals and birds, sometimes also killing mountain sheep and small deer, but, contrary to popular belief, do not attack people. Lynx-eyed is an expression signifying exceptional keenness of sight. The ancients believed these creatures could see through all substances.

### THE DOG FAMILY

#### The Gray or Timber Wolf



Gray Wolf

Total length 4 ft. 9 in.; tail, 15½ in.

Among the Indians the best scout in the band was often known as "Gray Wolf" or "Black Wolf," or perhaps "Lean Wolf," as a tribute to his mastery of the art of scoutcraft. So in the Boy Scouts those who have proved themselves most proficient are honoured with the "Silver Wolf" decoration and the junior branch of the Boy Scouts, comprising lads between the ages of eight and twelve years, are known as the Wolf Cubs. In the wilds all the wolves in a pack work together under the direction of their leader, yet each member of the party has his own part to play. That is how they grew to become classed among the cleverest hunters and the most cunning of all the wild animals. At one time the gray or timber wolf, ranged in great packs over the entire North American continent. As the country became settled and the large game was gradually killed off, they retreated to the more remote districts. Guns, traps, dogs and poison have all been employed against them and the public authorities both in Canada and the United States have stimulated their pursuit by the payment of bounties and even by the employment of government hunters. Yet large numbers of wolves continue to exist in the northern forests, on the western plains, and in the foothills of the mountains, where they destroy every year very many big game such as moose and deer, and when these grow scarce,

prey on the domestic animals. How skilful they have become in eluding capture is shown by the fact that in European countries like Russia, Germany, and France wolves are still numerous enough, when driven to desperation by want of food in the severity of winter, to menace the lives of the peasantry. In England, the month of January was known as "wolf month" among our Anglo-Saxon forefathers, "because people are wont in that month to be more in danger to be devoured of wolves than in any season of the year."

Gray wolves seem to mate permanently and rear from eight to twelve cubs in a litter, both parents sharing the duty of protecting the young and providing for their living until they are taught to hunt and otherwise to look out for themselves. The wolf is closely related to the dog, and cases are said to occur of wild dogs being adopted into the wolf pack. According to a Roman legend, Romulus, the founder and first King of Rome, was suckled along with his twin-brother Remus, by a she-wolf.

The "barren lands," bordering on the Arctic coast of Alaska and Canada, and thence across the intervening islands to the north coast of Greenland, are the abode of a white wolf, known as the Arctic wolf, which feeds on the caribou and musk-ox. The Arctic wolf has probably been developed under climatic conditions from the same original stock as the gray wolf. The prevailing colour of the latter is gray with more dusky patches on the shoulders, back and hips. They are about four feet nine inches in length and stand two feet two inches in height at the shoulders.

#### The Coyote

The coyote, a small species of wolf, is an animal of the prairie region and ranges from northern Alberta and British Columbia south to Central America. Outlawed by mankind, like their brethren the gray wolves, and hunted to earth by every conceivable method, their fleetness of foot and cunning have thus far enabled them to a large ex-



Coyote  $\frac{1}{2}$   
Total length 4 ft.; tail, 15 in.

tent to baffle human pursuit, and their plaintive howl still sounds at night in many lonely parts. The coyote is less courageous than the gray wolf, and around settlements is particularly destructive of poultry and livestock. In the unsettled districts they live on rabbits, ground squirrels and mice. Young coyotes are easily tamed and some of the Indian tribes, indeed, are not unfriendly to them. The Indian dogs are probably of coyote origin. The fur is yellowish-gray in colour, but of little value. Coyotes measure about four feet in length and twenty inches in height at the shoulders.

### The Fox



Red Fox  $\frac{1}{4}$

Total length 40 in.; tail, 15 in.

The red fox has a reputation for cunning which is well deserved, for his success in eluding pursuit and providing for himself even in settled districts, is well nigh incredible. His diet includes mice, birds, reptiles, insects and fruits. But when the chance offers there is nothing Reynard likes better than a fat fowl from the farmer's hen roost. The red fox is found all over North America, as far south as Georgia, and some idea

of the number captured may be gained from the fact that the fur dealers in London sold 156,141 red fox skins in 1917. The black fox is a colour phase of the red fox, being occasionally found in red fox litters. So highly, however, are black fox skins esteemed in the fur trade that specially fine ones have sold for more than \$2,500 and a number of black fox farms have been started for rearing these animals. Another colour phase is the "cross fox" which has a black band across its shoulders and another along the back. Still another phase is the "silver fox." The Arctic, or white fox, is found on the Arctic coast and only as a straggler in the interior of Canada. Specimens are, however, occasionally taken in northern Manitoba, Saskatchewan and Alberta. This creature is noteworthy among its kind on account of its protective colouring, being snow-white in winter and bluish gray or slaty in summer. The Arctic fox does not seem to be as keen-witted as his more

southerly cousins, but that may be due to his having fewer enemies and less competition to stir him in his race of life. A species of fox is found in Saskatchewan and Alberta, known as the "kit fox," or "swift," which is not much larger than a house cat. The fur of this animal is an attractive silver gray and buff yellow. It is strictly confined to the prairie regions and spends much of its time burrowing underground.

#### The Otter

This animal is taken in all parts of Canada. Although they are active enough on land to be able to keep well out of sight, they are only thoroughly at home when in the water, and there is no other



Otter ♀

Total length 3 to 4 ft.; tail, 13 in.

land animal that can equal the otter as a swimmer and diver. The feet, indeed, are so placed that they can almost perform the function of fins. Its home is generally a burrow by the water's edge from which it readily slides into the water either in seeking safety from pursuit or to obtain its favorite fish food.

#### The Mink



Mink ♀

Total length 21 in.; tail, 7 in.

The mink is a wonderfully expert hunter either by land or water and a creature of boundless resource in the face of danger. If water is near, he dives without a splash and swims away like a fish, rising to the surface only at intervals for an occasional peep until his safety is assured. Or,

if need be, he can climb a tree like a squirrel. Although short of leg he can run with incredible swiftness or slip into a tiny crevice for cover. But the mink is above all else a fighter. In warm weather he lives in the swamps and feeds on frogs, lizards, worms, etc. But for the most part he robs nests or kills

fish, rabbits, squirrels, meadow mice or birds, seemingly for very love of slaughter, and far beyond his requirements for food purposes. Mink are still found in many settled parts of the country. The fur is particularly esteemed for ladies' wear.

#### The Weasel

The weasel and the mink are closely related to one another the mink being, however, larger and brown in colour throughout the year, whilst the weasel turns white in winter and yields the fur known as ermine. So destructive are they of birds and the smaller animal life that when game is abundant they content themselves with sucking their victims' blood or else leave their prey untouched. In summer they are inveterate robbers of birds' nests.

#### The Wolverine



Wolverine  $\frac{1}{2}$   
Total length 30 in.;  
tail,  $8\frac{1}{2}$  in.

The wolverine, known in Europe as the "glutton," is the largest member of the weasel family and a creature of diabolical destructiveness and cunning. In form it is not unlike a small bear with a handsome fur coat of chestnut colour and a dark saddle on the back. So much is it hated and feared by the natives for its thievery and wanton destruction that many of the Indians and Eskimos actually believe it to be possessed of a devil and in some districts make offerings to propitiate its wicked spirit and to keep it from molesting their traps and caches of provisions. The wolverine is still quite common in northern Canada beyond the settled districts.

Still another member of the weasel family is widely distributed throughout Canada — the skunk—whose presence in the neighborhood is widely advertised by the suffocating smell this creature emits for its own protection whenever it is alarmed. Skunk fur is widely sold

#### The Skunk



Common Skunk  $\frac{1}{2}$   
Total length 24 in.; tail, 7 in.

by the dealers under the name of Alaska sable and gives excellent wear. Skunk farming has also been tried as a commercial venture. These animals are easily tamed. Their flesh is regarded as a delicacy by many woodsmen.

### THE BEAR FAMILY

Bears of one species or another are found in nearly all parts of the world excepting South Africa and Australia. North America is, however, particularly favoured by nature in the number and variety of its bear species.

#### The Polar Bear



Polar Bear ♂

Total length 7 to 10 ft.

In the far north we have the polar bears, which live on fish, seals and walrus, and inhabit the ice-fields and seashores along the whole northern edge of the continent, southward down to the centre of Hudson Bay. The polar bear is a handsomer and better proportioned animal than any

of the other members of the bear family. In winter the female retires to a sheltered spot on the ice or snow-covered coast, where her cubs are born and cared for. Many polar bears are taken each spring by the Eskimos along the Arctic coast. Happily, the species is secured from extermination through the inaccessibility of the regions that it inhabits.

#### The Grizzly Bear

The grizzly and big brown bear group has been separated into a large number of species. As a surviving remnant of one of the big game animals of the continent most famed in legendary lore and the historical accounts of the old scouts and explorers, the grizzly now deserves a certain measure of protection from extermination. The grizzly

of the early Indian days probably deserved a certain measure of its reputation for ferocity, but a century of contact with white men's firearms has taught the survivors prudence, and now the grizzly seldom, if ever, attacks man except in self-defense, or in alarm for its cubs. In a settled stock country it is out of place, but there are many rugged mountain



Grizzly Bear.  
Total length 7 to 9 ft.

districts in Canada where it may well be permitted to remain for the interest of coming generations.

#### The Black Bear

The black bear is at once the commonest and the most typical member of the whole bear tribe. When the first settlers came to this continent these bears were exceedingly numerous and, indeed, notwithstanding the persistent way in which they have been hunted, there are very few wooded districts of any large extent in which they are not still found. Black bears, although savage enough when attacked, or fighting for their cubs, will do all they can to keep out of a man's way and should be classed as game and protected as such except during specified open seasons. When hungry they will eat anything that lives or grows in the woods from berries and nuts (they are experts at tree climbing) to the flesh of the smaller animals. Their favorite relish, though, is wild honey. Cinnamon bears and the white bears found in the interior of British Columbia are colour phases of the black bear group. Sometimes cinnamon cubs are born in the same litter with black ones.



## The Raccoon



Raccoon ♂

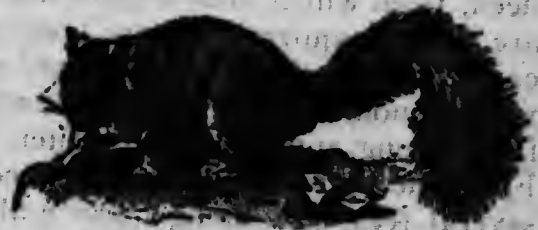
Total length 32 in.; tail, 10 in.

Raccoons are distant cousins of the bears and in northern parts hibernate like the bears during the colder part of the winter. They are most inquisitive by nature and are especially attracted by any bright or shining object. In fact trappers, well knowing this trait of "coon" character, often fasten a piece of tin to a trap so as to attract their attention. Although these animals are found in Canada they are for the most part of more southerly range and are most plentiful in the southern States where "coon" hunts have long been a favorite pastime among the darkies. The fur of the raccoon is too well known in Canada to call for more than mere mention.

## The Squirrels

Of all the wild creatures we possess in Canada there are none more companionable than the gray squirrels and the chipmunks, and there is no boy who knows anything about these little fellows that wouldn't rather have one for a pet than kill it for its tail.

With the least bit of encouragement the gray squirrels can be induced to establish themselves in our town and city parks, where their tricks provide a never ending source of interest. A few nuts or a piece of cake will quickly win their confidence. Or, if you have no bait along, you can watch them laying by their stores for the winter or caring for their families in the branches up aloft. Black squirrels, too, are not uncommon in some parts of Canada. The black squirrel is, however, identical with the gray, excepting as to the colour of his furry coat. Flying squirrels are found across Canada from coast to coast. They are not about much, however, in the daytime, being creatures rather of the dusk and the night. Flying squirrels



Gray Squirrel ♂

Total length 18 in.

are not, of course, able to fly like birds for they have no wings but only folds of skin which extend sideways when they stretch their legs and launch out into space from branch or tree-top. They are readily tamed and make most affectionate play fellows.

But what about the cunning red squirrels, the impatient boy reader is asking. Well, truth to say, this particular member of the squirrel family stands convicted of so many grave offences that he has forfeited all right to our respect. In the summer he robs birds' nests. Yes, there isn't a doubt of it; so look out for your bird boxes if there are any of these ruffians about. So firmly lodged is the thieving instinct in their breasts that they will rob their own blood relations' stores of provisions set by for the winter, even when they don't need the food, having plenty already of their own. And still, who is there couldn't help liking these lively little scamps in spite of all their wicked pranks for they seem the very embodiment of lively fun, of saucy impudence and tireless industry?

#### The Chipmunks

Save the chipmunks too, for the woods are lonesome, indeed, from which their chatter has been banished. Chipmunks are ground squirrels, whose homes are dug deep down in the earth beneath the groves of hardwood. Here they spend the winter months, wrapped in slumber; here they bring forth their young and find safe shelter whenever danger threatens. From the surface the burrow descends straight downward for several feet; then along horizontally a few yards and slightly upward to the chamber, which is roughly a couple of feet long, a foot wide and a foot in height, carpeted with soft grass. Usually there is at least one other passageway to the surface. But how is all this excavating done and where is the material deposited, for you will look in vain for it around the entrance? It is carried away in the animal's cheek pouches to a safe distance where it will provide no clue to the whereabouts of the burrow. Chipmunks are found across Canada from coast to coast.

#### The Spermophiles

In the Prairie Provinces the spermophiles are most commonly called "gophers," although "ground squirrel" is a more correct name. They dig deep burrows in the ground, and keep them open. Some of the species are very destructive to crops, digging up the fields, con-



Thirteen-Lined Spermophile  
Total length 10 in.

suming planted seed grain in the spring, and cutting down grain stalks later in the season. Some of them are found almost everywhere in the Prairie Provinces, and frequently three species are found in the same locality in the grain belt—Franklin's spermophile, or "gray gopher," which resembles a small gray tree squirrel, but has a smaller tail; Richardson's spermophile or "flickertail," a larger yellowish-clay coloured species; and the thirteen-lined spermophile or "striped gopher," which is readily known by its gaudy rows of stripes and dots.

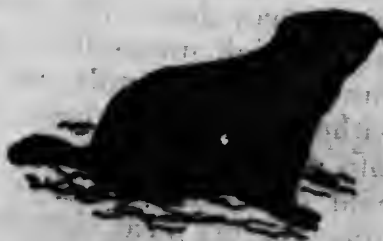
In British Columbia, the prairie ground squirrel is replaced by the Columbian ground squirrel, a dark-coloured species with reddish under parts. In some districts the ground squirrels do immense damage to grain crops, and farmers are obliged to make concerted wholesale efforts, at great expense, to keep them in check. The best natural checks are the large summer hawks of the prairie region—the rough-legged, Swainson's, and the red-tailed hawks, which are commonly known as "gopher hawks." Most up-to-date farmers are beginning to appreciate the incalculable assistance rendered by these birds, and protect them zealously.

#### The Pocket Gophers

The true gophers, or pocket gophers, have a more glossy, mole-like appearance. They have large cheek pouches opening outside of the mouth, and their fore feet have immense claws for digging. They are largely nocturnal and are seldom seen, although their presence is easily detected by the large mounds of granulated earth which are heaped up over the closed mouth of their subterranean burrows.

#### The Woodchuck

Woodchucks, also known as ground hogs, are among the most disliked of our wild creatures, on account of their destructiveness of crops, and their surly, cross-grained, lazy dispositions. If the European dormouse is, as the story books indicate, the sleepest creature in existence, the North American woodchuck at least beats it out in the duration of his winter nap for apparently he enjoys seven months unbroken rest. The wood-



Woodchuck

Total length 24 in.

chucks of eastern and central Canada are represented in Alberta, British Columbia and the Yukon Territory by several closely related species known as marmots or "whistlers."

#### The Badger



Badger  
Total length about 27 in.

Another burrowing animal, common in the Prairie Provinces, is the badger, which is really more at home underground than on the surface. So persistent is this creature in its search for food that it is said to make a fresh burrow every day and the speed with which it can dig its way into the earth as a means of escape from danger is truly wonderful. Unlike his English cousin, which is an animal of social and playful instincts, the Canadian badger is of solitary habit. When attacked he fights to the very last, no matter how unequal the combat, in fact, dies fighting.

#### The Porcupine

For the most part porcupines must lead a pretty happy existence, for the other wild animals generally leave them alone rather than run the risk of an encounter. One sometimes hears it said that porcupines fling their dart-like quills at an antagonist. But, of course, Boy Scouts know better than that. The truth is it is well nigh impossible to touch him when his quills are raised without some of them sticking into you. And woe betide the wild creature that pays such a price for his meal, for the quills are so barbed that they will not come out, but rather work farther inward with the sufferer's efforts to dislodge them until death results.



Canada Porcupine  
Total length 28 in.

The porcupine lives on leaf buds and bark. The barked trees in the woods proclaim his presence in the neighbourhood and, as he is a slow-moving animal, he is easily found and killed. In some of the provinces the porcupine is protected by law because it is the only animal of the northern woods that a lost man, in case of need, can kill with a club. They are sometimes found out in mid-winter, even up to the northern limit of tree growth, ploughing deep ditch-like trails in their slow progress through the snow. Besides the Canada porcupine a yellow-haired species is found in the West.

#### The Rabbits

Pursued in the wilds by hawks, owls, lynxes, minks, weasels, and a host of predatory foes, and in settled regions by dogs and hunters as well, the rabbits, by their rapid breeding and wonderful adaptability to changing surroundings, have held their own under most discouraging circumstances. Even on the "barren lands" of the polar regions and the northern islands the Arctic hare manages to dodge the wolf and fox and pick up a good living on the rock lichens.

In winter, when the snow is deep, starving rabbits often eat the bark of young fruit trees and berry bushes, as well as other saplings, but in many cases the damage attributed to them should be charged to the meadow mice, or voles.

The snowshoe rabbit, or varying hare, is found in several different varieties throughout Canada from Nova Scotia to British Columbia. The fur is white in winter and grayish brown in summer. This is the common rabbit in most parts of the Dominion, though the cottontail rabbit, which does not turn white in winter, is also found in southern Ontario and Quebec, and in parts of southern Saskatchewan and Alberta.

The jack rabbits of the plains of the west and southwest are still in the class of wild animal pests. The prairie hare, or prairie jack rabbit of the Prairie Provinces, is scarcely abundant enough to be a nuisance. It is easily known from the other rabbits of the temperate regions of Canada by its greater size.

Jack rabbits have a habit, when they are disturbed, of bounding up into the air for an observation glance in the direction from which



Jack Rabbit ♂

Total length 25 in.

any suspicious sound has come. The white hares sometimes practise a similar device for taking in the situation whilst they are running away from suspected danger.



Little Chief Hare, or Pika  
Total length 7 in.

These little animals, allied to the rabbits, inhabit the higher rock slides, and put up little hay-stacks of dried alpine plants for winter use.

The Scout who has the opportunity of ascending one of the higher mountains in the West, may hear the bleating call or perhaps see one of the curious pikas, or little chief hares.

#### The Beaver

The beaver, which often appears as the Canadian national emblem, is conspicuous among the forest folk for his industry and engineering skill. Beavers were so abundant on this continent in the early days that countless numbers were captured by the Indians and other trappers for export, and beaver skins took the place of money in the settlement of accounts. So great, indeed, has been the slaughter that their skins have greatly increased in price and the number now taken is relatively small. In the Algonquin Park in Ontario and other places where effective measures have been taken for their protection, they have become abundant and visitors may see their dams and lodges in many different lakes. Books have been written about the beavers, their dams, lodges, canals and love affairs. But space prevents our dwelling on the subject here at any length.



Beaver †  
Total length 44 in.

**The Muskrat**

Muskrat †  
Total length 24 inches

In form and in some of its instincts the muskrat resembles the beaver; but there is no family relationship between them. The muskrats are rats. The name muskrat is derived from their musky odour. Their fur is in constant demand and is sold under half a dozen different trade names.

**The Wood Rats**

In many parts of the mountains and foothills of the West are found different species of bushy-tailed wood rats. These animals build bulky nests among the rocks, and from their annoying habit of invading hunters' and trappers' cabins and carrying away large quantities of food as well as any article or implement light enough for them to move, are generally known as "pack rats."

**MICE, SHREWS AND MOLES**

While many Boy Scouts may never have an opportunity to see the big game animals of the country in a wild state, or take long and expensive trips into the wilderness, the Scout with a taste for nature study may have a chance to add something to our knowledge of our wild life while on tramps or camping expeditions near home. Most of the larger animals have been hunted and studied for a long time and their habits recorded in books. The birds fly before us every day and have had much written about them; but some of our commonest small mammals have little known of their habits and life histories, on account of their timid and secretive dispositions. Many of these little animals often become so abundant as to make themselves of serious concern to the farmer and gardener, and while some are of little importance to us directly, they form part of the food of hawks, owls, lynxes, minks and other fur-bearing animals. A boy with an enquiring mind may have the pleasure and honour of discovering some fact about these creatures that nobody ever knew before or, as the scientists say, "add to the sum total of human knowledge."



Jumping Mouse  
Length  $8\frac{1}{4}$  in.; Tail 5 in.

### Mice

Nearly any Canadian locality may have several species of native mice, besides the ever-present house mice. There is usually to be found a species of the graceful white-footed mouse, or deer mouse, a red-backed or pine mouse, voles or short-tailed meadow mice, and interesting long-tailed jumping mice. The mice are rodents, or gnawing animals, and are known by having two long chisel-like incisor teeth at the front of each jaw, like the squirrel or the beaver. Their habits of life in the woods and fields, and their adaptation to the ways of civilization, form interesting studies that can be carried on anywhere.

### The Shrews and Moles

At a careless glance, the shrews look much like mice, but belong to an entirely different group of animals—the insectivora, or insect eaters. They do not have chisel-like front teeth, and the teeth are, in fact, more like the teeth of the flesh-eating creatures. They live largely upon insects, although they often eat other things. All the species are of small size, have very small eyes, and usually an elongated nose or snout. Some species of shrews are the smallest of living mammals. The moles are usually larger, and have the fore feet broad, with large claws adapted for digging. Moles are not such great travellers as the shrews, and are seldom seen above ground.



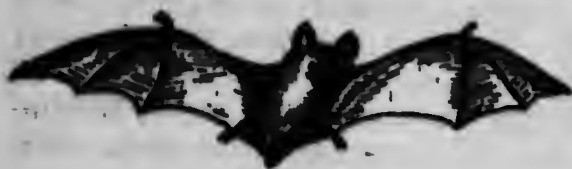
Star-nosed Mole.  
Length 6.80 in.

The star-nosed mole, shown in the accompanying illustration, is found from Manitoba eastward to the Maritime Provinces and is a most peculiar creature by reason of the twenty-



two soft fleshy tentacles around its nose, from which the species derives its name. Another odd characteristic of the star-nosed mole is the enlargement which occurs every fall of its long tail, continuing throughout the winter months. These moles are a dull brownish-black in colour, live as a rule in marshy ground and feed on insects and earth-worms.

#### The Bats



The Little Brown Bat  
Length  $4\frac{1}{2}$  in.

The bats are at once recognized by being the only animals that can really fly, as the flying squirrels can do no more than

coast or volplane from a higher to a lower level. In their structure they are close to the insect eating animals, such as the shrews and moles, and are not at all related to the birds. The bat's flying apparatus consists of greatly lengthened fingers, connected with each other and to the sides of the body by a thin skin or membrane, while the bird gets its supporting planes from broad quills laid side by side. The bat spends the day hanging head downward in some dark corner, or cave, or on the branch of a tree, and flies by twilight. Most localities in Canada have three or four species, but their distribution is not very well known and the bats deserve more study by naturalists.

#### THE DEER FAMILY

##### The Moose

North America was specially favoured by nature in the allotment to her of so many different species of the deer family, of which we have in Canada two species of moose (the largest of living deer), ten species of caribou, the elk, the white tails and the black tails.

The North American moose are almost identical with the European elk, although larger, and are, in-



The Moose.  
Height at shoulder 6 ft. or 18 hands

deed, the biggest and the most picturesque and distinctive game of the North American continent. Picture to yourself an animal taller than an ordinary horse, weighing more than half a ton, with a huge head carrying nearly one hundred pounds' weight of bony antlers, spreading four, five or six feet in width, and you have before you an outline of the bull moose. But very different is it to meet one of these impressive creatures face to face in the northern forests, or even to see it moving through the woods. So great has been the slaughter of moose for their hides and flesh since the settlement of Canada that the species is extinct in many parts of the Dominion, and will soon be so everywhere outside of the game sanctuaries maintained for the protection of wild life.

#### The Caribou



Black-Faced Caribou  $\frac{1}{2}$

Height at shoulder 4 ft. or 12 hands

The caribou group, of ten different species, resemble in appearance the European reindeer. The woodland caribou is found across the entire Dominion but has disappeared from the eastern parts of the United States, being neither as swift nor astute as other deer. The "barren lands" of Canada's far north, to the east of the Mackenzie River, are inhabited by millions of small caribou, on which the Eskimos and Indians of these parts mainly depend for their food supply. Reindeer meat from Alaska has been sold in considerable quantities in Seattle and,

doubtless, the caribou herds of northern Canada could be utilized in the same way, if proper methods of conservation were employed. At present the difficulty would be that of

transportation. The caribou hair is said to be the warmest garment worn by any wild animal.

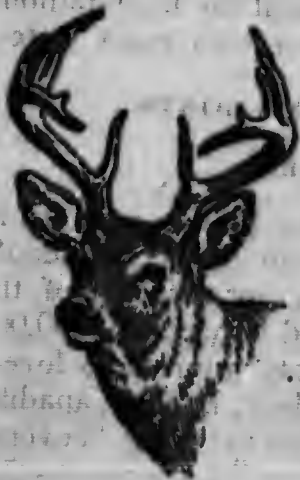
### The Elk

The Canada elk is, next to the moose, the largest member of the deer family, and by many regarded as the handsomest of all our hoofed game. Unfortunately, it is now almost exterminated, the mere remnants of once innumerable herds still surviving in the western provinces. Elk breed, however, very readily in captivity and as there are a number of captive herds, this noble species can with care be saved from extinction. A very large number of elk have been sacrificed owing to the senseless demand for the tusks of the male elk for charms or fobs. This species of deer is more properly called the wapiti, the elk of the Old World being more like our moose.



Elk or Wapiti ♂  
Height at shoulder  
5 ft. 4 in. or 16 hands.

### The White-Tailed Deer or Virginia Deer.



White-Tailed Deer ♂

So hardy, so prolific and so skilful in skulking and hiding is the white-tailed or Virginia deer that, according to Dr. W. T. Hornaday, it will be the last big game animal that will furnish sport in North America. It will survive long after all the North American deer have been exterminated. Ernest Thompson Seton says of it "the least migratory, the least polygamous, the least roving, as well as the swiftest, keenest, shyest, wisest, most prolific and most successful of our deer, it is the only one that has added to its range; that in the North and West has actually accompanied the

settler into the woods; that has followed afar into newly-opened parts of New England and Canada; that has fitted its map to man's and that can hold its own on the frontier." It is found from Nova Scotia westward to eastern British Columbia, but is essentially a creature of the woods and thickets, especially where these alternate with open glades. In the water it is so much at home that a hunter in a canoe must race to overtake one. The bucks only are provided with antlers. Bucks weight from 150 to 300 pounds.



**Mule Deer**  $\frac{1}{2}$   
Height at shoulder  
3 ft. 4 in. or 10 hands

#### **The Mule Deer or Black-Tailed Deer**

Mule deer are so called on account of their large donkey-like ears. They are a little larger than the Virginia, or white-tailed deer, of the eastern provinces and range from Manitoba westward to the Pacific coast. Their preference is, however, for rough broken countries as they are not good enough runners to hold their own in the open. An odd characteristic of the mule deer is its often fatal curiosity. When disturbed by a hunter it "buck jumps" high into the air, looking this way and that rather than making good its escape. The tail of the mule deer is white with a black tip. An allied species, known as the Columbian black-tailed deer, somewhat smaller in size, ranges from the Alaskan coast southward throughout the mountainous districts of British Columbia and the American coast states.

### **BUFFALO, MUSK-OX, SHEEP AND GOATS**

#### **The American Bison or Buffalo**

No large animals ever congregated within human memory in such stupendous numbers as the American bison, commonly known as the buffalo, and the practical extermination of the species, whose total number were estimated between 30,000,000 and 60,000,000, is fraught with melancholy interest to lovers of wild life everywhere. Early settlers, both in the Canadian and American west, spoke of the prairies as being "covered

with buffalo" and there is a record of a solid herd of buffalo on the Arkansas River in 1871, twenty-five miles wide by fifty miles deep, which contained, at a conservative estimate, four million head. When the transcontinental lines of railway were built trains were sometimes held up for hours at a stretch to let the buffalo pass. No wonder that the early settlers of the west thought it would never be possible to exterminate such a mighty multitude. The Indians of some tribes, in fact, believed that the buffalo issued from the earth continually and that the supply was, therefore, inexhaustible.



American Bison or Buffalo ♪

Height at shoulder 5 ft. 8 in. or 17 hands

Yet in four short years the bulk of the great southern herds passed out of existence in the United States and those farther north were not long in following. With such a lesson before our eyes, who can say that there will be an elk, moose, caribou, mountain sheep, mountain goat, antelope, or deer, of any kind, left living in a wild state within a comparatively few years. Happily, the Canadian and American governments have appar-

ently succeeded in preventing the complete extermination of the buffalo, but to do so have had to establish reserves and take care of what are left.

Canada has a herd of over 2,000 head at Wainwright, Alberta, and there are altogether about 3,200 in captivity with about 75 wild ones besides in the Yellowstone Park, and about 300 wild wood bison southwest of Great Slave Lake.

### The Musk-Ox



Musk-Ox  $\frac{1}{2}$

Height at shoulder 3 ft. 6 in. or  $10\frac{1}{2}$  hands

The musk-ox has already disappeared from its former ranges east of the Mackenzie River and Alaska and is at present found only on the "barren lands" north and northwest of Hudson Bay and across the Arctic archipelago to the north coast of Greenland. How these creatures manage to find a living by grazing in temperatures of sixty and seventy degrees below zero and throughout the Arctic darkness is certainly surprising. Doubtless, however, the high winds of the north sweep the snow from the rocky hillsides where they find a supply of mosses and lichens. Musk-oxen are comparatively small animals—only three feet six inches high at the shoulder

and combining something of the appearance both of sheep and of buffalo.

### The Rocky Mountain Sheep or Big-Horn



Rocky Mountain Sheep:  
Big-Horn ♂

Height at shoulders  
3 ft. 4 in. or 10 hands



Rocky Mountain Goat ♂

Rocky Mountain sheep are inhabitants of the clear cold upper world of the Rockies and are regarded by some as the finest hoofed game animals of North America. Their sure-footedness in flight on the steep mountain sides is a revelation, but truth to tell the very sight of one of these animals in the wilds is something of which few travellers can boast for the big-horn is keen-eyed and exceptionally difficult to approach. A beautiful white mountain sheep, smaller than the foregoing, is found in Alaska and the Yukon. Still another species of wild sheep, iron-gray in colour, and known as the stone, mountain or black sheep, is found in northern British Columbia and southern Yukon.

### The Rocky Mountain Goat or White Goat.

The only wild goats found in Canada are the mountain goats which live on the higher slopes of the mountains from southern British Columbia to Alaska. Their nearest blood relations are the chamois of the Alps and the serow of the Himalayas. They are pure white in colour, and a little smaller in size than the big-horn mountain sheep, having a height at the shoulders of forty-one inches and a weight of about three hundred pounds. With the mountain sheep they share the distinction of being the best rock climbers in America.

### The Prong-Horned Antelope

It is said that so numerous were the bands of prong-horned antelope on the great plains of the west in early days that they rivaled the buffalo in numbers. To-day it is but a handful that remain and these are constantly decreasing for so timid is it in disposition that it does not thrive in enclosures and it is only under conditions approaching its natural state that it will be saved from extermination. This animal is of special interest to naturalists because of its being the only living representative of its family group. The prong-horned antelope is in many ways



Prong-Horned Antelope  $\frac{1}{2}$   
Height at shoulder 2 ft. 10 in. or  
 $8\frac{1}{2}$  hands

intermediate between deer and cattle.



## CANADIAN BIRDS

Through the growing popular attention given to nature study of late years, a new and widespread interest has been awakened in bird life. Birds in all ages have been dear to the heart of man, on account of their beauty and their song. Apart, however, from their aesthetic value it has been proven that they serve a very useful purpose as well in the control of insect and weed pests, as scavengers, and otherwise. A land without birds would quickly become a land without either forests or farms.

Certain birds, such as wild duck, geese, turkeys, partridge, etc., from their food value, size, habits and distribution, are regarded as legitimate game, the pursuit of which is recognized as offering healthful sport. Other birds, according to proper standards, are either too small or else are entitled to protection for their value in the scheme of nature and should on these grounds be preserved.

A true sportsman does not shoot birds that do not have a fair chance and is careful besides not to carry his sport to excess. He kills only birds of kinds that can be eaten and would not think of indulging in pot shots at other feathered forms. If we are to preserve game birds for the pleasure and benefit of generations to come, the principle of the true sportsman must be upheld.

Too often in our game regulations it has been a case of locking the door after the horse has disappeared. The aim of the Boy Scouts training is, however, to teach boys to govern themselves in these, as in other matters, and unless, indeed, this is accomplished, laws will not in themselves suffice.

A man who studies birds is called an ornithologist. Mark Twain, the amusing yet kind-hearted American writer, says: "There are fellows who write books about birds and love them so much that they'll go hungry and tired to find a new kind of bird—and kill it. They are called 'ornithologers.' I could have been an 'ornithologer' myself, because I always loved birds and creatures. And I started out to learn how to be one. I saw a bird sitting on a dead limb of a high tree, singing away with his head tilted back and his mouth open—and before I thought I fired my gun at him; his song stopped all suddenly, and he fell from the branch, limp like a rag, and I ran and picked him up—and he was dead: his body was warm in my hand, and his head rolled about this way and that, like as if his

neck was broke, and there was a white skin over his eyes, and one drop of red blood sparkled on the side of his head,—and—laws! I couldn't see nothing for tears. I haven't ever murdered no creature since then that warn't doing me no harm—and I ain't agoing to neither."

#### Knowing the Birds

A good Scout is generally a good "ornithologer," as Mark Twain calls him. That is to say, he likes stalking birds and watching all that they do. He discovers where and how they build their nests. He does not, like the ordinary boy, want to go and rob them of their eggs or shoot them with sling or airgun, but he likes to watch how they hatch out their young and teach them to feed themselves and to fly. He gets to know every species of bird by its call and way of flying. He knows which birds remain all the year round and which come only at certain seasons, what kind of food they like best, and how they change their plumage, what sort of nests they build, where they build them and what the eggs are like. Of course the scientific study of birds could not be carried on without the collection of bird specimens, but the line needs to be sharply drawn between legitimate collecting for *scientific* purposes and useless slaughter.

#### Attracting Birds About the Home

Parks, gardens, and even the smallest of lawns, can be made attractive to bird life if we know how to go about it and are willing to provide the bare essentials of bird existence—food, water and safe nesting accommodation.

In summer the birds' great need in towns is water rather than food, and the simplest bath set out in the open and away from the danger of cats, is sure of patronage. In winter, too, birds can be easily attracted about the house by regularly providing for their modest food requirements.

A bird house or two about the home will also be found full of interest to the household as many varieties of Canadian birds have already shown their willingness to nest in these habitations.

There are practical directions given in a number of bird books which it is well for Scouts to consult for specific direction on the purchase or construction and placing of nesting boxes. These are of a wide range of architectural design, from empty tomato cans to hollowed out sections of small trees in

imitation of woodpecker nests, and including also the community or apartment plan of bird houses which are most attractive to martins on account of their highly developed social instinct.

It is wise to get practical directions about your bird house at the outset and in fact unless you do so you are apt to find that instead of attracting wrens or bluebirds, robins, flickers or purple martins it is overrun by noisy English sparrows. The latter were transplanted in successive importations from Europe half a century ago to the fertile soil of North America, as a means of assisting the native birds in controlling insect pests. The newcomers quickly made the most of their opportunities and there is no parallel anywhere for the rapidity of their increase and spread over the entire North American continent. Public sentiment has long since turned against them, but efforts made to control their spread have so far been of relatively small avail. A "wretched interloper," he has been called, destructive of fruits and garden produce, and almost without a friend among Canadian and American naturalists. And yet one cannot but admire his hardihood, his intelligence and the instinct by which, like a true Anglo-Saxon, he fits himself to the surroundings of whatever region he inhabits.

#### Many Forms of Bird Life

Birds are more widely distributed over the globe than any other form of creature, doubtless on account of their space-defying power of flight. There is, indeed, scarcely a corner of the world without them, and even in these it will usually be found that bird life has been banished through man's own criminal folly.

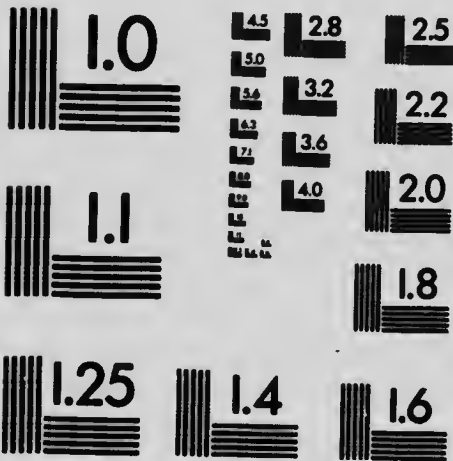
The bird life of the world has been classified by scientists into various orders such as diving birds, swimming birds, shore birds, etc., which in turn have been divided into families, genera and species. There are altogether between thirteen and fourteen thousand different species of birds. The same species are not, however, found everywhere and the total number found in Canada and the northern archipelago including Greenland, either as all the year round residents or as migrants, is 768.

The arctic, temperate and tropical zones all have their peculiar varieties, although many birds, through their habit of migration, summer in the north and winter in southern climes,



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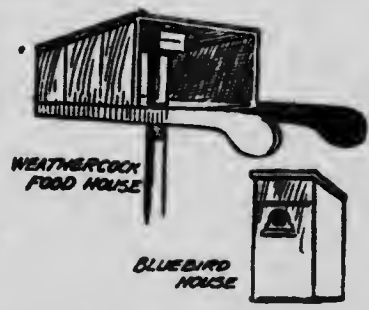
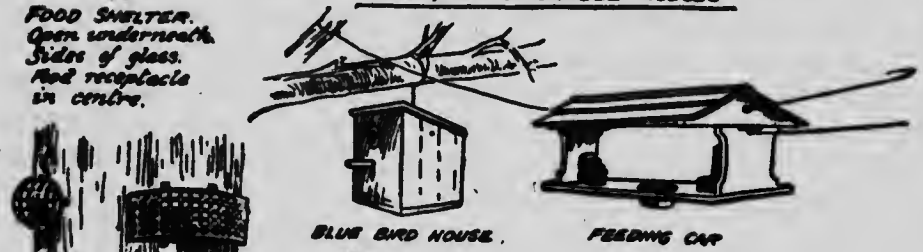
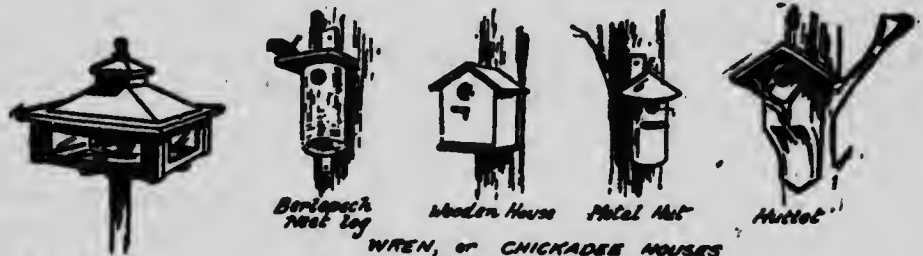
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travelling thousands of miles on the wing every year, and in a few cases almost from pole to pole.

America, with her great variety of climate and extent of territory, her extensive forests, broad prairies and innumer-

**Bird Houses Every Scout Can Build**



Bird houses. Drawn from the originals in the New York Zoological Park

\*By kind permission of the Boy Scouts of America.

able lakes and streams, has been provided with a bird life of great abundance and variety, including families like the tiny humming bird of 500 or more species, and the warblers, of 155 species in all, which are not found in any other part of the world.

A list of common Canadian birds has been kindly prepared by Mr. P. A. Taverner, Ornithologist of the Geological Survey, Ottawa, for the purposes of this book. This will be found at pages 291 to 295. Mr. Taverner has also prepared a colour key to some of the common Canadian birds, which appears at page 295.

#### Extinct Bird Species

There are feathered forms of other days among fossil remains in various climes which show that the same process of evolution has operated in bird life as in other forms of nature and it is claimed that our birds of to-day are, indeed, descended from reptiles.

Several fossil remains have been discovered in Bavaria of a bird known among bird scientists as *archaeopteryx*, which had what no bird has to-day, a bill full of teeth and a long bony tail like a lizard, with feathers on either side.

The island we now call Scotland, England and Wales once numbered among her wild life ostrich-like birds of no small size. There are remains, too, in South America of giant birds from seven to twelve feet in height, and in New Zealand of birds from ten to eleven feet high. How many species of bird life have passed into oblivion none can tell. One thing certain we do know that many more will go the way of the dodo, the great auk and the passenger-pigeon to extinction unless effective measures are taken for their protection.

The wild pigeon of North America, also known as the passenger-pigeon, was in our fathers' boyhood days one of the most notable birds of North America, alike for its beauty of form, its rapidity of flight, and its immense numbers. In point of numbers it is doubtful, indeed, in the middle of the last century if there was any parallel to this bird among the other feathered tribes of the earth. Audubon, the great American naturalist, has written of single flocks, which he had himself seen, of passenger pigeons numbering over a million birds, and Alexander Wilson, another distinguished naturalist of the last century, tells of a single flock, he himself saw, that measured 240 miles in length and contained on a moderate basis of calculation 2,230,272,000 birds.

The passenger pigeon ranged over the entire area of North America east of the Rocky Mountains and north towards Hudson Bay. Yet, through unrestricted slaughter, this wonderful food bird was brought to extinction within a single generation and large rewards offered within recent years have failed to lead to the discovery of a single member of this once innumerable species.

The Eskimo curlew, the trumpeter swan, the whooping crane and the Carolina parakeet are other North American birds which are now believed to be either extinct, or very nearly so.

#### Bird Protection Laws

Happily, a little more sense is being shown regarding the value of birds in these days than was the case in times past. Laws have been enacted in the different provinces of Canada, and in the states of the adjoining country, affording a measure of protection to game birds. Nearly all the Canadian provinces have laws too, protecting non-game birds.

An act was passed in Ontario in 1914 for the protection of wild birds in general, other than game birds, hawks, crows, blackbirds and English sparrows. Under this law persons destroying or capturing wild birds, or interfering with their nests, are subject to a fine of \$20 and, apart from the public authorities, the Canadian Society for the Protection of Birds is exerting itself to secure the observance of this statute.

A treaty has recently been signed between Great Britain and the United States for the protection of migratory birds against extermination through lack of adequate protection during the nesting season, or while on their way to and from their breeding grounds. The treaty is designed to prohibit the shooting of migratory birds in spring; to make the close seasons approximately equal in length in different parts of the country and to limit the seasons during which game birds may be shot to a maximum of from two months to three and a half months. A close season of five years has been declared on certain migratory game birds, particularly shore birds. The treaty also forbids absolutely the killing at any time of bobolinks, catbirds, chickadees, cuckoos, flycatchers, grosbeaks, humming-birds, kinglets, martins, meadow larks, night hawks, or bullbats, nuthatches, thrushes, whip-poor-wills, woodpeckers, wrens, and all other perching birds which feed entirely or chiefly on insects.

Apart from the game wardens and police authorities



charged with the observance of the bird laws, it is, however, necessary that their efforts should be supported by the public sentiment of the community at large and Boy Scouts can do a great deal to assist in the protection of our feathered friends from wanton destruction.

#### Christopher Columbus and the Birds

Among the records connected with the discovery and exploration of America there are many references to the bird life of the New World. There were murmurings and threats among the crews of Christopher Columbus' caravels on the famous navigator's first voyage of discovery to America until, on October 3rd, 1492, and on the following day, they encountered great flocks of birds, which indicated that they were nearing



Gannets on Bonaventure Island.  
Gaspé County, Que.

land. Despondency quickly giving way to confident expectancy, Columbus shifted his vessels' course to the southwest, following the birds' route of flight, and a few days later, following still the course taken by his winged pilots, landed in the Bahamas and gave to the world a new hemisphere.

#### When Jacques Cartier Reached Canada

When Jacques Cartier entered the Gulf of St. Lawrence, in 1534, and afterwards ascended the St. Lawrence River to take

possession of the adjacent territories in the name of the French King, he found that these coasts were frequented by immense flocks of sea-birds. In his journal, under date of May 21st, 1534, he speaks of landing on an island (probably Funk Island near the Newfoundland coast), which he named Isle of Birds on which he found such numbers of razor-bill auks that his men filled two boat loads of them in half an hour. This island, abounded also, he says, in guillemots and gannets. Jacques Cartier visited also on this trip the Magdalen Islands, in the centre of the Gulf of St. Lawrence and writes of their being "as full of nesting birds as any meadow is of grass."

The number of sea birds nesting on the rocky islands and coast of the Gulf of St. Lawrence has been greatly reduced from what it once was through unregulated slaughter. The number of our native shore and land birds in general throughout America has also greatly declined. During the settlement of the American colonies not only were bounties placed on the heads of many useful bird species but laws even went the length of punishing the farmer who did not take his prescribed part in the destruction of wild bird life. And yet there are many localities on both the Atlantic and Pacific coasts of the Dominion, and along the interior lakes, including also the various park reserves both in Eastern and Western Canada, that are still worth visiting for the interest of their bird life alone.

#### **Bird and Game Reserves**

The twelve park reservations controlled by the Dominion Government in British Columbia, Alberta and Saskatchewan, aggregating in all 8,000 square miles, as well as the reserves established by the provincial governments in the Rockies, on the prairies, and among the magnificent pine forests of Ontario and Quebec, incidentally afford protection to all of the various forms of wild life which are found therein. A number of breeding grounds for wild fowl and other birds are also being reserved by the federal authorities in the Prairie Provinces, including some of the principal breeding grounds of wild duck in North America. It is hoped that a number of bird reservations may be established in Eastern Canada as well.

#### **Making Friends With the Birds**

An ideal landscape in which to find and study birds of different varieties would include a meadow dotted with trees and a reed-bordered stream or pond, with adjacent woods,

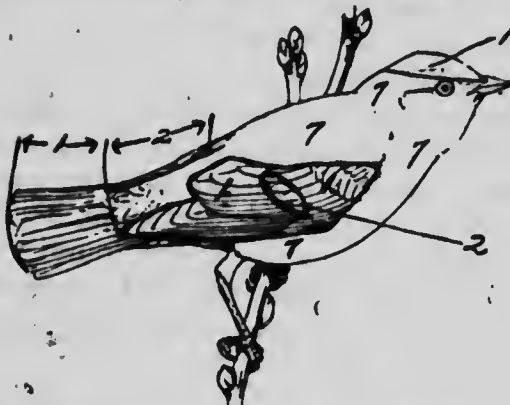
orchards and hills. Birds are always more numerous in well watered regions than in dry surroundings. There are a hundred along the stream in the valley to one on the mountain top. But if conditions such as these are not obtainable do not despair because a good deal of natural history can be learned with pleasure from the birds in or about your own homes.

The bird lover is privileged to pursue his quest, if he will, the year round. No season is closed to him, either by law or by nature. Even in midwinter there is much to interest and to learn and, indeed, it is when frosts are heavy and the snows deep that the dauntless courage of bird life shows at its best and, if our little brother of the air is at this season found lying lifeless by the roadside, it is seldom from the cold alone that he has perished but much oftener from exposure and starvation together.

Bird study may be more truthfully described as a sport or pastime than a study in the school sense, and the Scout who takes it up thereby establishes a new link of interest with the great world out of doors which will continue to give him pleasure when boyhood has passed into maturity and on even to the snows of old age. All that is needed in the way of equipment is an inexpensive opera or field glass, a note book and a good bird reference book, of which there are several on the market.

You may either take your book with you into the woods or fields—some bird books are written for this special purpose—or you may use your note book to jot down the colours, markings and other peculiarities of any unfamiliar birds you encounter, and afterwards identify them with certainty from your reference book at home. You will find it impossible to carry home a clear enough remembrance in your head alone of unfamiliar bird species encountered in an afternoon's ramble, so it is better far to use your note-book as you go along. By so doing you can usually get a record not only of the bird's markings and size as "between wren and sparrow" or "between sparrow and robin," etc., but you can be certain just where it was seen, whether near the ground or high up, in heavy woods, garden, swamp or open country, and note can be made at the same time of its characteristic movements, notes and nest. In this way you can make quite sure of the bird's identity when it comes time to consult your book, whereas otherwise it might be impossible to do so.

\* Location Ottawa, Canada  
 Date Aug. 7th 1912 Hour 9:30 A.M.  
 Weather Bright Wind none



SIZE: Between sparrow and robin  
 Smaller than wren Between robin and crow  
 Between wren and sparrow Larger than crow  
 SEEN: Bushy places Swamp  
 Near ground or high up Orchard Open country  
 In heavy woods Garden Near water

Name American Goldfinch  
 Order Passeres Family Finchidae  
 Genus Astragalinus Species Spizella

COLORS:

✓ 1 Black	6 Chestnut	11 Grey
✓ 2 White	✓ 7 Yellow	12 Slate
3 Blue	8 Orange	13 Rusty
4 Red	9 Green	14 White washed with yellow
5 Brown	10 Olive Green	

## REMARKS:

(Such as wing bars, white in tail, eye ring, shape of bill, marks on head, notes or song, characteristic movements, details of nest.)

White wing bars; conical  
bill; call pee-check-a-pee or  
sweet, sweet, chweet, chweet;  
fond of thistle heads and  
lettuce seed; flight a series  
of loops.

An especially handy and helpful note-book of pocket size, is published for the foregoing purpose by the National Association of Audubon Societies, of New York, at fifteen cents each. This booklet contains outline figures of the five common types of birds, viz.: (1) small perching birds, (2) hawks, (3) snipes, (4) herons, (5) ducks, and on the opposite page a numbered list of colours. It takes no time when a bird is before you to quickly fill in his colour markings by numbers on the outline figure and to secure otherwise ready means of identification of any bird species you are likely to encounter. The method of using this field observation book is shown herewith.

The Biological Division of the Geological Survey, Ottawa, will, on request, take pleasure in identifying any bird specimens for Boy Scouts, which they have not been able to identify

for themselves. Each request to this end should be accompanied by as clear a description of the bird as the Scout can furnish.

It is better to be plainly dressed when you go afield and in approaching a bird to try and keep the sun at your back. Professional ornithologists add to the foregoing a small tent, made of a long handled umbrella stuck into the ground and draped down to the ground with a green denim curtain. Under such cover one can enjoy the closest observation of our feathered friends and obtain photographs really worth having.

It is surprising, though, how close one can get with practice to even very shy birds without any tent. Pick out a likely spot beneath the shade of some convenient tree and if you remain motionless for a short time the birds' sense of danger quickly passes. The bird lover who is also possessed of a camera will find it a fascinating sport to photograph birds in their natural haunts, including the nesting birds and their ever hungry offspring. Hunting birds with a camera calls for a great deal more coolness, patience and skill than hunting with a gun. But there is both a zest and a lasting satisfaction in this sport that no killing of wild life with firearms can equal.

Some naturalists are able to attract birds about them by making a "squeak" by kissing the back of their hands or fingers vigorously in a way that resembles the cry of a young or wounded bird. Birds are ever on the lookout to protect their young and the note of alarm, even in its counterfeit form, will often bring a number of anxious parents around you to find out what is the matter.

Tramping heedlessly through the woods is apt, on the contrary, to drive all timid birds away. Hunting birds is like a good many other things in life: you must have your eyes, ears and mind wide open, and you must search diligently, if you expect to find.

Whenever you discover a bird's nest be careful not to disturb the foliage about it or the eggs, and do not make your visits too frequent, or you may drive the parent birds away. The same is true of ground nests. In both cases it is well to remember that your tracks are apt to be followed by some enemy of bird kind.

#### Bird Enemies

Among the common enemies of bird life are cats, red squirrels, minks, weasels, skunks, snakes, rats, mice and man-

kind. Ravens, crows, jays, blackbirds (grackles), and some owls and hawks are also destructive of the smaller birds and rob many nests. A house cat has been known to kill as many as fifty birds in a single season.

#### Bird Families

No one could observe the solicitous care exercised by parent birds in the upbringing of their family, their joys, their anxieties and sorrows, without benefiting from their example.

The number of eggs laid varies from one to twenty for different kinds. If an egg is stolen from the nest the mother bird will frequently replace it with another; there is a story of a flicker which has in this way been known to lay 71 eggs in 73 days. The habit developed by our domestic fowl of laying for months at a stretch comes, of course, through their nests being robbed for household consumption.

The period of incubation which is required to hatch out the birdlings varies for different varieties but is relatively shortest in the case of the smallest birds.

Different birds have different nesting habits. Some species are known to turn the eggs over at intervals with their bills and in other cases with their feet.

Mr. Frank M. Chapman, an American authority, says: "I have seen a least bittern calmly eat two of her five eggs which had been punctured by a marsh wren and then settle herself on the remaining three." When the young are hatched out the empty shells are usually carried some distance away from the nest to be disposed of. Young flamingoes eat their own shells after hatching.

In most cases, of course, the female bird sits on the eggs to keep them warm being relieved at intervals by the male bird. The emperor penguin, whose picture appears in the illustra-



The House Cat—an inveterate enemy of bird life.

tions of most Antarctic expeditions, stands with its large webbed feet underneath its egg to keep the latter off the ice. The gannet hatches out its young by sheltering the eggs with its toes. Other strange habits in the hatching out of young birds are those of the ostrich which leaves its offspring to be hatched out by the heat of the sun, the Egyptian plover which covers over its eggs with reeds, and the brush turkey of Australia which buries its eggs under vegetable matter leaving it to the heat generated by fermentation to do the rest.

The greater number of newly hatched birdlings are entirely dependent on their parents for sustenance and care for weeks until, from a state of utter helplessness and partial nakedness, they are nourished with infinite care up to the point of being able to look out for themselves. The offspring of our barnyard fowls, such as chickens, goslings, ducklings, turkeys, are, however, in the independent state of being able to run about, pick up food, and take care of themselves in all respects almost from the moment of their emerging from the shell. The same is true of the offspring of most of the shore birds. The eggs in which birdlings of the independent class are hatched out are much larger than those of the dependent species, thus affording space for a more all-round development before the chick quits the shell. In most cases new-born birdlings are nourished at first with food which has already been digested in the mother's crop or stomach. This as a rule gives way in turn to the feeding of worms, seeds and insects.

It was an ancient belief that the pelicans nourished their offspring with their own life blood. But this is not the case. Like cormorants, ibises, and certain other water fowl, the young pelicans thrust their bills far down the parents' throats to suck up their means of sustenance.

Who is there with any experience of bird life that has not stood aghast at the quantities of worms and eatables dropped into the insatiable mouths of young robins? The mother bird especially is tireless in her search for food. The father generally helps but too often spends much of his time scolding or hunting for enemies, real or imaginary.

A curious habit is that of the male hornbill, which plasters up the entrance to the tree cavity in which his spouse is nesting until the eggs are finally hatched out, leaving only a tiny opening through which food may be passed.

The reverse is, however, found in the case of the phalaropes.

After the female bird of this family has deposited her four speckled eggs in a nest of her mate's selection, her parental duties are fully accomplished, for it is the male which mounts guard on the nest and both hatches out the chicks and takes the main care of them when they do emerge.

#### Mating Habits

When the gander of the Canada goose has chosen his mate, the two are said to live together ever afterwards, sharing the fortunes alike of their winter in southern and summer in northern climes. Among these birds there are apparently many which never mate. Perhaps it may be, though, that the seemingly old maids and bachelors are widows and widowers, for geese are evidently slow about venturing again on the troubled sea of matrimony.

Eagles also mate for life, which in their case means for a century, if no mishap befalls.

Apparently very many migrant birds return in the spring to the very meadows in which they nested the year before. Most of the smaller birds may choose the same mates year after year, if these survive, although little is known definitely as to their fidelity to each other in this respect.

Many of the birds alike of meadow, water and forest are unmated, but just what the proportion would be is unknown as, indeed, are a great many other interesting things which have been left to Scouts and other bird friends to discover.

#### High Death Rate

The death rate among birds is very high for, apart from the sportsman's gun and the juvenile airgun and sling, many fall victims to birds of prey, rats, cats and other enemies. In winter time hunger, frost and snow take heavy toll, while telegraph wires, lighthouses, decoys and nets all are answerable for many lives. Probably the number of birds dying of old age is, therefore, relatively small.

Little is positively known about the ages of different bird species. Eagles, swans and ravens have exceeded a century but in the case of the smaller birds the span of life is comparatively brief.

#### Bird Nests

What infinite variety there is between the nesting habits of different birds. The purpose of the nest is, of course, to keep the eggs warm and the young birds from falling out. Many



sea-birds, such as gulls, terns and sandpipers, and shore-birds, like the plovers and curlews, with quail, grouse, rails and others, build next to no nests at all, on account of their eggs being laid on the ground and their young being able to shift for themselves from birth. Ducks, geese, and other swimming birds, follow much the same course, except that arctic ducks provide quantities of feathers and down in their nests, to help in keeping the eggs warm.

The grebe nests on a floating raft of green rushes piled across one another for the purpose and usually attached to some upright rushes in the water, so as to prevent it floating away. The eggs are laid in a mass of decaying vegetation, barely above the water. Grebe nests are so lightly tethered that they are apt to be blown about by the winds. The birds are also said to move their own nests from place to place by stretching out one foot and thus paddling off to another location.

A bird like the tern, which builds no nest whatever, but simply lays its eggs on the sand of the seashore, yet has sense enough to pick on a spot where there are plenty of broken shells and pebbles lying about so that the mottled eggs are quite difficult to distinguish. Probably the best way of finding them is by following the birds' foot-marks in the sand leading to the nest.

The nighthawk deposits her two mottled eggs on the bare ground, or rock, where they depend for safety on their protective colouring. Sometimes you will find this bird nesting in the city on a gravel roof where their eggs can scarcely be distinguished at a few yards distance.

The whip-poor-will is another species nesting on the ground. It has a preference for a bed of yellow leaves in a well sheltered thicket.

Unlike the sea-fowl and shore birds, larks, ground sparrows, and many other varieties nesting on the ground, build hollowed out nests, probably because of their offspring having to be nourished before they can provide for themselves.

Very many bird families are under obligations for nesting sites to the industrious woodpecker which chisels its way into a hollow tree for an abode in which to rear its family. Its habit is to make a new nest every year, from which it follows that many comfortable lodgings are left for any other birds that wish to occupy them. Sparrows, hawks and screech owls,

in their search for nesting cavities, often pick on an abandoned ill-gotten repast.

The flicker is not at all a shy bird and often is found on trees and lawns in towns and cities. If there is no hollow tree available it digs its way into a telephone pole and it has been known also to dig through hollow verandah posts and weather boarding under eaves.

In parts of the west trees are so scarce that woodpeckers resort in large numbers to the telegraph poles and Mr. T. Gilbert Pearson, Secretary of the National Association of Audubon Societies, writes that "while travelling on a slow train through Texas I counted one hundred and fifty telegraph poles in succession, thirty-nine of which contained woodpecker holes. Probably I did not see all of them, for only two-thirds of the surface of each pole was visible from the car window. Not all of these holes, of course, were occupied by woodpeckers in any one season."

A few taps on the tree or pole will usually be followed by the occupant poking his head out through the open doorway, if the nest is in use. In winter woodpecker holes are used by birds of other species for shelter.

#### The Eagle's Nest

The eagle's nest may still be found in remote regions, in the topmost branches of some tall pine tree near the water, or on the rocky ledge of an inaccessible cliff. Five feet across, and sometimes as much as seven feet deep from top to bottom, is the parent bird's habitation.

The bald eagle, the emblem of the greatest of the American republics, although majestic in its strength and possessed of the keenest sight, depends more on its wits for sustenance than it does on its own exertions.

The great Benjamin Franklin, writing of the selection of this bird as the national emblem of the United States, once said: "For my part I wish the bald eagle had not been chosen as the representative of our country. He is a bird of bad moral character and does not make his living honestly."

It is a favorite custom of the eagle to perch where he can watch an osprey diving for fish until the osprey has made a capture. Swooping downward through the air the eagle has no difficulty in robbing the successful fisher of its prey, dexterously catching the fish before it drops to the water and

making off again to its high eyrie for the enjoyment of its ill-gotten repast.

Many of the larger water fowl, especially the wounded or crippled birds, fall victims to them. When nothing better is to be had the eagle too feeds on carrion—fish or flesh alike.

Reports sometimes appear of eagles carrying off unguarded children to their nests. These stories, are not however, generally credited. Babies small enough to be carried off by eagles are not usually left unguarded in the wild surroundings which these birds frequent.

Woodland and field birds fashion for their young in most cases cradles of a beauty and texture far beyond elemental requirements and varying in size, form and material, from the massive abodes of eagles and hawks to the solid mud-plastered nest of the robin, the downy couch of the tiny humming-bird, and the swinging home of the Baltimore oriole, hanging pendant from the outermost limb of some tall elm.

Very different again is the habit of the cowbird, which builds no nest at all, but deposits its eggs in other birds' nests to be hatched out and provided for. The foundlings even starve out the rightful occupants of the nest without the foster-mother being aware of the deception which has been practised upon her.

In the prairie provinces of Canada the cowbird was formerly spoken of as the buffalo bird from the habit it had of attaching itself to the buffalo and continually following them about, either walking sedately behind them as they grazed, or flitting about them after flies, or perching at times in a whole line on the buffalo's back.

#### Swallows and Chimney Swifts

Few if any native birds in America have adapted themselves more fully to human habitations than the swallows and chimney swifts. The purple martin is the largest of the North American swallows and originally lived in hollow trees but in the east has now forsaken the home of its ancestors for the man made nesting boxes which are found in so many old fashioned gardens.

The chimney swift too in earlier days nested in hollow trees and in odd cases does so still. Audubon tells of a plane tree in Kentucky in which he counted nine thousand of these swifts clinging to the hollow trunk. The up-to-date bird of this

species has long since forsaken hollow trees for the more convenient brick or stone chimney to the interior of which it



Purple Martin house.

fastens its nest. The glue, which they use in sticking their nests to the chimney is a brownish fluid secreted by certain glands in the bird's mouth which thickens into a hard gum on exposure to the air and holds both eggs and birdlings securely unless a midsummer fire happens to be kindled on the hearth below, when down may come baby, cradle and all.

Lucky is the housekeeper who has a family of swifts living with him for they will rid the air all about the home of mosquitoes and other flying pests. Like the woodpeckers the

swifts use their stiff tail feathers to prop themselves up in clinging to the upright tree or wall. On the wing the swift has few equals. This bird is also spoken of as the chimney swallow, which is, however, a mistake as the swift is no swallow. It is, indeed, more nearly related to the nighthawk and the whip-poor-will.

The barn swallow, which once reared its family in the wilds, nowadays seeks out the surer shelter of the barn or out-house and many farmers encourage these birds about the premises by leaving windows through which they may pass. Its nest is fastened to the rafters with pellets of mud, which the bird carries in its bill from nearby puddles.

The cliff, or cave swallow, another farmyard resident, has deserted for the most part its ancestral cliff to settle under the eaves of barns or stables. If the woodpeckers were among nature's original carpenters the cave swallows must have been among the pioneer masons. Their cup and gourd-shaped clay nests are built in colonies. There is a protected entrance on the side and the interior is comfortably lined with grass and feathers. In the west, where human habitations are fewer, they still nest in thousands on the faces of cliffs.

Very different again is the nesting habit of the bank swallow, which tunnels two feet or more into the faces of sandy cliffs. At the inner end of the tunnel is a chamber of comfortable dimensions which is usually lined with grass to receive the eggs.

All species of swallows live in colonies and have the social instinct very highly developed.

The tree swallows, which commonly nest in trees leaning over the water, are the only birds of the swallow kind which do not seem fond of one another's company. They are, on the contrary, rather quarrelsome in disposition.

When the swallows fly low it is often said to be a sign of rain, which may be true as the insects on which they feed are apt to find the air heavy before a storm and so keep lower than at other times.

The oven bird, which is common in open deciduous woods, is of interest alike on account of its peculiar song "tea-cher, tea-cher," and by reason also of the strange nest which it builds in the form of a Dutch oven, of grass, weeds, and bark, completely arched over the top with weeds, grass, pine needles, etc., the entrance being a low opening at one side.

#### Bird Voices

Certain classes of birds, on account of their distinctive singing qualities, are commonly spoken of as song birds. All birds, however, have some form of utterance and, in many cases, are capable of producing sounds which are clearly indicative of varying emotions. Most birds, too, utter calls as warning notes to their young, or otherwise expressive of their annoyance or fear. The "tweetings" of nestlings, and the answering notes of the parent birds, also tell their own story of expectancy and satisfaction.

Bird voices have a wonderfully penetrating quality. The crow, which is not more than one-thousandth the size of an ox, yet when it "caws" can be heard as far or farther.

The man-o'-war bird is noted for its silence. A number of marine birds including brown pelicans, cormorants, water turkeys and black vultures utter only rudimentary sounds.

The cedar waxwing, or cherry bird, one of the commonest of Canadian birds, utters only a weak "tsee" although possessed of exceptional charm both of manner and appearance.

As a rule the bird singers are males and sing only, or mainly, during the nesting period. In many cases the song wanes with the appearance of the young. Some female birds, also, sing to a limited extent—the cardinal, the rosebreasted grosbeak, for example. One variety of tropical wren performs a duet with its mate. Crowing hens, though, are proverbially of rare occurrence.

Certain birds are fond of imitating other birds' notes and songs, notably the mocking bird, which easily takes first place as a mimic. Mocking birds have been found with a repertoire of not less than 32 different bird songs. The cat-bird, white-eyed vireo and bluejay are also among the North American bird mimics.

When one gains even an elemental acquaintance with bird life it is easy to distinguish many varieties by their songs and calls and nothing is more delightful than to trace the elusive bird note to the leafy shade or sunny upland from which it emanates.

#### **Bird Plumage.**

The plumage of birds is either loose or thick according to their different requirements and although of the lightest possible construction is locked together with tiny hooks, too small to be seen without a magnifying glass; so that the beautiful bird coat, although elastic and light, is really very strong as, indeed, it needs must be to withstand the stress and strain of storm and weather. Some sea-birds have feathers so stiff and hard as almost to resemble scales. Water-birds' feathers lie close and thick to the body and are besides so greasy that the soft down underneath never gets wet. The water runs off a duck's back rather than penetrates to its skin.

The bright colours, occurring in bird plumage, are usually caused by colouring matter deposited in the substance of the feathers. The gleams, however, of changing shades on the necks of pigeons and blackbirds, and on the throat patches of humming birds, are produced by tiny wrinkles on the feathers breaking up the rays of light into rainbow effects, as is seen also on soap bubbles and pearls.

There is little difference between the garb of male and female birds of the plainly dressed varieties. In the case of brightly marked birds it is the male, however, that sports the fine feathers, the female and the young being ordinarily clothed in duller shades—no doubt, for their protection.

Generally speaking, the colours of different birds are such as make for their safety in their natural surroundings. Thus, ground birds are usually dull in colour and not easily seen as long as they keep still. Sparrows, nighthawks, whip-poor-wills, and partridges all exemplify what is spoken of in nature as "protective colouring."

No birds wear their feathered suits longer than a single year and most birds renew their plumage twice a year by shedding their feathers in the process known as molting.

Ptarmigans and snow buntings, inhabiting the far north, exchange their brownish garb of the summer months for an almost invisible winter habit of white. The goldfinches, often spoken of as wild canaries, shed their bright yellow feathers in the fall for a suit of olive green, in which shade they are enabled to conceal themselves more easily among the leafless bushes and thistle plants amidst which they spend the winter farther south.

#### The Cruel Feather Traffic



Great Blue Heron.

The white heron, or egret, is favoured by nature with a special growth of elegant long feathers during the nesting time, which droop towards the tail like a beautiful bridal veil. These feathers compose the "aigrette" of fashion and are obtainable from the birds at no other time than in the nesting season.

The slaughter of white herons in order to provide the world of fashion with aigrettes not only involves the death of the mother bird but also the doom of the nestlings. Happily effective legislative measures have been taken banning

the aigrette from use and importation and let us hope the day is not distant when the villainous slaughter of wild birds for the use of their feathers in the millinery trade will be finally ended.

If the mutilations and heartless cruelty of the feather traffic were generally known among the fair sex, the evil would probably be cured through the kind-heartedness and good sense of womankind.

If feathers are, after all, indispensable in ladies' wear, by all means let us supply the need through ostrich farming, which involves no harm to the birds themselves, since these most beautiful of plumes are merely clipped from the bird with scissors.

#### Bird Wings, Bills, etc.

The bird's wing is supported by the stoutest of ligaments to a powerful shoulder blade and is also braced in opposite directions by other interior bones, so as to give the needed strength to the wings in flight. The thick mass of "white meat" in the breast of the fowl is made up entirely of the two principal muscles controlling the wings' downward stroke. These muscles are supported in turn by the broad surface of the bird's breast bone, which is different from that of all other creatures.

Birds' legs are ordinarily covered with scales, which is suggestive of their supposed connection with reptile forms. American birds have only four toes, lacking the fifth or little toe. Some American birds have but three toes.

The fish-catching kinds of birds, including herons, gannets, loons and kingfishers, have long straight beaks, adapted to their requirements. Geese and ducks have rather spoon-shaped, flexible bills for crushing soft plants and squeezing the food particles out of a mouthful of mud from the riverbed. Snipes, and other marsh-loving birds, have probing bills, to feel for and extract their food from the mud and sand.

The foot muscles contract automatically when a bird alights, the toes thus closing around a twig or roost without effort on the bird's part. Effort must rather be exerted to let go when the bird flies away. Thus it happens that birds sleep so securely on their roosts overnight.

#### Birds' Six Senses

Certain birds are endowed with a very strongly developed sense of smell. The owl is provided with very large ears and



noiseless wings because of the extent to which he is dependent on hearing in his quest for food at night.

Although all birds have keen sight, those that seek their food at night have eyes of exceptional size, so as to admit as much light as possible. Flycatchers easily perceive and make captive insects which are almost invisible to human sight. The sparrow, too, is able to detect and seize upon grass seeds with a keenness no human eye could match. Even more wonderful again, is the vision of hovering hawks and sea birds overhead in their ability to see and to capture small objects far below, and of vultures and kites to perceive the smallest carrion from miles distance, racing against one another to share in the gruesome feast.

In his book on submarines, Mr. F. A. Talbot draws attention to the habit that sea gulls around the British Isles acquired during the war of following on the wing the movements of submarines under water. "In this work, (*i.e.*, that of tracking German submarines) the men have learned to observe slight movements and slender indications, which under normal conditions would not occasion a second thought. The actions of the sea-birds in particular are followed with the closest concern. They will follow a submarine relentlessly and expectantly, shrieking and wheeling as it varies its submerged movements. The birds see quite distinctly and it is almost impossible to distract them or induce them to abandon the strange pursuit. Thus their line of flight offers a clue to the direction in which the submarine is heading and the patrolling vessels, by watching the water closely, can generally succeed in picking up the periscope when it is lifted above the water to take a peep."

To the ordinary senses of sight, smell, hearing, taste and touch it would seem as if the birds added a sixth sense of direction which, indeed, may also have been possessed by primitive man.

#### Birds Destroy Weed Seeds

Each of the different families of bird life has its own part in nature's plan. Game birds generally are the largest eaters of weed seeds, the quail perhaps being the greatest weed destroyer of all. Among the smaller birds the sparrows, however, eat more weed seeds than all others. Although depend-

ing mainly on seeds for their food supply, they are also very industrious in their search for insects. In this latter quest they are assisted by the robins, vireos, thrushes and other species. Seed eating birds are mild in nature and it is from them that our barnyard fowl have been derived. The hen came originally from India, the goose, duck and pigeon from Europe, the guinea fowl from Africa and the turkey from America.

Certain garden weeds produce an incredible number of seeds. The United States Biological Survey has found that a single plant of one weed species may mature as many as 100,000 seeds in a season and if unchecked would produce in the spring of the third year 10,000,000,000 plants. There are close on fifty bird species in all which are enlisted in nature's war on weed pests and the quantity of weed seeds they consume in the aggregate is incredible. So fond is the goldfinch of thistle seeds that this species is sometimes known as the thistle-bird. As many as 700 pigeon-weed seeds have been found in the stomach of a tree sparrow. Investigation has also proved that a snow bunting eats as many as 1,000 pigweed seeds at a single meal.

Birds are such living dynamos of energy that their food requirements are relatively larger than that of most other creatures. The appetite of nestlings is so prodigious that a young robin will eat one and one-half times its own weight in worms per day.

#### Nature's Check on Insects

Woodpeckers search out and destroy many destructive forms of insect life which burrow into trees, their long sharp bills, their barbed tongues, clinging claws, and even their tails, being especially adapted to this purpose. In climbing the woodpecker depends in part on its tail feathers for support. The nuthatches, brown creepers, chickadees and kinglets are other bird species which are enlisted with the woodpeckers in the search for insect life on trunk and limb. "In a single day a chickadee will sometimes eat more than four hundred eggs of the apple plant-louse," says Prof. Clarence M. Weed, "while throughout the winter one will destroy an immense number of the eggs of the cankerworm."

In the winter a dozen or more woodpeckers and chickadees are often found patrolling the forests together and searching out from their hiding places the eggs which insects have laid

in the bark for the spring sun to hatch out. The flicker eats beetles, moths, butterflies and a variety of other insects and is not averse to a touch of wild fruit as dessert. But when he can find them he likes nothing so well as ants. By tearing up the hills with his long bill the bird creates great commotion among the workers in the ant colony. Word is quickly carried down to those below of their danger. This brings the ants swarming up to the surface to find out what is the matter, when they are in turn quickly seized on the flicker's long, sticky tongue and swallowed.

Many insects deposit their eggs on terminal leaves and twigs so that their offspring may have tender buds and foliage to feed upon. Special charge seems to have been given to the vireos and warblers of keeping down these tiny pests. Darting to and fro among the foliage may also be seen the robins, bluebirds, thrushes, wrens, cat-birds, orioles, tanagers and others, on the constant hunt for larger flies and other insects.

The swallows, swifts, martins and nighthawks are among the special enemies of flying insects; the swallows, tireless on the wing, skimming over marsh, field or water; the martins, sweeping the air above our gardens, and the chimney swifts circling above and about our homes. At night the whip-poor-wills and the nighthawks toil while other kinds are sleeping.

On roof or wire or other point of vantage throughout the day perch the kingbirds, phoebes and other hunters of the larger flying insects, ever ready to swoop down on their prey, returning to their lookout to wait for another.

Insects if unchecked increase enormously. It is said that Canada loses \$180,000,000 a year in her crops and forests through insects. But for bird life there is little doubt that the insects would have things even more their own way.

During the settlement of the American state of Utah, myriads of black crickets streamed down the hillsides and wrought such havoc with the crops that waving wheat fields were shorn bare to the ground in a single day, as though the land had not been planted. When the same thing happened again in the following season the settlers were in despair. Then it was that flocks of Franklin gulls appeared on the scene and fed so greedily on the crickets that the pest was overcome. So signally were the settlers served by the black-headed gulls that a monument has been erected to these birds in Salt Lake City.

**Hawks and Owls**

Red Shouldered Hawk.

Rodents such as rats, mice, ground squirrels, gophers, prairie dogs and rabbits, with their high birth rate, are exceedingly destructive of farm crops, and in some cases destroy also fruit trees by gnawing the bark. Rodents are busiest at night and would do incredibly greater damage to grain and root crops, trees and grass, clover and vegetables if it were not for the extent to which they were held in check by hawks, owls and other birds of prey. A very interesting bulletin on the Hawks and Owls of the Prairie Provinces has recently been published by Mr. P. A. Taverner, Ornithologist of the Geological Survey of Canada.

**The Crafty Crow**

Though birds are not generally regarded as having much understanding, yet at times they exhibit considerable evidence of it. The crow kind are considered to be amongst the most sagacious of the feathered tribes. Great flocks of crows occasionally congregate in one place, as if they had been called together for deliberative purposes. These gatherings will sometimes continue for a day or more, with a ceaseless clamor of their harsh calls, when suddenly the purpose of the meeting, whatever it may be, is apparently accomplished and they all disperse.

Crow stories, like fish stories, need to be treated with considerable reserve, but as an outlaw the crow has had to live on his wits so long that his instinct of self-preservation is almost uncanny.

**The Canada Jay**

A bird of infinite interest in the Canadian lumber woods is the Canada jay, which is at once both a source of amusement and annoyance to trappers and loggers through his thieving habits. They are ever on the lookout to snatch up and carry off food or soap, or almost any small article



The Friendly "Whiskey Jack."

that the camper in a forgetful moment may leave within their reach. Of them it might be said, as an old farmer remarked of the crow, that "the pesky critters are carnivorous, herbivorous, grainivorous, and pestiferous — chiefly the latter." And yet in Canada our north country life would be duller without them. If the lonely trapper want; company in the northern wilds he has only to light a fire

and even on the coldest day of winter, he will presently have a jay perched close by on the lookout for any scraps that fall from his table.

The Canada jay is commonly known among campers and woodsmen as "Whiskey Jack," a corruption of its name among the Cree Indians Wis-ka-tjan.

In certain parts the Canada jay is known as the moose bird because of its habit of frequenting the "yards," as they are called, in which moose families pass the winter months. The cause of the attachment is unknown but it may be that the birds find parasitic insects of a kind that they like on the moose.

#### Cage Birds

The smaller birds, with which most of us after all are more familiar, give evidence of remarkable understanding, as anyone knows who has had to do with canaries and other household favourites, and the many tricks they learn so readily at human hands. How wonderful, too, is the intelligence which cage birds display in attracting attention to their various wants.

There are numerous stories told of the sagacity of parrots connected with their power of imitating the human voice. Truly, parrots are most wonderful mimics and are capable of copying not only the human voice but the songs and calls of many bird species.

## Wild Bird Guests

Even the timidity of the tiny humming bird has been overcome by kindness, and Miss Sherman, an American bird-lover, has actually tamed these creatures to such an extent that they came and buzzed about her for food. The humming bird, like the bee, extracts its sustenance from the sweets which are secreted in various flower blossoms. Beginning with bottles of syrup, hidden in the base of bright coloured artificial flowers, Miss Sherman progressed to the bare bottles, to which the birds resorted with the greatest freedom. They came expecting the syrup and peremptorily demanded it from their trusted friend if the bottles were found empty.

It is a long jump from the humming bird to the Canada wild



Canada Wild Geese on Jack Miner's Farm, Kingsville, it.

goose, one of the largest and most cautious of Canadian birds. At Kingsville in Essex county, Ontario, a resident named Jack Miner has, however, brought large numbers of these creatures to a state of extraordinary domestication, and incidentally provided at his own expense one of the most spectacular demonstrations of bird preservation to be seen anywhere on the North American continent.

About twelve or fifteen years ago he placed a few domesticated Canada geese in an enclosure, and thereby finally succeeded in inducing a number of migrant wild fowl of the same species to nest on his farm. There are two small ponds on the

farm, one thirty-five yards across, the other about thirty by fifty yards. The first year seventeen wild geese settled on one of these ponds. The next year there were thirty, then one hundred and fifty, then five hundred, and after that Miner said he could not count them for he had about five acres of geese all told.

Mr. W. E. Saunders, of London, Ontario, a well known Canadian authority on birds, writes that: "One morning last April one thousand wild geese came to Miner's farm, all of which lit within one hundred and fifty yards of the house. Many of them—by actual count 425—were in the small enclosure right in front of his dining room window. I went into the enclosure with him and found it quite possible to walk to within fifteen or twenty feet of the nearest goose. But, when these geese were out on the lake, two miles distant, it was exceedingly difficult to get a boat within one half of a mile of them. In one case they knew absolutely they were on safe ground and in the other case they suspected danger because man is a dangerous animal. To them, however, the man who goes about Jack Miner's place is safe and, therefore, they were not in the least alarmed."

"It seems," Mr. Saunders further observes, "these birds have methods of communication, not only between members of their own species but with others, because one day, during last year's migration, while the geese were visiting Miner's place, on four different occasions flocks of wild swans flew over them, apparently to see if these stories the geese were telling about the safety and pleasant conditions on Miner's farm were true. But, while the swans found they were apparently, because the geese were down on the pond on the farm, they felt like the farmer, who, seeing the giraffe for the first time at a menagerie, said: 'There ain't no such animal.' The swans looked at the geese and said: 'It looks safe but cannot be,' and went away. Now Miner's ambition is to have some swans in order to assure these wild fellows that it is really all right on his farm."

Birds in general are accustomed to regard mankind with fear and suspicion and, although their instinctive dread of human beings can usually be overcome by kindness, the lesson is one which ordinarily takes time and patience. The partridge, an exceedingly wary bird, has been domesticated in rare instances to the point of coming into the barnyard to feed

with the hens. But intimacies of this order are by no means easy of cultivation.

#### Bird Migrations

How wonderful is the instinct in bird life which guides their travel every year without chart or compass over vast distances between their summer and winter homes, timing their movements with such unerring precision as to enable them to reach their destination in successive seasons on the same day, albeit their flight may cover the thousands of miles that separate us from far-off Brazil and Peru and the Argentine.

The migration of birds from one part of the world to another has been from early ages a subject alike of the greatest interest and mystery. It was, of course, observed in early times that birds disappeared in the fall and re-appeared in the spring. But the comparative absence of human intercourse between different climes before the days of rail and steamship travel resulted in many curious beliefs regarding bird life. In some parts it was said, and believed, that certain birds flew to the moon and that others remained hidden throughout the entire winter in hollow trees like the bears or else buried themselves in the muddy beds of ponds and streams to hibernate like frogs. Within the last century, indeed, stories have been current of whole flocks of birds that were seen to disappear from human vision into the waves of the Mediterranean to winter in its depths. The cuckoo was supposed in the fall to turn into a hawk.

Scientific study, both in Europe and America, has shed a great deal of light on bird life in all its aspects, and yet there is no universally accepted theory as to why North American birds migrate. Which is their real homeland—their summer or winter homes—is not positively known. North America possesses immense supplies of bird foods throughout the summer months but, during the frost and snows of winter, the bird life of the north must either turn southward for sustenance or perish. On the other hand, there is no summer movement of bird life from Central and South America southward, doubtless because Patagonia and Tierra del Fuego offer little or no inducements in the way of food supply.

The overcrowding which would possibly ensue if the bird life of the tropics remained constantly in those parts (bird population increases five-fold in a single season) is doubtless prevented by the spring exodus to Canada and the United



States, with the superb inducements both of food and climate which these regions provide for the nesting and rearing of their young.

So far as is known there is only one variety of bird nesting anywhere in the New World which winters in the Old. This is the wheatear, which summers in Greenland and winters in Africa. There are, however, some sea-birds, which seem to spend the winter at sea, and which may only come ashore at nesting time. Herring gulls are said to have followed vessels across the Atlantic, feeding on what was thrown overboard.

Some of the petrels and allied species nest in the southern hemisphere and come north only as migrants.

The ducks and geese push northward with the beginning of open water, so early in the spring that many are caught by the later storms and hover disconsolately over icy ponds and streams risking starvation, however, rather than to retreat. Bluebirds and purple martins also sometimes outfly the slow march of spring northward, only to perish of cold and hunger.

If the longing for home is in reality the main incentive of the spring migration, the question naturally suggests itself: why do so many birds forsake their northern homes for the south just as soon as the nesting season is over, for it is well authenticated that the southern migration with some species begins as early as July 10th and probably as early as July 1st. Indeed, most birds move southward as soon as their fledglings are strong enough to shift for themselves, long before fall sounds its warning of approaching winter, and whilst the food supply of North America is most abundant. The duration of the birds' stay, however, in their northern habitat varies considerably for different species.

#### Day and Night Migrants

Some birds migrate by day but most of them under the cover of darkness. The day migrants include ducks, and geese (which also migrate by night), hawks, swallows, the nighthawk and chimney swift. The last two, combining business and pleasure, get their morning and evening meals during a zig-zag flight in the desired direction with a daily advance of comparatively few miles distance.

The night migrants include all the great family of warblers, thrushes, flycatchers, vireos, orioles, tanagers, shore birds, and most of the sparrows. They usually begin their daily flight

soon after dark and end it before the dawn, going farther before than after midnight.

The length of the migration journey varies greatly for different species. A few birds, like the partridge, quail, cardinal and Carolina wren, do not migrate at all; many of them, in fact, never move more than a very few miles distance from the nest in which they were hatched out. Other species migrate so short a distance that the movement is scarcely noticeable.

Another variation is illustrated by the robins which stay in the middle districts of the United States throughout the year, in Canada only in summer, and along the Gulf of Mexico only in winter. Probably no individual robin is a continuous resident in any one locality, but the bird that nests in the middle states of the American Union eats his Christmas dinner in the south, while his hardier cousin of Canadian birth winters south of the Great Lakes.

#### Canadian Birds' Winter Homes

Many species from Canada winter in the United States, as the tree sparrow, junco and snowflake. Yet others nesting in the northern United States winter in the Gulf States, as the chipping, field, savannah and vesper sparrows, while more than one hundred species leave the United States and Canada for the winter to spend that season in Central or South America.

Nor are some of these content with journeying only to northern South America, but cross the equator and pass on to the pampas of the Argentine, and a few even to Patagonia. Among these long distance migrants are some of our commonest birds. The scarlet tanager migrates from Canada to Peru. The bobolinks, purple martins, cliff swallows, barn swallows, nighthawks and some thrushes, winter in Brazil. The black poll warblers that nest in Alaska, and winter in southern South America, travel five thousand miles distance from their summer to their winter home.

Probably, however, the land-bird making the longest migration is the nighthawk, which is found north as far as the Yukon, and which winters in Argentina, seven thousand miles to the south.

Even these marvels of long distance travel are outstripped by some of the water-birds, notably by some of the shore-birds, which as a group have the longest migration records of any

species. Nineteen species of shore-birds breed north of the Arctic circle each one of which travels to far off South America in winter, six of them penetrating into Patagonia, more than eight thousand miles away.

### The Longest Bird Migration

All other records of migration are, however, out-distanced by one of the smaller sea-birds the arctic tern, whose shallow nest has been found in the snow not more than five hundred miles distant from the North Pole, and which migrates thence as soon as its young are full grown to the Antarctic continent,



Arctic Tern.

The champion long-distance migrant, not distinguishable in picture from the Common or Forster's Tern. Drawing contributed by F. J. Hennessy, Ottawa.

eleven thousand miles away. What their track is through the intervening space no one exactly knows. Their period of residence in the Arctic is approximately of fourteen weeks duration, from about the middle of June till the last week of August, with a somewhat longer stay in the Antarctic. Their round trip of twenty-two thousand miles per year must be made in somewhat less than twenty weeks in all. To make one hundred and fifty miles headway per day they must, however, cover far more than this distance by their zig-zag twists and turns in pursuit of food. The midnight sun has already appeared before the bird arrives in the Arctic and daylight is continuous during their stay in the far north. The same is true of their residence in the Antarctic, so that these migrants enjoy more daylight than any other of God's creatures.

### Bird Routes of Travel

There is quite a variation in the migration routes of individual species but the normal route for the birds of eastern North America is a northeast and southwest course, approximately parallel with the Atlantic Coast. The birds of the interior states and provinces follow a line of flight parallel in

general with the course of the three great river valleys, the Mississippi, the Red and the Mackenzie, which form a route rich in food supply between their summer and winter homes.

Another interesting migration route is that of the western tanagers which nest in the province of Alberta. On their northern migration they follow the Pacific coast northward from Guatemala to Vancouver Island, from which point they veer across the Rocky Mountains five hundred miles eastward to their summer habitat.

In their passage from North America to their winter abodes in northern South America, the different courses taken by bird species are almost as numerous as the families which travel them. Comparatively few of the migrants appear to follow the land passage by way of the Isthmus of Panama.

The great majority of North American birds, including the tiny humming bird, seemingly prefer to take a short cut across the Gulf of Mexico, millions of them crossing the Gulf at its widest part by a single flight of five hundred to seven hundred miles. The route by way of Florida, Cuba and Jamaica is apparently popular, as far as Cuba, with some sixty species, of whom great numbers winter on this island, or on the island of Jamaica. Scarcely more than ten species continue their flight southward from Jamaica, across the Carribean Sea, to South America, including the bank swallow, gray kingbird, Florida nighthawk, Alice thrush, black-poll warbler and bobolink. The next route to the eastward traverses the Lesser Antilles, from Florida to South America, by way of Porto Rico. A few individuals, of about twenty-five species, follow this route as far as Porto Rico, only six continuing, however, to the South American coast, and these last in such diminished numbers as to form an insignificant fraction of the winter residents in that region. The explanation of this lies in the comparative scarcity of food supply on the islands east of Porto Rico. Thousands of water-fowl make the passage from Nova Scotia to the Lesser Antilles.

#### **Longest Continuous Bird Flight**

It is said that the longest continuous bird flight in the world is made by the golden plover, covering a distance of 2,400 miles between Nova Scotia and South America, without pause or rest in forty-eight hours. This bird nests along the Arctic coast of North America. As soon as the young are able to care for themselves they migrate, by way of the Lab or

coast of the Atlantic, to Nova Scotia, from which they shape a straight southerly sea-course to the mouth of the Orinoco, afterwards traversing eastern South America to the Argentine.

After six months vacation in the south, the golden plover finds its way back to the Arctic by an entirely different route, going northwesterly across South America and the Gulf of Mexico to the coasts of Louisiana and Texas, thence up the Mississippi valley and more northerly streams to the Arctic.

Equally wonderful in its way is the flight of the golden plover of the Pacific coast from Alaska, 2,000 miles across the trackless, islandless sea, to Hawaii.

The black-poll warblers and cliff swallows, both nesting northward to Alaska, are winter neighbours in Brazil and the Argentine. The former wings his rapid progress by long night flights over land and water from one feeding station to another. His course is direct. The swallow, on the contrary, travels by day and, although starting several weeks earlier than the warbler, is behind the later in reaching his destination.

An interesting migration habit is that of the robins nesting in southern Alberta, which arrive long before their kindred from the south and southeast. The truth is that the birds nesting in southern Alberta come from the southwest, though in doing so they are compelled to traverse the main range of the Rocky Mountains, while the latter is still in the grasp of winter. Robins remain all winter on the Pacific coast, northward as far as southwestern British Columbia. Hence, the wintering robins of British Columbia are already far north on the advent of spring and do not need any hurried migration to reach Alberta on time. Their movement, in fact, from the coast to Alberta only averages eight miles a day. Why, though, does it happen that the robins nesting in Alaska come all the way from the central Mississippi valley instead of from the adjacent Pacific coast in the province of British Columbia? This question has not yet been answered. There is a slight difference in colour and in pattern of colouration between the eastern and the Pacific coast robins, by which it is possible to distinguish the one from the other.

The western robin is not found north of central British Columbia, southern Alberta and southwestern Saskatchewan, while the whole country to the northward is occupied by birds whose characteristics prove that they come from the southeast.

### How Birds Find Their Way

How do migrating birds find their way? Sight, no doubt, has its part, either by day or by night. But in bird life there must surely be a marvellously developed sense of direction. A like sense is found in man, but how limited is its development in comparison with that of the birds.

A few years ago some members of the United States Biological Survey were travelling by steamer in Alaskan waters, from the Island of Unalaska to Bogoslof Island, a distance of about sixty miles. A dense fog was hanging over the water at the time, through which it was impossible to see anything beyond a hundred yards distance. Yet, when the steamer was half way across, flocks of murre, returning to Bogoslof from their feeding grounds, began to break through the fog wall astern, flying parallel with the vessel's course for a few moments and disappearing into the mist ahead. The vessel by chart and compass was making straight for the island but her course was apparently no more exact than that of the birds.

This much is certain: the bird migrant does not travel in any haphazard way. Some American authorities claim that coast lines, mountain chains, especially the courses of large rivers and their tributaries, form well marked highways along which the familiar inhabitants of our yard and garden nesting boxes find their way back to us in the spring from far off Brazil, or it may be even the Argentine. On the other hand, it is contended that food supply is the determining factor in the bird's choice of routes in migration and that in general the course between the summer and winter abode is as straight as the bird can find and still have enough to eat on the way.

### Risks of Travel

Flight takes large toll of our feathered friends, through the hazards of storms and other unforeseen causes. The Washington Monument in the American Capital, has caused the death of many winged travellers. On a single morning in the spring of 1902 nearly one hundred and fifty lifeless bodies were found around its base.

Migrating birds appear peculiarly liable to destruction by striking high objects. As long as the torch in the Statue of Liberty in New York harbour was kept lighted the sacrifice

it caused of bird life was very large, reaching a total of 700 birds in a single month.

Every spring the lighthouses along the Atlantic coast lure many to destruction, whilst the fall journey sees an even greater death toll. A flashing light frightens birds away and a red light will be avoided by them as if they understood the meaning of its danger signal, but a steady white light gleaming out of the mist, or darkness, seems like a magnet luring wanderers to destruction by dashing themselves against the glass, or still oftener by exhausting themselves like moths, fluttering in and out of its bewildering rays.

The interest of mankind in bird migration is of early origin. Yet, curious as the theories and tales of long ago seem to us to-day, they are hardly less incredible than the ascertained facts. There is very much remaining to be learned on this subject and the following from the writings of the late Mr. Wells W. Cooke, of the United States Biological Survey, is one of the most curious and interesting of the unsolved problems:

"The chimney swift is one of the most abundant and best known birds of eastern United States, with troops of fledglings catching their winged prey as they go and lodging by night in tall chimneys. The flocks drift slowly south, joining with other birds until on the north coast of the Gulf of Mexico they become an innumerable host. Then they disappear. Did they drop into the water or hibernate in the mud as was believed of old, their obliteration could not be more complete. In the last week in March a joyful twittering far overhead announces their return to the Gulf coast but their hiding place during the intervening five months is still the swift's secret."

#### SOME COMMON BIRDS OF CANADA\*

Following is a list of some of the common birds of Canada. In this list the letter E signifies Eastern, including Ontario to Manitoba; the letter C, Central, including the prairie provinces of Manitoba, Saskatchewan and Alberta; and the letter W, Western, including British Columbia. The omission of one of the above sections does not necessarily mean that the species is never found there, but only that it is not to be expected as common. Some of these species are of local distribution and are not to be found in all parts of the sections given. Certain

\*Contributed by P. A. Taverner, Ornithologist, Geological Survey, Ottawa.

species are of irregular occurrence and only common in exceptional seasons. A few birds not usually common are included as being of special interest, though only likely to be met with under certain favourable conditions. The localities given in the third column are those where the species is most likely to be met with and they may be occasionally or even commonly found in other types of country:—

1. Western Grebe .....	C.	Sloughs and ponds.
2. Holboell's Grebe .....	C.W.	Sloughs and ponds.
3. Pied-bill Grebe .....	E.C.W.	Sloughs and ponds.
4. Loon .....	E.C.W.	Lakes.
5. Black Guillemot .....	E.	Sea coasts.
6. Pigeon Guillemot .....	W.	Sea coasts.
7. Glaucous-winged Gull .....	W.	Sea coasts.
8. Herring Gull .....	E.	W. Sea coasts.
9. Heerman's Gull .....	W.	Sea coasts.
10. Short-billed Gull .....	W.	Sea coasts.
11. Bonaparte's Gull .....	E.C.W.	Lakes.
12. Franklin's Gull .....	C.	Lakes and fields.
13. Common Tern .....	E.C.	Lakes.
14. Black Tern .....	C.	Marshes.
15. Mallard Duck .....	E.C.W.	Marshes.
16. Black Duck .....	E.	Marshes.
17. Green-winged Teal .....	E.C.W.	Marshes.
18. Blue-winged Teal .....	E.C.	Marshes.
19. Shoveller .....	C.W.	Marshes.
20. Pintail Duck .....	C.W.	Marshes.
21. Wood Duck .....	E.	Marshes.
22. Snow Goose .....	C.	Lakes.
23. White-fronted Goose .....	C.W.	Lakes.
24. Canada Goose .....	E.C.W.	Lakes.
25. American Bittern .....	E.C.W.	Marshes.
26. Great Blue Heron .....	E.C.W.	Marshes.
27. Sora Rail .....	E.C.	Marshes.
28. Virginia Rail .....	E.C.	Marshes.
29. Sandhill Crane .....	C.W.	Marshes and fields.
30. American Coot .....	E.C.W.	Marshes and lakes.
31. Wilson's Phalarope .....	C.	Sloughs.
32. Woodcock .....	E.	Damp woods.
33. Wilson's Snipe .....	E.C.W.	Grassy marshes.
34. Upland Plover .....	C.	Fields.
35. Spotted Sandpiper .....	E.C.W.	Lake edges and streams.
36. Killdeer .....	E.C.W.	Fields and shores.
37. Bob-white (south-central) ...	E.	Fields and brush.
38. Blue Grouse .....	W.	Open woods and riages.
39. Spruce Grouse (north) ....	E.C.	Deep woods.
40. Franklin's Grouse .....	W.	Deep woods.
41. Ruffed Grouse .....	E.C.W.	Deep deciduous woods.
42. Sharp-tailed Grouse .....	C.W.	Fields and brush.
43. Mourning Dove .....	E.C.W.	Open woodland.



44. Band-tailed Pigeon ..... W. Woods and fields (coast).  
 45. Marsh Hawk ..... E.C.W. Marshes and fields.  
 46. Sharp-shinned Hawk ..... E.C.W. Woods.  
 47. Red-tailed Hawk ..... E.C.W. Fields and woods.  
 48. Red-shouldered Hawk ..... E. Fields and woods.  
 49. Swainson's Hawk ..... C.W. Fields and woods.  
 50. Sparrow Hawk ..... E.C.W. Fields and slashings.  
 51. Fish Hawk ..... E.C.W. Lakes and coast.  
 52. Screech-Owl ..... E. W. Woods and orchards.  
 53. Great Horned-Owl ..... E.C.W. Deep woods.  
 54. Short-eared Owl ..... E.C.W. Fields and marshes.  
 55. Barred Owl ..... E. Woods.  
 56. Snowy Owl (winter) ..... E.C.W. Fields and woods.  
 57. Black-billed Cuckoo (south) E. Brushy woods.  
 58. Belted Kingfisher ..... E.C.W. Lakes and streams.  
 59. Hairy Woodpecker ..... E.C.W. Woods and orchards.  
 60. Downy Woodpecker ..... E.C.W. Woods and orchards.  
 61. Yellow-bellied Sapsucker ... E.C.W. Poplar woods and orchards.  
 62. Red-breasted Sapsucker .... W. Woods and slashings.  
 63. Pileated Woodpecker ..... E. W. Deep woods.  
 64. Red-headed Woodpecker ... E. Open woods.  
 65. Lewis' Woodpecker ..... W. Open woods and roadsides.  
 66. Flicker ..... E.C.W. Open woods and fields.  
 67. Red-shafted Flicker ..... W. Open woods and fields.  
 68. Whip-poor-will ..... E. Deep woods.  
 69. Night Hawk ..... E.C.W. Over fields or towns.  
 70. Chimney Swift ..... E. About houses.  
 71. Vaux's Swift ..... W. Open country (coast).  
 72. Ruby-throated Humming-bird. E.C. About flowers.  
 73. Rufous Humming-bird ..... W. About flowers.  
 74. Calliope Humming-bird .... W. About flowers (exc't coast).  
 75. Kingbird ..... E.C.W. Open country.  
 76. Arkansas Kingbird ..... C.W. Open country.  
 77. Phoebe ..... E. About buildings & bridges.  
 78. Wood Pewee ..... E. Open woods and orchards.  
 79. Least Flycatcher ..... E.C. Woods and orchards.  
 80. Horned Lark ..... E.C.W. Fields.  
 81. Magpie ..... C.W. Fields and slashings.  
 82. Blue Jay ..... E.C. Woods.  
 83. Stellar's Jay ..... W. Woods.  
 84. Canada Jay (north) ..... E.C.W. Woods.  
 85. Raven ..... E.C.W. Wild woods.  
 86. American Crow ..... E.C.W. Fields and woods.  
 87. Clarke's Nutcracker ..... W. Open pine woods.  
 88. Bobolink ..... E.C. Fields and meadows.  
 89. Cowbird ..... E.C. Pastures.  
 90. Yellow-headed blackbird ... C. Marshes.  
 91. Red-winged Blackbird ..... E.C.W. Marshes.  
 92. Meadow Lark ..... E. Fields.  
 93. Western Meadow Lark .... C.W. Fields.  
 94. Baltimore Oriole ..... E.C. Woods and orchards.  
 95. Bullock's Oriole ..... W. Woods and orchards.

96. Rusty Blackbird .....	E.C.	Marshes and fields.
97. Brewer's Blackbird .....	C.W.	Marshes and fields.
98. Bronzed Grackle .....	E.C.	Woods and orchards.
99. Evening Grosbeak (winter) .....	E.C.W.	Seed bearing trees.
100. Pine Grosbeak (winter) ....	E.C.W.	Fruit bearing trees.
101. Purple Finch .....	E.C.W.	Open woods, orchards.
102. Red-poll (winter) .....	E.C.	Weed patches.
103. American Goldfinch .....	E.C.W.	Weed patches and brush
104. Snow Bunting (winter) ....	E.C.W.	Open fields.
105. Lapland Longspur (winter) ..	C.	Open fields.
106. Chestnut-collared Longspur ..	C.	Open fields.
107. Vesper Sparrow .....	E.C.W.	Field edges.
108. White-throated Sparrow ....	E.C.	Dense brush.
109. White-crowned Sparrow ....	E.C.W.	Brushy edges.
110. Chipping Sparrow .....	E.C.W.	Field edges and orchards.
111. Junco .....	E.C.W.	Brush.
112. Song Sparrow .....	E.C.W.	Brush.
113. Fox Sparrow .....	E.C.W.	Open woods.
114. Towhee .....	E.C.W.	Brushy thickets.
115. Rose-breasted Grosbeak ....	E.C.	Open woods.
116. Black-headed Grosbeak .....	W.	Woods.
117. Indigo Bunting .....	E.	Slashings.
118. Lazuli Bunting .....	W.	Slashings.
119. Western Tanager .....	W.	Woods.
120. Scarlet Tanager .....	E.	Woods.
121. Purple Martin .....	E.C.W.	Open country.
122. Cliff Swallow .....	E.C.W.	Open country.
123. Barn Swallow .....	E.C.W.	About barns.
124. Bank Swallow .....	E.C.W.	Open country.
125. Tree Swallow .....	E.C.	Open country.
126. Violet-green Swallow .....	W.	Open country.
127. Cedar Waxwing .....	E.C.W.	Woods and orchards.
128. Red-eyed Vireo .....	E.C.W.	Woods (open).
129. Warbling Vireo .....	E.C.W.	Woods (open).
130. Black and White Warbler ..	E.C.	Open woods.
131. Yellow Warbler .....	E.C.W.	Brushy thickets.
132. Myrtle Warbler .....	E.C.	Brushy thickets.
133. Audubon's Warbler .....	W.	Brushy thickets.
134. Magnolia Warbler .....	E.C.	Brushy woods.
135. Black-th't'd Green Warbler ..	E.	Evergreen thickets.
136. Townsend's Warbler .....	W.	Deep woods.
137. Oven-bird .....	E.C.	Deep woods.
138. Maryland Yellow-throat ....	E.C.W.	Brushy marsh.
139. Redstart .....	E.C.W.	Woods and orchard.
140. Dipper .....	W.	Woodland streams.
141. Catbird .....	E.C.W.	Brushy thickets.
142. Brown Thrasher .....	E.C.	Brushy pastures.
143. House Wren .....	E.C.W.	Brush and orchards.
144. Carolina Nuthatch .....	E.	Woods and orchards.
145. Red-breasted Nuthatch ....	E.C.W.	Woods.
146. Black-capped Chickadee ....	E.C.W.	Woods and orchard.
147. Gambell's Chickadee .....	W.	Everywhere.

148. Red-backed Chickadee .....	W.	Woods.
149. Golden-crowned Kinglet ....	E.C.W.	Woods and thickets.
150. Ruby-crowned Kinglet .....	E.C.W.	Woods and thickets.
151. Wood Thrush .....	E.	Woods.
152. Wilson's Thrush .....	E.C.W.	Woods.
153. Hermit Thrush .....	E.C.W.	Woods.
154. American Robin .....	E.C.W.	Houses and orchards.
155. Varied Thrush .....	W.	Wood thickets.
156. Bluebird .....	E.	Orchards.
157. Western Bluebird .....	W.	Open woods and fields.
158. Mountain Bluebird .....	W.	Open woods and fields.

**COLOUR KEY TO SOME COMMON CANADIAN BIRDS\***

The following key applies only to adult spring males of some of the commonest and most easily characterized Canadian species. The figures indicate the length from tip of bill to tip of tail. As an aid to realizing comparative sizes the following table is given:—

A Warbler is about .....	5.50 inches.
A Sparrow is about .....	6.25 inches.
A Robin is about .....	10.00 inches.
A Crow is about .....	19.00 inches.

All sizes are given in inches and decimal parts of an inch.

Black, slightly iridescent, 19.25 .....	Crow.
Black, slightly iridescent, 22.00 .....	Raven.
Black, steely reflections; yellow eyes, 9.55 .....	Rusty Blackbird.
Black, purple reflections on head, yellow eyes, 9.55 .....	Brewer's Blackbird.
Black, purple reflections, 8.00 .....	Purple Martin.
Black, highly iridescent; yellow eyes, 12.00 .....	Bronzed Grackle.
Black, or brown-black; swallow-like habits, 5.45 .....	Chimney Swift or Vaux's Swift.
Black, or brown-black; swallow-like habits, 7.50 .....	Black Swift.
Black, with seal brown head, 7.92 .....	Cowbird.
Black, with yellow head and neck, 10.00 .....	Yellow-headed Blackbird.
Black, with bright red shoulders, 9.51 .....	Red-winged Blackbird.
Black above, iridescent; reddish brown below, forked tail, 6.95 .....	Barn Swallow.
Black above, iridescent; reddish rump, tail not forked, 6.01 .....	Cliff Swallow.
Black above, iridescent; white below, 5.90 .....	Tree Swallow.
Black above, violet-green on back, white below, 5.90 .....	Violet-green Swallow.

\*Contributed by P. A. Taverner, Ornithologist, Geological Survey, Ottawa.

- Black and white; with or without red spot on nape, 9.40 ..... Hairy Woodpecker.
- Black and white; with or without red spot on nape, 6.83 ..... Downy Woodpecker.
- Black and white; pied in large masses, long pointed tail, 17.40 ..... Magpie.
- Black and white; steely black above, white below, 5.90 ..... Tree Swallow.
- Black and white; steely black above, white below; violet and green back, 5.30 ..... Violet-green Swallow.
- Black and white; with creeping habits, 5.30 ..... Black and White Warbler.
- Black and white; red cap or red cap and throat, 8.56 ..... Yellow-bellied Sapsucker.
- Black and white; red head, neck and breast, 8.00 ..... Red-breasted Sapsucker.
- Black and white; red crest, 17.00 ..... Pileated Woodpecker.
- Black and white; red head and neck, 9.75 ..... Red-headed Woodpecker.
- Black and white, cream patch on hind neck, 7.25 ..... Bobolink.
- Black and white; reddish brown flanks, 8.35 ..... Towhee.
- Black, and white; red spot in center of breast, 8.12 ..... Rose-breasted Grosbeak.
- Black and white; orange or yellow spots on flank, wing and tail, 5.41 ..... Redstart.
- Black and white; orange breast, throat and eyebrow line, 5.25 ..... Blackburnian Warbler.
- Black and white; yellow crown patch, 9.00 ..... Three-toed Woodpecker.
- Black to gray above; white below, lower line of gray breast in sharp contrast; outer tail feathers white; bill flesh, 6.27 ..... Junco.
- Black to gray above; white breast and below; tail black tipped with white, 8.75 ..... Kingbird.
- Grayish and black; two black bars across breast, 10.50 ..... Killdeer.
- Gray (dark) above; light reddish brown breast and below broad black breast-band, 9.70 ..... Varied Thrush.
- Gray; red face and forehead, 40.00 ..... Sandhill Crane.
- Gray; black cap; rich reddish brown under tail, 8.94 ..... Catbird.
- Gray all above, throat and breast; latter contrasting sharply with white underparts, outer tail feathers white, bill flesh, 6.27 ..... Junco.
- Gray and whitish; small black and reddish areas; long plumes on back and lower neck, 42.00 ..... Great Blue Heron.
- Gray above; white breast and below; tail tipped with white, 8.75 ..... Kingbird.
- Gray above; black cap, white below, 6.07 ..... Carolina Nuthatch.
- Gray above; black cap and throat; white below, 6.07 ..... Black-capped Chickadee

- Gray, black and white; fine sharp colour pattern; prominent ear tufts, 9.40 .....Screech Owl.
- Light gray back and wings, remainder white; black wing tips, 24.00 .....Herring Gull.
- Light gray back and wings, remainder white; darker gray wing tips, 24.00 .....Glaucous-winged Gull.
- Light gray back and wings, remainder white; black wing tips; black ring around bill, 18.50 .....Ring-billed Gull.
- Light gray back and wings, black head and neck; black bill, 10.30 .....Bonaparte's Gull.
- Light gray back, reddish bill, 12.00 .....Franklin's Gull.
- Light gray back and wings; black cap; remainder white; forked tail; slightly grayish below, 15.00 .....Common Tern.
- Light gray back and wings; black cap; remainder white; forked tail; pure white below, 15.00 .....Forster's Tern.
- Light gray, white and brown; fine sharp colour pattern, prominent ear tufts, 9.40.Soreech Owl.
- Blue gray and black above; white below; yellow crown, flank and rump spots, 5.65.Myrtle Warbler.
- Blue gray and black above; yellow throat, flank, crown and rump spots, 5.65 .....Audubon's Warbler.
- Blue gray and black above; yellow breast with black stripes, 5.12 .....Magnolia Warbler.
- Blue gray and black above; white below; prominent ragged crest; with or without reddish breast-band and flanks, 13.02 ...Belted Kingfisher.
- Olive-gray, slightly lighter below; red or no crown patch, no eyebrow line, 4.41 .....Ruby Crowned Kinglet.
- Olive-gray, slightly lighter below; yellow or yellow and orange crown patch; white eyebrow line, 4.07 .....Golden Crowned Kinglet.
- Olive-gray above; white below; sharp round black spots on breast, 7.50 .....Spotted Sandpiper.
- Olive-gray above; whitish below; head nearly black, 6.99 .....Phoebe.
- Olive-gray above; white below; gray crown; light eyebrow line, 6.23 .....Red-eyed Vireo.
- Fawn, nearly even all over; long pointed tail, 11.85 .....Mourning Dove.
- Fawn, variegated above, creamy below; yellow under-wings and under-tail; white rump, 12.00 .....Yellow-shafted Flicker.
- Fawn, variegated above, creamy below; red under-sides of wings and under-tail; white rump, 12.00 .....Red-shafted Flicker.
- Fawn, faintly striped, above; yellow or cream throat, small black ear tufts, 7.25.Horned Lark.

- Fawn, very even over all; prominent crest;  
tail tipped with yellow, 7.19 ..... Cedarbird.
- Red-brown above; white below; metallic  
red throat, 3.25 ..... Rufous Hummingbird.
- Red-brown above; white below; breast  
heavily and sharply spotted, 11.42 ..... Brown Thrasher.
- Red-brown wings and back from eye; gray  
below, cheeks and crown, black throat and  
bib, 6.33 ..... English Sparrow.
- Red-brown below, steely black above; fork-  
ed tail, 6.95 ..... Barn Swallow.
- Red-brown below, dark gray above; black  
breast band, 9.70 ..... Varied Thrush.
- Red-brown back and flanks; black-brown  
crown and throat, 4.50 ..... Chestnut-backed Chickadee.
- Red-brown back and tail; slate wings, spot-  
ted creamy breast, 10.00 ..... Sparrow Hawk.
- Red-brown breast, remainder bright blue,  
7.01 ..... Bluebird.
- Red-brown breast, blackish above, 10.00 .. Robin.
- Red-brown and blue breast; remainder  
bright blue, 6.50 ..... Western Bluebird.
- Red-brown flank bands, remainder black  
and white, 8.35 ..... Towhee.
- Red-brown rump, dirty white below; tail  
not forked, 6.01 ..... Cliff Swallow.
- Red-brown and white; fine sharp colour  
pattern; prominent ear tufts, 9.40 ..... Screech Owl.
- Brown; very even over all; prominent  
crest; tail tipped with yellow, 7.19 ..... Cedarbird.
- Brown above, gray below; gray crown;  
reddish back from eye; black throat and  
bib, 6.33 ..... English Sparrow.
- Brown above, gray below; conspicuous  
white throat; yellow spot before eye, 6.74 White-throated Sparrow.
- Brown above, gray below; conspicuous  
black and white crown, 6.88 ..... White-crowned Sparrow.
- Brown and white; breast barred; flanks  
striped; eyes black, 20.00 ..... Barred Owl.
- Brown and white; fine sharp colour pat-  
tern, prominent ear tufts, 9.40 ..... Screech Owl.
- Brown and white; sharp dark markings on  
white ground, no ear tufts, 25.00 ..... Snowy Owl.
- Brown and white; barred all below; con-  
spicuous white spot on spread wing, 10.00 Night Hawk.
- Brown above, white below; breast spotted;  
outer tail feathers white, 6.12 ..... Vesper Sparrow.
- Brown above, white below; reddish cap;  
black line through eye, 5.37 ..... Chipping Sparrow.

- Brown above, white below; breast spotted;  
 larger spot in center of breast; outer tail  
 feathers dark, 6.30 ..... Song Sparrow.  
 Brown above, white below; creeping habits,  
 5.66 ..... Brown Creeper.  
 Brown above, white below; tawny bar  
 across breast with faint spots, 7.52 ..... Wilson's Thrush.  
 Brown above, yellow breast; black neck-  
 lace, 10.75 ..... Meadow Lark.  
 Brown above, white below; breast heavily  
 spotted, tail more reddish than back, 1.17 ..... Hermit Thrush.  
 Brown, variegated with white and cream;  
 white below; breast with many V marks.  
 17.50 ..... Sharp-tailed Grouse.  
 Brown, variegated with ochre, reddish and  
 black above; creamy below; long legs and  
 neck and bill, 28.00 ..... Bittern.  
 Brown, variegated with cream above, nearly  
 white below; very long bill, 11.25 ..... Wilson's Snipe.  
 Brown, variegated with cream above; mostly  
 ochre below; very long bill, 11.00 ..... Woodcock.  
 Brown, variegated with reddish or gray  
 above; breast heavily barred; broad tail  
 mostly reddish or gray, 17.00 ..... Ruffed Grouse.  
 Brown, variegated with black, white and  
 ochre all over; prominent ear tufts, 22.00 ..... Great Horned Owl.  
 Brown, variegated with black, white and  
 ochre all over; prominent ear tufts, 14.80 ..... Long-eared Owl.  
 Brown; obscurely marked; lighter below,  
 5.00 ..... House Wren.  
 Yellow, fine orange breast stripes, 5.10 .. Yellow Warbler.  
 Yellow, black cap, wings and tail, 5.10 .. Goldfinch.  
 Yellow, black cap, 5.00 ..... Wilson's Warbler.  
 Yellow, black face mask, 5.33 ..... Maryland Yellow Throat.  
 Yellow, red face and forehead; black wings  
 and tail, 6.20 ..... Western Tanager.  
 Yellow, darkening towards head; wings and  
 tail black, conspicuous white wing patch,  
 7.00 ..... Evening Grosbeak.  
 Yellow head and neck; rest mostly black,  
 10.00 ..... Yellow-headed Blackbird.  
 Yellow breast; black necklace, brown back,  
 10.75 ..... Meadow Lark.  
 Yellow breast; black necklace, gray back,  
 5.61 ..... Canadian Warbler.  
 Yellow breast; cheeks, rump and below;  
 black throat, crown, back and wings, 7.50 ..... Bullock's Oriole.  
 Yellow breast, rump and below; black  
 cheeks, head, back, and wings, 7.50 ..... Baltimore Oriole.  
 Yellow breast with black stripes; black and  
 gray back, 5.12 ..... Magnolia Warbler.

- Yellow breast, and face; black crown, ears and throat, 4.80 ..... Townsend's Warbler.
- Yellow cheeks; black throat and breast, 5.10 ..... Black-throated Green Warbler.
- Yellow spots on flank, crown and rump; black and gray above, 5.65 ..... Myrtle Warbler.
- Yellow spots on throat, flank, crown and rump; black and gray above, 5.65 ..... Audubon's Warbler.
- Yellow spots on flank, wings and tail, rest mostly black, 5.41 ..... Redstart.
- Yellow spot before eye; brown above; white throat, 6.74 ..... White-Throated Sparrow.
- Yellow below; back, head and throat gray; tail black, 8.00 ..... Arkansas Kingbird.
- Yellow crown; rest black and white, 9.00 ..... Three-toed Woodpecker.
- Yellow crown spot; white eye-brow line, rest olive, 4.07 ..... Golden-crowned Kinglet.
- Yellow and orange crown spot; white eye-brow line, rest olive, 4.07 ..... Golden-crowned Kinglet.
- Orange; black head, back and wings, 7.50 ..... Baltimore Oriole.
- Orange; black crown, throat, back and wings, 7.50 ..... Bullock's Oriole.
- Orange; spots on flank, wings and tail; rest mostly black, 5.41 ..... Redstart.
- Orange; throat, breast and eyebrow, 5.25 ..... Blackburnian Warbler.
- Red; black wings and tail, 7.25 ..... Scarlet Tanager.
- Red, suffused over head, breast and back; rest grayish, 9.08 ..... Pine Grosbeak.
- Red suffused over all; bill tips crossed, 6.9 ..... Red Crossbill.
- Red suffused over all, white on wings, 6.05 ..... White-winged Crossbill.
- Red shoulders; remainder black, 9.51 ..... Red-winged Blackbird.
- Red spots or nape bar, yellow underside of wings and tail, 12.00 ..... Yellow-shafted Flicker.
- Red spots or nape, red undersides of wings and tail, 12.00 ..... Red-shafted Flicker.
- Red spots or nape, otherwise black and white, 9.40 ..... Hairy Woodpecker.
- Red spots or nape, otherwise black and white, 6.83 ..... Downy Woodpecker.
- Red spot in center of breast; rest mostly black and white, 8.12 ..... Rose-breasted Grosbeak.
- Red cap or throat and cap; mostly black and white, 8.56 ..... Yellow-breasted Sapsucker.
- Red cap, throat and breast; mostly black and white, 8.00 ..... Red-breasted Sapsucker.
- Red crest; rest black and white, 17.00 ..... Pileated Woodpecker.
- Red head and neck, rest black and white, 9.75 ..... Red-headed Woodpecker.
- Red underside of wings and tail; fawn above, 12.00 ..... Red-shafted Flicker.



- Red throat (metallic); rest iridescent green, 3.75 .....Ruby-throated Humming-bird.
- Red throat (metallic); rest reddish brown, 3.25 .....Rufous Humming-bird.
- Red face and crown; yellow body; black wings and tail, 6.12 .....Western Tanager.
- Red spot on crown; otherwise olive, 4.41 ..Ruby-crowned Kinglet.
- Reddish purple, suffused; white below; faintly streaked, 6.22 .....Purple Finch.
- Blue; sky blue; lighter below, 6.50 .....Mountain Bluebird.
- Blue; indigo on head, 5.59 .....Indigo Bird.
- Blue; reddish brown breast, 6.70 .....Eastern Bluebird.
- Blue; reddish and blue breast, 6.50 .....Western Bluebird.
- Blue; and black and white; prominent crest, 11.75 .....Blue Jay.
- Blue; dark blue breast, wings and below; nearly black head; prominent crest, 11.75. Steller's Jay.

## AMPHIBIA AND REPTILES\*

**Toads, Frogs, Salamanders, Turtles, Lizards and Snakes**

These forms of our animal life are cruelly misunderstood by mankind. Our dread of them is not inborn, but is acquired, because from babyhood our elders tell us untrue things about the toads and snakes and teach us to avoid them, though, if we observe them and their habits, they will be found as harmless (except the rattlesnakes), and as interesting as goldfish, butterflies, or moths. Also they are very useful as destroyers of insects, rats and mice, which do so much damage to agriculture.

Many mysterious powers have been attributed to some of these animals. Shakespeare calls the toad "ugly and venomous," and informs us that he "wears a precious jewel in his head." The salamander is fabled to live in fire which, however, is extinguished by the chill of its body. The Latin naturalist, Pliny, tells us that he tried this experiment once, but that the creature was burnt to a powder. Our Iroquois Indians believe that contact with lizards brings on paralysis, but that the green snake, if allowed to coil about a paralysed part of the body, will cure it. Many misinformed people believe that toads make warts, that "hoop snakes" take their tails in their mouths and roll after their victims, and that the milk snake milks cows, as it is often seen about barns and out-buildings, to which it is attracted, not by the cows, but by the rats and mice which infest such places. The snake is a better rat exterminator than the cat, as it is able to enter cracks and holes which are inaccessible to the latter.

According to the United States Department of Agriculture, the annual food loss in the United States from the ravages of insects exceeds one billion dollars, and from house rats and mice (not including wild rodents), \$400,000,000. No doubt, similarly large losses occur in Canada. So protect and encourage toads, frogs, salamanders, turtles, lizards and snakes, all of which prey on pests.

The toads, frogs, salamanders, turtles, lizards and snakes, of which Canada has over seventy-five different species, are easily distinguished from each other. The toads have dry rough skins; the frogs have longer legs in proportion to the length of the body than the toads and have smooth skins, except the tree frogs, which have somewhat rough skins; the salamanders

\*Contributed by C. L. Patch, Victoria Memorial Museum, Ottawa.

have tails, four limbs and smooth skins, excepting the newts, which have rough skins; the turtles have shells. The lizards resemble the salamanders in form, but are covered with scales. The snakes are covered with scales, but have no limbs. Various species in each class differ considerably in habits.

#### Toads

Of this class, Canada has five or more species. Toads spend the winter hibernating in burrows or buried in the soil under logs or stones. In early spring they migrate to water, where the eggs, as many as 12,000 being laid by a single individual, are laid in long strings. The tiny black tadpoles emerge in a few days and swim about, feeding on minute plant and animal life, and breathing by means of gills, somewhat like those of fish. In a few weeks the limbs develop and the tail is absorbed, then they come on land, usually after a rain, and thereafter feed on caterpillars, sowbugs, grubs, snails, worms, plant-lice, mosquitoes, flies, moths, crickets, beetles, bugs, grasshoppers and locusts. It is estimated that in three months a toad will eat 9,936 injurious insects, and that of this number 1,988 are cutworms. Placing a bounty of one cent each on cutworms, the estimated value of a toad is at least \$19.88 per year.

All of the toads and frogs can produce vocal sounds; the toads are, however, the melodious voiced pond singers of the early spring.

#### Frogs

In Canada there are thirteen or more species of frogs, varying in size from the spring peeper, which measures three-fourths of an inch in length, to the bull frog, which attains a length of six or seven inches. The species commonly called "tree toads" are classed with the frogs and should therefore be called tree frogs. During the summer the various species of frogs are found in the water, in the meadow, in shrubbery, and in trees, but during the winter months they hibernate in cavities or under the bark of dead trees, buried in the soil under logs or stones, or in the mud of the ponds. In April or May they enter the water and deposit their jelly-like egg masses, which sometimes contain 6,000 eggs. The frog tadpoles or "pollywogs" are lighter in colour than those of the toad and in some species require two years to develop into frogs. Vocal sounds produced by frogs vary from the shrill "peep, peep, peep," of the spring peeper to the bass "jug-o-rum" of the bull frog.

Both the toads and frogs shed their skin several times a year and both also have considerable power of changing colour. These colour changes are caused by the expansion or contraction of black colour cells in the skin, which, when fully expanded, make the specimen appear almost black. The colour cells are influenced by the creature's nervous state (anger, fear, etc.) and by light, temperature, and surrounding colours.

Adult female toads and frogs are larger than the males. The food of the frogs is about the same as that of the toads.

### Salamanders

Canada has twenty or more species of this class, the largest of which are the tiger salamander, which attains a length of



Spotted Salamander

twelve inches; and the mud puppy, which grows to twenty inches. With the exception of the mud puppy or "water lizard," which spends its entire life in the water, the salamanders hibernate in burrows or rotten logs. The newts may spend the entire summer in the water, but the other species only remain long enough to deposit their jelly-like egg masses, which are attached to submerged plants and contain from a few to fifty or so eggs. At least one species is known to deposit its eggs in moist soil, under logs or stones. There is still a great deal to be learned regarding the habits of the salamanders.

The salamander "pollywogs" breathe by means of three branching gills situated on each side of the neck. The gills are usually absorbed in a few months, when the creatures go on land, where they may be found under moss, rocks, logs, and dead leaves or crawling about at night or after a rain. The food is similar to that of the toads and frogs.

So far as is known the salamanders are silent with the exception of the newt, which squeaks when in pain.

If a toad, frog or salamander, or the "pollywog," accidentally loses a leg, toe or tail, a new one will grow. With young specimens the new one is usually as perfect as the original, but with adult specimens the new limb is stunted.

## Lizards

This class, of which Canada has five or more species, includes the swifts, the glass "snake," the horned lizards, commonly known as horned "toads," and the skinks. The young of the horned lizards are born alive and are soon able to shift for themselves, but the other species of this class deposit fifteen or so thin-shelled eggs in or under rotting logs.

The food of the lizards, which inhabit dry, sandy or rocky localities, is similar to that of the preceding classes, with the addition of young mice. In captivity the lizards require plenty of sunshine and several inches of sand in the bottom of the cage, which should be kept perfectly dry though water must be supplied in a shallow dish, sunk in the sand. They will feed on small grubs, roaches, grasshoppers, crickets, meal worms and ants.

## Turtles

We have ten or more species of these, of which the common snapping turtle is the largest, as it sometimes attains a weight of forty pounds. Our seacoast is too far north to be inhabited by the huge leatherback turtle, which attains a



Painted Turtle

weight of 1,000 pounds, the green turtle, which is used as food, or the hawk's-bill turtle from which "tortoise-shell" is obtained. Neither does the range of the diamond-back terrapin, so highly esteemed as food, reach our southern border.

The turtles dig pocket-like excavations in sandy soil, where the white thin-shelled eggs are deposited then covered over and left to be incubated by the sun's heat. They usually hatch in August or September, but, if the nest is situated in a cool shady place, development is slow and the young do not hatch out until the following spring. Snapping turtle eggs and those of the soft-shelled turtles are spherical in form, while the other species deposit eggs ovoidal in shape.

The turtles feed on vegetable matter (water plants, berries,

buds, etc.), dead meat, small fish, frogs, crayfish, snails, slugs, bugs, caterpillars, flies, larvae, beetles, crickets, grasshoppers, moths, cutworms, molluscs, and the snapping turtle on young water-fowl.

Some species pass the winter buried in the earth, while others remain in the mud at the bottom of the ponds, where they sometimes fall prey to muskrats.

#### Snakes

Excepting the rattlesnakes, none of our twenty-seven or so species are poisonous and, as they feed chiefly on insect pests and destructive rodents, they are far more useful to agriculture than most of us realize. The principal foods are slugs, snails, insect larvae, beetles, crickets, grasshoppers, caterpillars, frogs, toads, small fish (suckers, catfish, etc.), crayfish, gophers, meadow mice, house mice and young rats, which accounts for the presence of snakes about barns and granaries. Small snakes are sometimes eaten by larger ones and some species eat rattlesnakes without suffering ill effects.



Rattlesnake

The young of some species are born alive, while other species deposit their white eggs, with leathery coverings, in moist hollow stumps or under decayed logs, from which they absorb moisture, thus becoming

swollen and discoloured during the incubation period, which lasts several weeks.

The outer skin of the snake does not grow larger along with the snake, therefore it must be replaced from time to time by one of more ample proportions. Adults shed this outer skin three or four times in a season, while young, growing specimens require a new skin more frequently.

A snake's soft forked tongue is absolutely harmless, as also are the short backward-curving teeth. Located in the upper jaw of poisonous species are two long hollow fangs, which are connected with the poison glands, situated in the sides of the

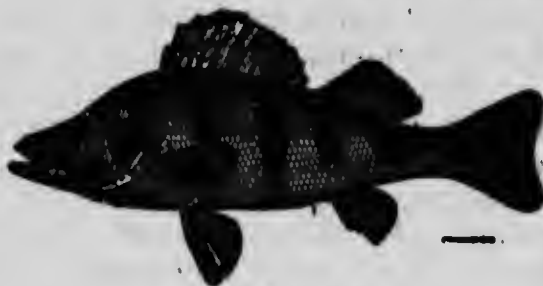
head. Near the point of each fang is a slit through which the poison is ejected into the wound. When not in use the fangs fold back against the roof of the mouth. If shed or broken, they are soon replaced. A venomous snake never springs bodily at its victim and it is physically impossible for one to strike more than two-thirds of its length.

It is estimated that only two per cent. of the persons bitten by venomous North American snakes die as a result. Reference to the proper treatment for the bites of venomous snakes will be found on page 444.

If specimens of reptiles are found by Scouts which cannot be identified with the aid of "The Frog Book," by Dickerson, or "The Reptile Book," by Ditmars, they may be sent for identification to the Victoria Memorial Museum, Ottawa.



## FISH AND FISHING



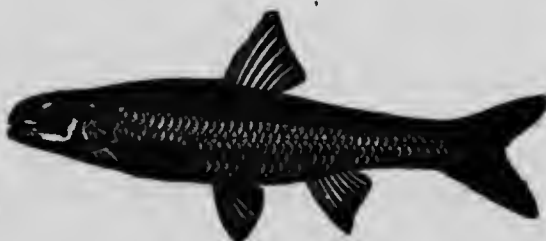
*Perca flavescens*  
Yellow perch



*Pomolobus aestivalis*  
The alewife or river herring



*Micropterus salmoides*  
Large-mouth black bass



*Notropis hudsonius*  
Minnow or shiner

There is no industry—not even the fur trade—about which the early history of Canada is so entwined as the fisheries. The commerce and navigation, indeed, of the whole North American continent were founded on the fisheries, for the immediate result of the discovery of the northern coasts of the New World was the establishment of a great fishery. In those days the whole Atlantic coast region from the New England States to Labrador was known as "Baccalaos," the land of dried codfish.

Do you know, Scouts, that Canada possesses the most extensive fisheries in the whole world? The coast line of the Atlantic provinces, from the Bay of Fundy to the Strait of Belle Isle, measures over 5,000 miles, and that of British Columbia fully 7,000 miles, without taking any account of the more northerly waters. In addition to these immense sea-washed stretches, we have in our unnumbered

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The illustrations of various fish appearing on this and the two following pages have been reproduced by kind permission from the Handbook for Boys of the Boy Scouts of America.



inland lakes—great and small—a fresh water fishing area of no less than 220,000 square miles. It is no exaggeration to add that the waters in and around the Dominion of Canada are stocked both with food and game fishes in greater abundance than those of any other country. The total number of fish species that have been taken in Canadian waters is 569, including several varieties all our own. Prior to the European war the annual catch of commercial fish in Canada was valued at about \$35,000,000. The year 1916 witnessed, however, a tremendous development both in the domestic and export fish trade, resulting in a catch valued at \$39,000,000. This was followed in 1917 by a catch valued at \$52,000,000.

For centuries Britain has mainly relied upon the fisheries to supply men for her navy; and the grim struggle with Germany has shown again—like that which Napoleon forced upon us a century ago—what it means to a maritime nation to possess a well-organized fishing indus-



*Fundulus diaphanus*  
Killifish: top minnow



*Catostomus commersonii*  
Common sucker: white sucker



*Coregonus clupeiformis*  
Common whitefish



*Esox lucius*  
Common pike pickerel



*Oncorhynchus tshawytscha*  
Chinook salmon



*Acipenser oxyrinchus*  
The Atlantic sturgeon



*Salvelinus fontinalis*  
Brook trout: speckled trout



*Ictalurus punctatus*  
The speckled catfish

try and a hardy fishing population. Of all the heroes of the war, where can we find any braver than the sailors of the fishing and merchant fleets who have faced danger unprotected and who, as has been said, when their vessels were torpedoed, went down cheering for Old England?

Not only are fishermen everywhere brave men but was it not from among the fishing folk of Galilee that our Lord drew his chief Apostles? Fishing is in truth both an ancient and honourable calling.

Scientists classify fish into orders, families and species. For Scouts, however, a more serviceable grouping is as follows: (1) fresh water fish, (2) migratory fish between fresh and salt water, (3) marine fish. Some of the fresh water fishes that are well known by reason of their size, abundance and food value are the trout, bass, whitefish, perch, pickerel, sturgeon, catfish and suckers. The migratory fishes between salt and fresh water include the shad, alewives, or river herrings, white perch, striped bass or rock fish and the Atlantic salmon of five different species, all of which die after spawning in fresh water. The common eel follows the reverse practice of spending most of its life in the fresh water, where it often becomes permanently land locked, but prefers to run down to the sea to spawn. The marine fishes found on the coasts of Canada embrace very many of excellent food value, such as the cod, haddock, halibut, hake, herring, mackerel and flounder.

In passing it may be mentioned that the sea monsters, known as whales, notwithstanding the fact that their whole lives are

spent at sea, are not fishes, but warm blooded mammals like ourselves, and descended, as it is thought, from land or water-side forms of animal life.

Most fishes are such shy creatures that it is hard to get close enough to them to study them in their native state. Much useful information has, however, been gathered on these lines by patient observation; yet there is abundant scope remaining for sharp-eyed Scouts to supplement what has already been ascertained regarding fish habits.

Let all Scouts too by their own example endeavour to secure fair treatment for the different fish species. Do not fail to return to the water all uninjured fish that are not needed either for food or study.

Are there any Canadian Scouts who never go fishing? One can hardly think so in a country where there is so much good fishing to be had. But to any such, let it be said: "You don't know, boys, what you are missing." See to it that your next patrol or troop outing takes you to the nearest good fishing and try your luck, even if it be with the simplest of bait and tackle.

Fishing is a delightful outdoor pastime in which no more is essential to enjoyment than a rod, cut on the spot, a cork float, and an ordinary hook, well baited with a juicy worm, grass-hopper, or even a left over scrap of pork from the midday meal. At the same time, the fun will in many cases be increased if one owns and learns how to handle a light, jointed rod, provided with a reel, and with a fly or other artificial bait. The whole equipment for "scientific" fishing is so light and takes up so little room that it should form part of every camping outfit.

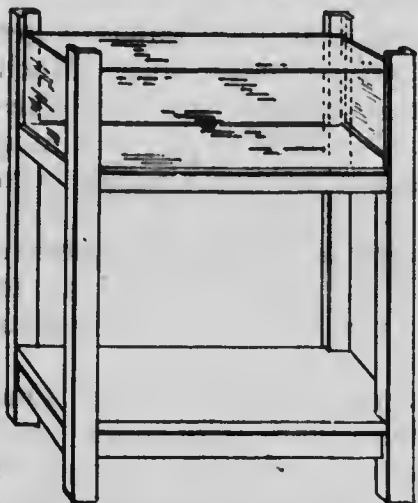
Then, as you know besides "it is not all of fishing to fish." There is the restfulness that the very sight of water brings to weary nerves and senses—the restfulness of change from work or study—and with it the mystic charm of wood and hill and nature's myriad voices all around.

#### Start an Aquarium

A great deal of pleasure can be derived from an aquarium which boys can easily build for themselves and either stock with sunfish, catfish and minnows, of their own collecting, or with the fancy varieties of goldfish which are obtainable from the dealers.

Put in snails with your fish to keep the algae off the plants

and include a couple of tadpoles as scavengers. It is great fun to watch their legs grow out as the tail grows short, and see them turn into frogs. Add fresh water clams and water insects of different varieties such as whirligigs, diving spiders, and water boatmen. A tank full of beetles is a show in itself. Have a pair of newts and watch them change their skins, when these grow overtight, by slipping out of them like a boy peeling off a close fitting shirt.



Home-made Aquarium.

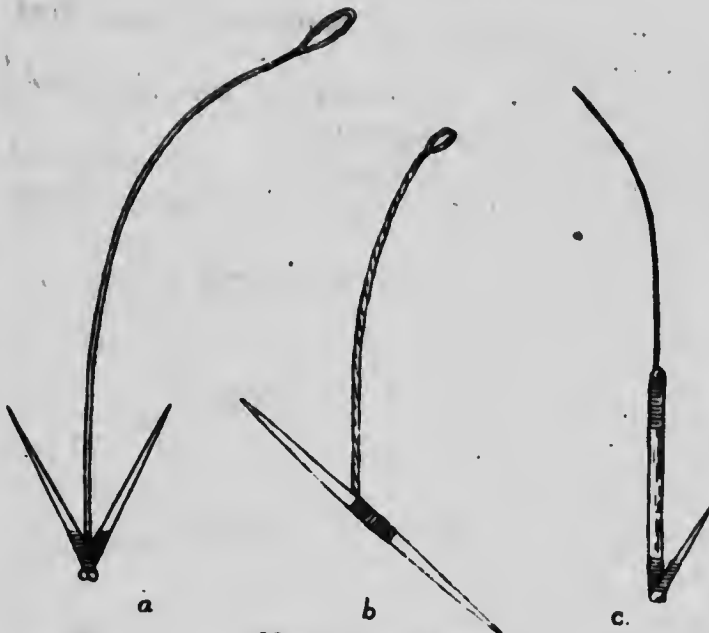
In a properly balanced aquarium there should be swamp and water plants, such as Canadian water weed, tape grass, arrowhead, water milfoil or water crowfoot, which give off oxygen for the fish to breathe, whilst the latter in turn give off carbonic acid gas which contributes towards the plants' nourishment. Thus the water in a balanced aquarium keeps itself pure and needs only to be replenished occasionally to replace loss by evaporation.

The illustration herewith shows a home-made aquarium of simple design which handy Scouts can readily make for themselves. The four posts in this design may be of any kind of wood, two inches square. The posts are three feet in height and the glass tank is eighteen inches long, twelve inches wide and ten inches high. The glass and special cement for joining the latter, to make the whole watertight may both be purchased of any glazier.

#### Native Fishing Methods.\*

Apart from the usual fishing methods, Scouts with a taste for handicrafts may find it of interest to try out one or two of the native methods. Circumstances may also arise in which these may come in handy, when none of the ordinary appliances (hooks, etc.) are at hand.

\*Contributed, by Mr. F. W. Waugh, Victoria Memorial Museum, Ottawa.



Native fish hooks.

Many Canadian Indian tribes still use one or more of the hooks shown in the illustrations herewith, of which (a) and (b) are known as "gorges."

(a) Consists of two small pieces of sharpened bone lashed together with gut or sinew,

to which a leader of the same material is attached. The leader, in one of these, from Vancouver Island, consisted of whale-bone.

(b) Is a piece of bone, a couple of inches long or less, sharpened at each end and suspended a little to one side of the middle.

(c) Is made of a small piece of tough wood and a piece of sharpened bone with its larger end placed in a little groove, or mortise, and lashed into place with bark or sinew. All are baited for use.

Spearing fish is extremely interesting but requires considerable skill and experience of the refraction of light in water. It is always necessary, in fact, to strike lower than where the fish actually appears to be, unless it is very close to the surface.

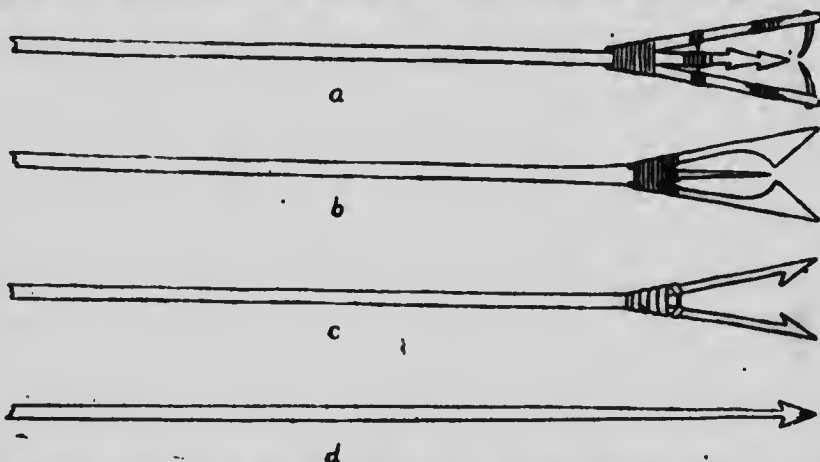
The spears, shown herewith, are all Indian devices and can be easily made in camp, or in the workshop.

(a) Is a form used by the Copper Eskimo, who live along Coronation Gulf. The side pieces are of bone and are spliced; but single strips of hardwood would answer for these just as well. The barbs may be made of sharpened nails (in the Eskimo specimens they are of copper). The central spike

in the case of the native implement is of bone, but a sharpened iron spike will answer nicely.

(b) Is a Micmac Indian form and shows that the side pieces (which are of maple) need not be barbed.

(c) Is an Iroquois fish-spear. This has no central spike and is made by simply cutting a slender tree or sapling, splitting



one end for about a foot, then tying it with bark to prevent further splitting, and spreading the split ends apart with a small wooden wedge, which is tied into place. Bind well with bark or cord about the wedge and sharpen and barb the forked ends. The tips are usually hardened by burning them slightly.

(d) Is a spear with a single barb, or tang, made by the Iroquois. This is also burned slightly at the tip. The handles may be made from twelve to thirteen or fourteen feet long. The spear heads, as shown, may also be made at home with handles some three or four feet in length. The latter should be whittled so as to taper off obliquely and may be spliced or tied to longer handles when the fishing place is reached.

Spring and fall are the spawning periods, at which time no fish spearing should be attempted. It will be as well also for Scouts to consult the game and fish laws of their respective provinces to be sure of the exact season and methods allowed in taking fish.

#### SHELLS AND SHELLFISH

“Four and twenty tailors went to kill a snail,  
The best man amongst them durst not touch her tail.”

The illustrations of various shellfish appearing on pages 315-316 have been reproduced by kind permission from the Handbook for Boys of the Boy Scouts of America.

So runs a favourite rhyme of our nursery days. But really, boys, there's nothing in the nature of these shy creatures to justify any dread on our part, for, in truth, there is much about them that is interesting, if we took time to study their habits; none of them can do us any harm, and most of them are good to eat.

In all of the countries bordering on the Mediterranean, land snails have been held in high esteem as an article of diet from earliest times, and emigrants from these regions to America have brought snails with them to this continent as something they couldn't do without. The Roman soldiers carried this favourite food with them when Julius Caesar invaded Britain in 55 B.C. Some of the land snails found in Canada, such as the white-lipped snail, shown in the accompanying illustration (fig. 1), are from one to two inches in diameter; others are scarcely any larger than the head of a pin.



FIG. 1  
White-lipped snail  
(*Polygyra albolabris*)

The interior lakes and rivers teem with fresh water species of snails, clams and mussels, as one may see, when walking along the water's edge, by raking over the bottom close to shore. Three of the principal fresh water snails are the pond snail (see fig. 3); the orb snail (see fig. 4) which has its coil flat; and the physa (see fig. 6) in which the coil is turned to the left instead of to the right.



Fig. 3  
Pond Snail.  
(*Lymnaea stagnalis*).



Fig. 4  
Orb-Shell (*Planorbis trivolvis*)



All up and down the beaches at the seaside, between high and

low tides, one finds interesting and pretty shells. But how few there are that even know their names? To the average person they are just oyster or snail or clam shells, and unless the shell is empty when we pick it up our impulse is to hurriedly throw it away rather than touch "the slimy stuff" inside. So slight is our knowledge that many do not know that this "slimy" substance is the living creature itself which made the shell for its own protection. We think only of a "snail's pace" as about the slowest thing imaginable, of oysters as dumb, and of the



Fig. 6  
Bubble snail  
(*Physa heterostropha*)



Fig. 5  
Black mussel (*Mytilus*)

that no other animal group—for mollusks are animals—has so wide and varied a distribution, and that in size they range from creatures too small to be seen with the naked eye to tropical forms of sea snails measuring two feet in length, four feet across, and weighing five hundred pounds.

Mollusks may be divided into three groups, as follows: those that inhabit the sea, those that inhabit fresh water, and those that breathe air and live on dry land. Altogether there are several hundred kinds that are found on the Canadian sea coasts, oysters, mussels (see fig. 5) and clams being, of course, pre-eminent among them as sources of food supply.

Not only are oysters sought after as a food supply, but in the case of certain varieties for their pearls. Mother-of-pearl is the inside lining of shells. Pearl buttons are cut from the shells of fresh water clams and cameos from conch and helmet shells. The whelk, shown in the illustration herewith, (fig. 2) is common on both the Canadian coasts:

#### The Squid

The cuttle-fish or squid, with his long tentacles, and backbone of lime, on which the household canary sharpens his bill, furnished the ancients with their ink supply, and if you poke one with a stick, or catch him on a hook, he may either spray you at several feet distance with an inky fluid, or else escape in the water by throwing out a sort of "smoke screen" all about

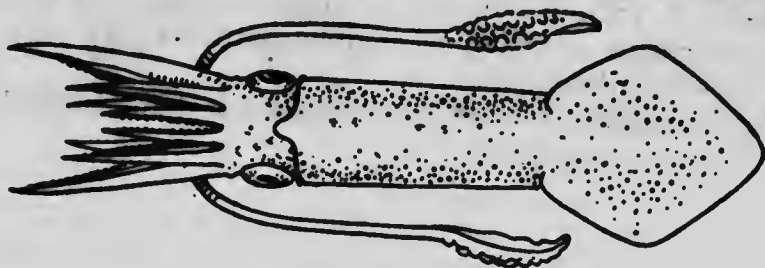
mollusks in general—to give them their proper name—as among the lowest and most uninteresting forms of life. But this is not so, for we are told by one who knows that there are mollusks that climb, leap, crawl, burrow, swim, dive, float, and even fly;



Fig. 2  
Whelk (*Buccinum undatum*)



him till he gets away. The original and only genuine India ink is still extracted from cuttle-fish in the far East, and a single cuttle-fish gives off ink enough to blacken several buckets of



The Squid.

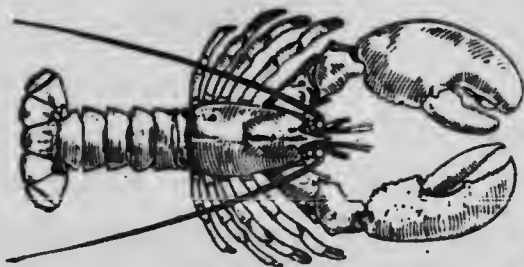
water. The cuttle-fish is world-wide in its distribution and if you are lucky enough to possess a salt water aquarium you can bring one of these creatures home and see him try out his tricks.

In ancient times a Mediterranean variety was used in the production of Tyrian purple for the dyeing of kings' clothing. In Bible days these fabrics were worth their weight in gold.

Giant cuttle-fish of great size have been found in the deep sea—some of them up to sixty feet in length—which are said to be very destructive to fish life. Like the octopus, or devil fish, these creatures have a habit of attaching themselves by their long arms to any moving object and often hamper divers in under water work.

#### Lobsters, Crabs, etc.

The term shell-fish, apart from its reference to mollusks, is loosely applied to lobsters, crabs, shrimps and crayfish, on account of their shelly coat-of-mail coverings. These latter belong, however, to a separate order from the mollusks, known as the crustaceans, comprising many different families and species which serve as fish food and are also available for human consumption. The only crustacean in common use for



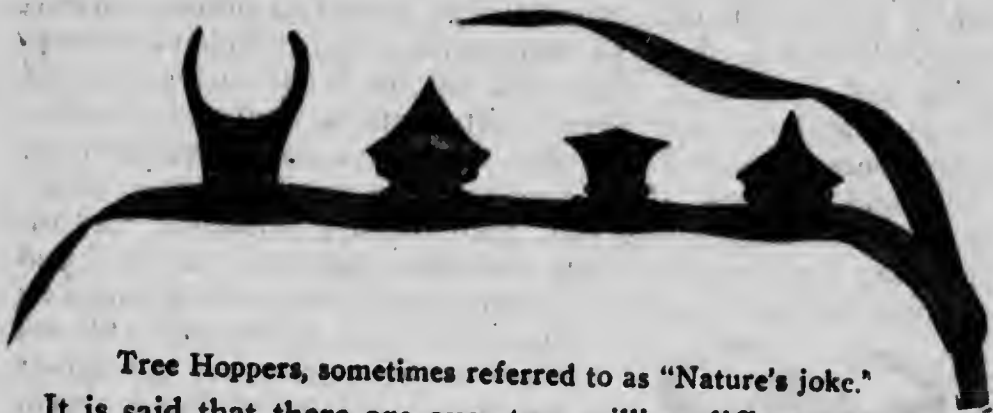
The Canadian Lobster.

food purposes is the lobster, although there are immense numbers of crabs and shrimps on both our eastern and western sea coasts, which in other countries are considered just as good eating as lobsters, and more accessible to families of smaller means. In Conti-

mental Europe the crayfish, a familiar inhabitant of Canadian lakes and streams, is known as the poor man's lobster. Both the mollusks and crustaceans serve as nature's scavengers of the seashore, without whom the water's edge would be diseased, instead of carrying as it does nature's own healing for many human ailments.

A list of books helpful to students of shells and shell-fish will be found on page 631.

## INSECTS.\*



Tree Hoppers, sometimes referred to as "Nature's joke."

It is said that there are over two million different kinds of living creatures in this great world of ours, ranging in size from whales, the giants of the animal creation, down to forms of life so tiny that thousands of them may live and move and have their being all in a single drop of water. Yet, wide as is the range of the animal kingdom in nature, the number of insect species far exceeds all others combined. Moreover, as Dan Beard, the National Scout Commissioner of the Boy Scouts of America, has observed, "among the little folk of this world, known as the insects, we find almost as many traits of character as we do among the human beings. We have the idle insects, the industrious insects, the warlike insects, the robber insects, the dead-beat insects, the stupid insects and the intelligent insects.



Ground Beetle.

We also have among them the low, degraded insects, dirty insects, clean insects, the sluggish, slow-moving insects, the bright, lively insects, the useful insects and the beautiful insects; all of them are interesting, all of them in one way or another are of vast importance to man, and a study of their habits is not only a source of fun, but it is also a most useful study. Besides which, boys, nature lovers live longer and happier lives than ordinary people."

\*The illustrations appearing in this section of the Handbook have been kindly furnished by Prof. John Henry Comstock, of Ithaca, New York.

Here then is still another field of interest, easy of access, in which Boy Scouts may range at will, a field of infinite variety, in which there is plenty of room still left for individual observation and discovery. For, with all the book shelves full of books that have ever been written about moths, butterflies, bugs, bees, ants and the rest, their joys and sorrows, their wars and conquests, their inconceivable numbers, their architectural and engineering skill, their teeming "colonies" and interesting domestic life, their sovereign "queens," "slaves" and faithful subject "workers," their marvellous transformations

from one form to another, still are there worlds aplenty yet to conquer before we find out all that is worth knowing about these marvellous little folk of nature, the insects.

To deal adequately with a subject, so vast, within the limits of a few short paragraphs, would, of course, be impossible, besides which the days when one small brain could be stretched to comprehend the sum total of human knowledge are long since gone forever. But it is not necessary in order to enjoy nature that one should give up all other pursuits to do so, for it can be made a recreation, a restful and most enjoyable occupation for our vagrant thoughts whilst we move along life's



Giant Water Bug.

pathway. Many of the world's best naturalists have been just amateurs. Men who interest themselves in different subjects are spoken of as "many-sided men"; men with only one interest in life, whatever that interest may be, are "cranks."

Now, boys, if what you have just been reading on this particular phase of nature study should have anything in it that appeals to your interest and imagination, don't let the other fellow laugh you out of it with the slang taunt of your being "bughouse." Don't let your dear mother's shivering dread of spiders and caterpillars deter you. For the former, ten to one, is himself a stupid, and the latter, on this subject, with all due respect, does not understand. Rather seek out someone who lives on terms of intimacy with some of these

little folk—not of the vermin tribe—and get him to take you out with him afield and acquaint you with the best methods of observation and study, including butterfly nets and how to wield them, alcohol and poison bottles, drying boards and specimen boxes. Or, if you can't find anyone who knows enough about the insect world to do all this for you, buy Dan Beard's "American Boys' Book of Bugs, Butterflies and Beetles," or "Insect Life," by John Henry Comstock, or some one of the other treatises on insects, referred to on p. 631, and after you have read and inwardly digested the guide book you will be ready to set out as a full fledged amateur "bugologist" on your own account.

### The Ant

Do you know, boys, that as distinguished a man and authority as Lord Kelvin, writing of the ant, perhaps the most intelligent of all insects, has said that "it is difficult altogether to deny them the gift of reason. Their mental powers differ from those men but not so much in kind as in degree."

Consider then the ant, thou sluggard, as the wise King Solomon advised, and you will learn lessons in skilful leadership, in prudence and industry, and in the value of co-operation that will be of lasting value to you through life.

Most of the species of ants familiar to Canadian boys are of the kinds that build their nests in the ground. But did you ever, by chance or design, uncover one of these colonies with its underground chambers and galleries in which the industrious female "workers" — you'd know they were ladies from the slenderness of their waists—carry on almost the entire labour of the busy household; some digging, others hauling the loosened grains of sand up to the surface; still others foraging for food to feed the family and to nourish the larvae, which may take as long as one hundred days to emerge from their cells; whilst the "queen" ant is waited on submissively by old and young so that she may devote her full energies to egg-laying.

Every ant colony has its own "queen" — or it may be "queens," for the royalties in the ant world are not so jealous and despotic in their disposition as the "queen bees." Some colonies own several mounds and there are individual



The Ant.

colonies in certain parts of the world having as many as two hundred "hills" and extending over hundreds of square yards and several feet below the surface of the ground. These are built by the harvester tribe of ants, which fill their subterranean granaries with vast stores of seeds for winter consumption.

Then again there are their cousins, the honey-eating ants, who depend, like the bees, on the sweets secreted in flower blossoms for their sustenance.

Many ants feed largely, almost entirely, on sweets secreted by other kinds of insects—among them, the small green flies, or plant lice, known as aphids—and one of the most remarkable things about ant nests is the presence in them of aphids who are waited on by the ants, and otherwise treated as privileged guests in return for the honey-dew which they give off, and which the ants so much desire. An ant has been seen to walk up to an aphid and stroke its back with its feelers, in return for which the pleased aphid would give off a drop of honey-dew that the ant quickly swallowed. In its way the relationship between the ants and the aphids is not unlike that which exists between mankind and the milch cattle. So solicitous are the crafty ants of their guests' welfare that they will even build special accommodation for them and take the greatest possible care of their eggs.

The number of different kinds of beetles too inhabiting ants' nests is very large, many of them being also blind, helpless and entirely dependent on the ants for their support. Some of these lodgers, as far as we can see, appear to be mere drones and hangers on, who should be driven out to shift for themselves.

Not all ants, of course, live underground. The wood ants, for instance, build themselves shelters of leaves, twigs, etc., above ground. Other kinds again are tunnelers in wood.

Scouts will be interested in the movements of the large bands that sometimes range over the country of "driver ants," as they are called, who kill and carry off all the tiny insect life before them. In the Canadian woods you will often meet innumerable bands of these marauders abroad on their destructive quests. It has long been known among students that slavery is still practised in many ant colonies.

These marvelous little folk of nature, the ants, have their own means of communicating with each other, often patting one another with their feelers. No one has yet learned their

language, but certain it is that they must have some form of utterance, or other way of making their wants and wishes known, and if, indeed, they are not gifted with all the faculties that the Almighty has bestowed upon us nevertheless by their example they can teach us valuable lessons in many respects.

#### Rapid Breeding Record

Nature has provided the insects with many devices for their own protection. Notwithstanding this fact, many species would perish if it were not for the fact that they breed so rapidly. Experiments by the naturalist Reauner have shown that a single aphid, or plant louse, might in one year of uninterrupted breeding, under favourable conditions, produce 5,904,000,000 of offspring. This immense number is almost beyond our comprehension. Dr. E. Porter Felt, the New York State Entomologist, has, however, calculated that if this possible offspring were marshalled in ordinary military formation of four abreast they would make an army long enough to encircle the globe at the equator, and enough would remain to stretch across this continent. In other words we would have an army of plant lice 27,952 miles long, all possible decendants from a single louse in one season. This almost passes belief. As many as twelve million aphids have, however, been found on a single cherry tree.

#### Moths and Butterflies

Perhaps your fancy among insects lies rather along lines of beauty in form and colour. If so, you need not travel far afield in any part of Canada to find attractive and interesting specimens of moths and butterflies. The former ordinarily make their appearance by night and are strongly attracted to lights. Moths are often spoken of as "millers." Dr. Dyar's big catalogue of moths mentions 6,622 species ranging from a Brazilian variety, measuring ten and one-half inches across the wings, down to the tiny pests which infest our clothes presses and cupboards.

Moths and butterflies both lay eggs which hatch into caterpillars. Moths and butterflies are things of joy and beauty alone, which hurt nothing; so full of the very joy of living that they scarcely take time to eat. In their despised "worm" state, however, they do nothing but eat and destroy. A strange case this of Dr. Jekyll and Mr. Hyde among insects.

When the caterpillar at last can eat no more, it transforms itself into what is called a chrysalis or pupae, on an almost motionless object with the parts glued together under a covering sheath, in which state many of them pass the entire winter to burst forth from their wrappings again in the spring as moths or butterflies. Many of these pupae are wrapped in silk cocoons which they spin for themselves just before turning into their motionless condition.



Cecropia Moth.

Perhaps the most interesting of these are the caterpillar forms of the cecropia moth, the luna moth, the polyphemus moth and the promethia moth, which are all very large, feeding upon the leaves of different trees, and spinning strong silken cocoons. The polyphemus moth, in particular, has been experimented with a great deal in the United States in the hope of being able to use its silken thread for domestic purposes.

It is not at all difficult to study the transformation of moths and butterflies, and caterpillars can easily be fed until they turn into the chrysalid form.



One of the commonest Canadian butterflies is the monarch, a large reddish-brown species, with black markings, and an



Caterpillar of Cecropia Moth.



Cecropia Moth Chrysalis.

especially strong flier, which ranges all the way from Canada to the southern states of the United States. This creature

feeds by preference on the milkweed plant and the eggs it lays on the milkweed hatch out in the form of caterpillars, nearly two inches long, having a yellow head striped with black and a white body with narrow black and yellow bands. When this caterpillar is ready to transform into the chrysalis it suspends itself from a leaf by its tail end, the skin splits and gradually draws back, revealing the chrysalis itself — pale pea-green in colour with golden spots.



"Walking Stick."

Limitations of space make it impossible to reproduce here the life histories of the endless varieties of bugs—one of the tumble bugs, familiar to readers of Mark Twain, was worshipped as a god amongst the Egyptians—and of the different kinds of flies, bees, beetles, etc. Nor can we treat here of the wiles of the crafty spiders. The woods, fields, ponds, and roadside, all are swarming with insect forms of animal life which will well repay study, and if you have scarce time for indulging yourself in this recreation through the day, let the fire-flies of early summer light your footsteps through the evening gloaming into this great world of little folks all about us, of whom we know so little.

#### Economic Loss Through Insects

Apart from the human interest side of insect life, it should also be known among Scouts that the economic loss in Canada every year through insect ravages totals between one hundred and two hundred million dollars. Insects are credited with the destruction of one hundred million dollars worth of field crops alone and from twenty-five to seventy-five million dollars worth of trees and timber annually, and the Canadian government very properly maintains a staff of experts to study these pests and to prescribe the best methods of keeping them in check. There is what is known as a balance in nature in which the various forms of plant and animal life—includ-

ing the very smallest fly of the insect world—all have their part, and the more we learn about these things the more we feel—

**“How great is God Almighty  
Who hath made all things well.”**

*[Faint, illegible text, likely bleed-through from the reverse side of the page.]*

## CHAPTER IV

### CAMPS AND CAMPING

Camping plays a very important part in the Scout training. Without it, indeed, the training, however excellent it may be along other lines, is incomplete. There is something irresistibly fascinating for the average boy in camping life with its complete change of scene from home and street and school surroundings to the freedom and vigour that belong alone to God's great out-of-doors. By all means, therefore, let the camping feature be well kept up.

Boy Scout camps are of different kinds, ranging from the large camps of several weeks' duration, under the control of provincial, district or troop authorities, to the patrol week-end or over-night hike. Each, however, of the various forms of camping in vogue among Scouts has its own peculiar interest and value.

It would be impossible in the brief space of a single chapter to attempt any exhaustive treatment of the entire subject. It is, however, recommended that Scout officers and Scouts should fully acquaint themselves with the suggestions herein contained, whereby many of the blunders of inexperience may be avoided and the risks as well which are incident to life in the open. The chief risks are those of excessive exposure in severe weather, rheumatism from faulty beds, digestive trouble from irregular or improperly prepared meals, and over indulgence in water sports and sun baths. If, however, the camp site is wisely chosen and the camp is under qualified direction, the danger side need cause no concern.

#### Note to Parents

Camping out is one of the points in Scouting which is strong in its appeal to the boy nature and offers an opportunity to teach boys self-reliance and resourcefulness; besides giving health and development. There is a charm about tent life that one must experience to understand.

Many parents who have never had experience of camp life themselves look upon it with misgiving as possibly likely to be

rough and risky for their boys; but when they see their lads return well set up and full of health and happiness outwardly, and morally improved in points of practical manliness and comradeship they cannot fail to appreciate the good which comes from such an outing.

It is sincerely to be hoped, therefore, that no obstacle may be placed in the way of the boys taking a portion of their summer holidays in this way.

#### Forethought

Some measure of forethought is necessary to ensure the success of any kind of Scout camp. Naturally the larger camp calls for more in the way of detailed preparation. But, even in the case of the over-night hike, a few things are positively essential to the fullest benefit and enjoyment. Whatever the form or duration of the outing it is necessary to have a well considered programme worked out beforehand for the entire camping period with adequate supplies and equipment and competent direction. If you are to get the most out of the experience far more is needed in the way of preparation on the officers' part than the determination of a general plan. Every feature, indeed, of the camp arrangement—transport, supplies, equipment, cooking, health and training—should be discussed between the Scoutmaster and his Assistants and Patrol Leaders so that as many as possible of the details may be mapped out in advance. Take the whole troop, in fact, into the plans before they are finally decided on, and—one other word of advice at this point—don't under-estimate the educational value of well selected games and play.

Although the prime object should be instruction in Scoutcraft, the boys will quite properly look upon the experience as a holiday as well, and there is great need for tact on the Scoutmaster's part to couple plenty of freedom with the necessary discipline and adherence to the pre-arranged programme.

Under manly, purposeful direction the camp can be so conducted as to leave a lasting influence for good on the boys' lives, whilst in weak, purposeless hands it may prove little more than a loafing picnic, productive even of more harm than good.

The camp site should be dry, level ground if the camp is of any size and duration in order that there may be room for safe play. Avoid hollows. Common sense will suggest the convenience of being close both to wood and safe drinking

water. Unless the camp is to be of the very briefest duration, the boys should also be within reach of a swimming place. The tents are best pitched where they will get the morning sun and shade in the afternoon.

There is no best form of tent for all purposes. There are, however, many kinds of tents on the market, which will answer the boys' purposes. Or the tent can be home-made from patterns, such as those referred to on pages 337 and 378.

With most troops the camp is an annual event to which the boys look forward with keenest anticipation and there is something missing in the training that overlooks this outstanding feature.

#### Comfort in Camp

The evening camp-fire is a prime feature of every successful Scouting camp, which is particularly strong in its appeal to the boys' imagination. The crackle and glow of the wood fire, the leaping tongues of flame into the gloom, the circle of friendly faces and the dark background of the fragrant evergreen woods, with the stories and other camp-fire stunts, together make up an experience in a boy's life never to be forgotten.

Some people talk of "roughing it" in camp, but these are generally of the tenderfoot class. An old backwoodsman doesn't rough it; he knows how to look after himself, and to make himself comfortable by a hundred little dodges. For instance, if there are no tents he doesn't sit down and shiver and grumble but at once sets to work to rig up a shelter or hut for himself. He chooses a good spot for it, where he is not likely to be flooded out if a storm of rain were to come on. Then he lights up a camp-fire and makes himself a comfortable mattress of boughs or ferns or hay. An old Scout is full of resource; that is, he can find a way out of any difficulty or discomfort. And the boy who has attended a few Scout camps will be found pretty well able to shift for himself.

A camp is a roomy place, but there is no room in it for one chap, and that is the fellow who does not want to take his share in the many little odd jobs that have to be done; there is no room for the shirker or the grumbler; there is no room for them in the Boy Scouts at all, but least of all when in camp. Every fellow must help, and help cheerily, in making it comfortable for all. In this way comradeship grows. On service, if one fellow is out on night duty and gets wet through, one

of those left in the tent will be sure to get ready a cup of hot coffee or cocoa for him when he comes in, and that is the kind of thing every Scout should think of and carry out.

#### Provincial Camps

It is unnecessary that attention should be given in the present Handbook to the subject of provincial camps since these are conducted under the experienced direction of the provincial Scout officers and councils. A number of provincial camps have been held and have been attended with marked success.



Camp Tamaracouta, Quebec.

#### District Camps

In some parts of the country district camps have been held with an attendance of boys from different troops in the Local Association area or areas comprising the district. The special need of these camps is that of experienced oversight and sufficient executive help to ensure control, discipline and a variety of interests.

#### TROOP CAMPS

Most of the Canadian troops of Scouts hold their individual troop camps each summer in which, apart from wholesome recreation, instruction is given in various features of the Scout training, particularly in those lines of work which must almost of necessity be practised out-of-doors.

Camp conditions are, indeed, ideal for most features of the training and the troop ordinarily returns from camp improved alike in physique and efficiency. In some cases the outing is held in the same place from year to year. In other cases a change of scene is either preferred by the boys themselves or is prompted by necessity.

It is an old saying that anticipation is half the pleasure of realization. Many fellows get quite as much fun out of making their own tents as they do in occupying them. What fun many boys, both old and young, take besides in overhauling their precious camping outfits during the long winter evenings and planning for the next summer's vacation. The troop is certainly making no mistake which takes plenty of time to work out its plans for the next summer's camp. Camping out is something in which it pays to be prepared.

#### Selection of Camp Site

Where to hold next summer's camp? It is not fair to put the entire responsibility on the boys for the selection of a camp site. It is not a bad plan to have some members of the troop visit the different localities suggested before the choice is finally made. But so much depends in this matter on experience and sound judgment that the Scoutmaster should himself see the appointed spot before the choice is finally made. The site question in some cases settles itself through the existence of an ideal recreation ground of undoubted suitability, not too far away. Unhappily, too many of the natural picnicking and camp grounds are passing out of existence. The following are essential to a good camping site: safe drinking water, firewood, an open and fairly level spot possessing good natural drainage, direct sunshine in the morning and shade if it can be had in the afternoon, with exposure to the prevailing breezes. Avoid damp ground, hollows, deep forests and new clearings. It is better not to pitch tents under heavy foliage on account of dampness and insects. An open knoll or rocky point, partly wooded, jutting out into lake or stream, is perhaps ideal.

In every troop there are Scouts who would rather swim than eat. A safe swimming place becomes, therefore, a very important consideration.

Get out into the hills, if there are any. The seaside and Canada's unnumbered interior waters also provide many good camping grounds, especially if there are boats available and bathing is possible. Try to picture the site selected under the different conditions that are likely to occur of sun, wind and rain, before making your selection.

How much room is needed for a camping site? Well, it is hard to get space enough anywhere in these days to hold a



troop of healthy boys, so take all you can get. For a troop encampment there is need of at least an acre of high, dry and fairly level ground and as much more as you can secure. If there is open space nearby for field games, so much the better.

Ordinarily it will be found that the boys do not want to camp too near home. The nearer the camp is to the boys' homes, however, the less will be the expenses of travelling to and fro. There is an advantage as well in having it located within the parents' reach. On the other hand there is undoubted value in change of scene for men and boys alike. Four or five miles from the nearest town is none too far and well back from the road, if you are camping in a settled district. It is better not to be overrun with visitors. Keep away from summer resorts.

Freedom from black-flies and mosquitoes is an important consideration. The former are at their worst on low, wooded ground. Swamps are the favorite breeding grounds for mosquitoes.

Better buy cordwood than destroy young timber. Dead wood is, however, generally available and serves well for firing. Saplings come in handy for tent piles, cots and rough furniture, if the troop's requirements are not already furnished in these respects.

It is not safe for a troop to go camping without having the Scoutmaster with them and the Scoutmaster who does not go along is missing the time of his life. Nothing should be allowed to keep him from going under canvas with his troop. When the Scoutmaster is present the boys can all go in swimming without risk, when the proper time comes, while the swimming picket mounts guard to see that no mishap betides. Difficulties are sure to arise in the course of a camp in which a man's help is badly needed. No troop should be allowed to go into camp without being accompanied by a responsible adult leader.

With all that has been said on the subject, the camping site is after all only one consideration—and not the most important at that. The big feature of a boys' camp is neither its location or equipment, but the spirit that prevails.

#### Tents

When you have decided on holding a troop camp and its

whereabouts it is time to think of the necessary equipment, one important feature of which is the tents.

Sometimes individual Scouts have tents of their own; in other cases the tents for the troop camp are part of the troop property. There are a number of different styles on the market and the wise choice depends in the main on the use to which the tent is to be put, that is to say, whether it is to be used in a fixed or standing camp, or one which you will be moving from day to day. The former permits of your taking along a fuller equipment and more of the comforts of home.



Wall Tent.

The style generally preferred for permanent camps is the wall tent in the form illustrated herewith. The wall tent is, without doubt, the most widely used style of tent at the present time. For troop camps it is popular both in the ten by twelve and in the twelve by fourteen feet size. The number of boys you can accommodate in either one of these tents depends on whether they are to sleep on cots or on beds built on the ground. (See p. 354.) Cots, of course, take up considerable room. In the ten by twelve feet size, for instance, there is not much space left to move about when you have only three cots installed and four means a crowd. Six boys, though, can sleep comfortably enough on a ground bed.

Ten-ounce army duck will serve all ordinary purposes and it is all the better for being khaki or green in colour, as many boys find white trying on the eyes.

Unless the material has received a waterproofing treatment it will need a fly or extra roof over it, as an additional pro-

tection against heavy or long continued rains. The use of a fly makes a tent cooler in hot weather and warmer when the weather is cold. The waterproofed tent, on the other hand, costs less than the plain tent with fly, is less bulky, lighter in weight, is not subject to shrinkage or mildew, and really has a great deal to commend its use. Special care must however be used to prevent sparks setting it on fire.

Scouts can easily do their own waterproofing by either the alum and sugar of lead (acetate of lead) process, or by the paraffine process, both of which are referred to at pages 377.

If there is no wooden floor in the tent a sod cloth is a distinct advantage; that is to say, a strip about nine inches wide, sewed to the bottom of the tent on the inside, which serves to keep out draughts, insects and other pests.

House tents of wood and canvas combined, erected on the plan shown in the accompanying illustration, are, of course, admirable in many ways.



House Tent.

It is easy to tell what a tent should be — rain, storm and insect proof,

easily set up, roomy, cool and airy in daytime, dry and comfortable at night. Yet within the limitations of available materials, cost and weight, these desirable qualities are not all as easily obtainable as one might desire.

Military tents (bell tents) can sometimes be bought at second-hand to advantage. These are circular in form, with a diameter of fourteen feet, and are supposed to accommodate twelve soldiers on active service. Scouts will, however, find rectangular or square tents better suited to their requirements.

In some places it is possible to rent tents from the dealers, or you can make your own during the winter months, and this, perhaps, is the best way of all as it comes cheapest in the end. If you can make up one or two extra tents while you are about it you may be able to sell them at a good profit. The seams may be sewn by machine but will be stronger if sewn

by hand with white cotton cord well waxed. The edges of the tent should be bound all round with rope for strength. Clothes line will do for this purpose.

### The Indian Tepee



Indian Tepee.

A particularly picturesque form of tent is the Indian "tepee," or "wigwam." This is circular in form and is erected on nine to thirteen light poles, thirteen or fourteen feet long, taken from the woods and lashed together about two feet from the top. A tripod of three poles is put up first, the others being laid in the intervening angles. The peak of the tent is fastened to the last pole and the canvas

is then spread over the poles and pegged down all around. A ten foot tepee is the smallest size for practical purposes and is the best size for boys' use. It requires twenty-two square yards of material. Tepee poles should be stacked carefully against a large tree for future use. An advance party should prepare suitable poles for use in constructing this form of tent.

A small hole is left in the peak of the tepee which serves for ventilation. This style of tent admits also of a fire inside, being almost the only make which does so. The Indian tepees were made of buckskin or other hides and many famous campers have claimed for them that they made an ideal movable home.

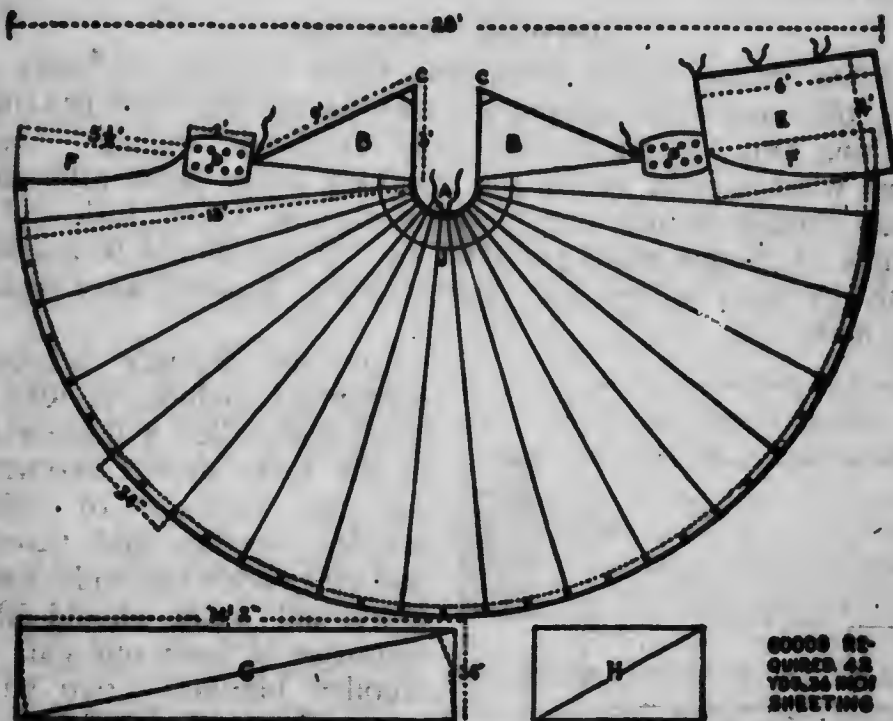
The following tents are necessary for a camp of twenty-four boys.

One dining tent or fly is required, large enough to accommodate four tables, and benches for same; sixteen by twenty feet in size is about right, and it should have as high a wall as possible. The tables should be at least two feet six inches in width by seven feet in length to seat from six to nine boys each.

There should be a headquarters tent, not less than seven by nine feet. The Amazon style is suggested as being specially suitable for the purpose. This tent may also be used as sleep-

ing quarters for the Scoutmaster and his Assistants, if separate tents are not procurable.

Three sleeping tents should be provided, at least twelve by fourteen feet, to accommodate patrols of six to nine boys, inclusive of the Patrol Leader, provided the boys sleep on the ground.



Design of an Indian Teepee

A, Suspension cord for erecting on one pole; B, Smoke-flaps; C, Pockets to receive ends of smoke poles; D, Overlapping flaps for lacing the lodge around the poles; E, Door; F, Cutting for door; G, Section of sheeting showing how to cut it to make two segments; H, Section of sheeting showing how to cut to make the smoke-flaps; J, Reinforcement. The 17 segments should be very carefully cut, and as carefully sewn together, using a  $\frac{1}{2}$ -inch lap seam. This is the strongest and best design, and will well repay the additional pains necessary to make it. It should never be used without a draft-curtain, the use of which is described on the following page.

—By courtesy of Edward Cave and Messrs. Doubleday, Page & Co.

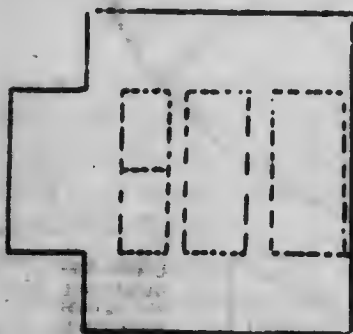
A shelter is required besides for cooking purposes. This may be either a wooden shack or tent with four or five foot walls and provided with a suitable opening for a stove pipe. If the cooking is to be done in a trench, a fly is suitable, but if a stove or camp range is used, a fly does not give sufficient protection from the wind. The size should be at least eight by ten feet if either a shack or tent is used, and somewhat larger in the case of a fly.

A canvas or cotton screen should be taken along for the latrine.

In bad weather it is an advantage to have an additional tent available, large enough to accommodate the whole troop. This may then be used for games, Scouting practices, entertainments and other purposes.

#### Personal Equipment

After having settled about your tents it is time to think of the other necessary equipment, such as the beds and bedding, clothing and cooking utensils, and the food supplies. Apart from what is embraced in the troop kit, every Scout attending camp should include one plate, bowl, cup, knife, fork and a couple of spoons in his personal kit. These should be marked with the boy's initials for identification. Enamel ware dishes are best.



Housewife.



Let the Scout's personal equipment include, besides, a small roll called a housewife, in the form shown herewith, for the carriage of toilet articles, needles and thread, and other odds and ends. Each individual outfit should also comprise at least one pair of woollen blankets (two pairs where there is any likelihood of cold weather), a water-

proof sheet, a cotton bed tick, fishing tackle, with cord or strap for tying these up.

#### Clothing

Every Scout, in addition to his haversack, Scout knife and uniform, should take the following things to camp:

- An old felt hat or cap,
- An old greatcoat or waterproof coat,
- A flannel shirt,
- A cotton shirt,
- An extra pair of drawers,
- Two pairs of stockings,
- Pajamas,
- A pair of stout walking boots and extra laces,
- A pair of canvas running shoes,

A sweater or old jacket,  
A swimming suit,  
Two handkerchiefs,  
Two towels,

Reading material and such small musical instruments as mouth-organs, flutes, kazoos, concertinas, banjos, may also be taken along in accordance with the boys' individual fancies.

It is easy to waterproof woollen clothing. A simple process of waterproofing is that of making a solution of anhydrous lanolin, or wool fat (which can be bought at any drug store) in gasoline or benzine, and soaking the garment in it about three minutes, then wringing out gently, stretching to shape and hanging up to dry. This process is very cheap and will do no injury to the cloth. The proper proportions are two ounces of lanolin to a gallon of benzine or gasoline for winter use and three ounces for other conditions. Cloth that has been immersed in a stronger solution has a tendency to stiffen in the cold. The three ounce formula will serve for blankets. If the lanolin is slow in dissolving mix it first in a little chloroform.

#### Camp Cooking Fires

The cooking fire should be made to leeward, or down wind of the camp, so that the smoke and sparks from the fire don't blow into the tents.

Before lighting your fire, remember always to do as every backwoodsman does, and that is to cut away or burn all leaves, grass, etc., round the fire, to keep it from setting fire to the surrounding grass or bush. Many bad bush-fires have been caused by inexperienced campers fooling about with blazes which they imagined to be camp fires. In burning the grass for this purpose (or "ring-burning," as it is called), burn only a little at a time, and have branches of trees, or old sacks ready to beat it out when it has gone far enough.

Scouts should always be on the lookout to beat out a bush fire that has been accidentally started at any time, as a "good turn" to the owner of the land or to people who may have herds and crops in danger.

It is little or no use trying to learn how to light a fire by hearsay; the only way is to pay attention to instructions and then practise laying and lighting a fire yourself. In Mr. Seton's book called "Two Little Savages," instructions for laying a fire are given in the following rhyme:—

"First a curl of birch bark as dry as it can be,  
Then some twigs of soft wood, dead from off a tree,  
Last of all some pine knots to make a kettle foam,  
And there's a fire to make you think you're sitting right at  
home."

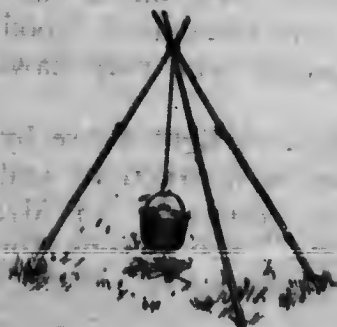
Remember to begin your fire with a small number of very small chips or twigs of really dry dead wood, lightly heaped together, and a few fine shavings, or a little straw or paper to ignite it. About this should be put little sticks leaning together in the shape of a pyramid, and above this again bigger sticks similarly standing on end, as shown in the illustration herewith. When the fire is well alight bigger sticks can be added, and finally logs of wood. A good thing for a cooking fire is to get a pile of red-hot ashes. If you use three large logs, they should be placed lying on the ground, star-shaped, like the spokes of a wheel, with their ends centred in the fire. A fire made in this way need never go out, for as the logs burn away you keep pushing them towards the centre of the fire, always making fresh red-hot ashes there. This makes a good cooking fire, and also one which gives very little flame or smoke.



Star Fire ready to light

If you want to keep a fire going all night to warm you, put good sized logs, end to end, star-shaped, and one long one reaching to your hands, so that you can push it in from time to time to the centre without trouble of getting up to stoke the fire.

To leave your fire alight at night, cover it over with a heap of ashes, and it will smoulder all night, ready for early use in the morning, when you can easily blow it into a glow.



Tripod and Kettle.

To boil your "billy," or camp kettle, you can either stand it on the logs (where it often falls over unless care is taken), or, better, stand it on the ground among the hot embers of the fire; or else rig up a tripod of three green poles over the fire, tying them together at the top, and hanging the pot by a wire or chain from the poles. But in making a tripod do not, if there is an old Scout in camp, use poplar sticks for poles, because, al-



though they are easy to cut and trim for the purpose, old-fashioned Scouts have a fancy that they bring bad luck to the cooking. Any other kind of wood will do better. The old time tripod and kettle over an open fire on the level ground is not a very satisfactory method of cooking at best as the wind is apt to blow the smoke, sparks and even the heat itself in all directions other than the right one to boil the kettle. The wind is the bane of camp cooking.

As good a kind of camp kitchen as any can be made with two lines of sods, bricks, thick logs, or flat stones, about six feet long. These two lines should not be quite parallel, but about four inches apart at one end and eight at the other—the big end towards the wind. (See illustration herewith.)



Camp Kitchen.

Another way, when there are several "billies" to cook, is to put them in two lines a few inches apart, one end of the line facing towards the wind. Lay your fire of small wood between the two lines, and put a third row of "billies" standing on top of the first two rows—so that a small tunnel is made by the "billies." In the windward end of this tunnel start your fire; the draught will carry its heat along the tunnel, and this will heat all the pots. The fire should be kept up with small split chunks of wood.

Another way to make a good cooking fire is as follows: Drive two stout stakes into the ground about four feet apart, both leaning a bit backwards. Cut down a young tree with a trunk about fifteen feet high and ten inches thick; chop it into five-foot lengths; lay three logs, one on top of another, leaning against the upright stakes. This forms the back of your fireplace. Two short logs are then laid as fire-dogs, and a log laid across them as front bar of the grate. Inside this "grate" you build a pyramid-shaped fire, which then gives out great heat. The



Camp Grate.

"grate" must, of course, be built so that it faces the wind.

When boiling a pot of water on the fire, do not jam the lid on too firmly, as, when the steam forms inside the pot, it must have some means of escape. To find out when the water is beginning to boil, you need not take off the lid and look, but just hold the end of a stick or knife, etc., to the pot, and if the water is boiling you will feel it trembling.

Old scouts always take special care to keep the kitchen particularly clean, as, if scraps are left lying about, flies collect and smells arise which are very likely to poison the food while it is being got ready for a meal and thus bring sickness to the scouts. So keep the camp-kitchen and ground around it very clean at all times. Dig a small pit a couple of feet deep near the kitchen and throw all refuse that won't burn into this and fill in the pit with earth every night.

#### Clay Ovens

Scouts should understand the construction of a clay oven for camp use, for there is no end to the number of tasty things that may be cooked in it. Either of two methods of construction may be followed. The simpler one is to find a place on the side of a clay bank and dig away a portion so that there will be a vertical front a couple of feet high; about three or four feet back drive a stake about five inches in diameter down far enough to reach into the oven after it is dug out. Now dig back into the bank, making the opening curved at the top, and far enough back to reach the stake driven into the ground. The stake is then removed and the opening which it leaves becomes the flue. The opening at the front should be kept as small as possible, as it becomes the door of the oven and will necessarily need to be closed while baking. Smooth the inside of the oven by wetting it, then build a small slow fire inside to dry it out gradually. When the oven is to be used for baking a good fire is first built in it and kept burning for a couple of hours. The fire is then raked out, and the articles to be baked are put inside, the door and the flue being closed with flat stones, sods or bark. Judgment and experience are required as to how long different things should be left in the oven for baking. The best way to learn is to open the oven occasionally to see. Of course, such an oven can be built only in a clay bank, as sand or gravel would cave in.

Another method of construction may be followed in case there is not a clay bank handy. For this purpose a form is first built



Barrel form of Clay Oven.

by placing a row of upright green sticks in the ground and bending them over to form arches. Sticks are then laid horizontally over these arches, a five or six inch stake being left projecting through the roof to form the flue. The form is then covered with a coating of clay and the end built up with clay and sods. An opening is left at the end opposite the flue for a door. This oven may either be left to dry slowly in the sun or a small fire may be built inside to dry it out. After the first fire has been built and the inside partially dried out it is a good plan to give the oven another coating of clay, and again build a fire inside. Sometimes ovens are built in bee-hive shape with an opening for a flue at the top and a small opening at the bottom of the wall for a door. A barrel, if available, may be used as a handy form on which to build an oven.

#### Cooking Outfits

Troop cooking kits range in practice from the barest essentials to the last word of convenience and comfort. Some Scoutmasters find it best to employ an adult cook for the duration of the camp; in other instances the cooking is all done by the boys themselves. Much depends on the experience that the troop members have individually had in cooking practice. When an adult cook is taken along, the Scoutmaster does not himself have to give quite as much time to this important feature of the camp routine; on the other hand, a mistake is made if the troop camp does not give all its members a chance to qualify not only for the cooking part of the second and first class badge test, but also for the special badge which is awarded for cooking. Unless the troop is a very small one, the employed cook will need to have wood cut and water carried for him, and other help. In some troop camps a good deal of the cooking is done by patrols.

The essential implements for camp cooking include kettles, pots (chosen so as to nest inside one another), pans, pails,

knives, forks, spoons and dishes, with dish-cloths and towels, ladles, can openers, and like accessories. The cooking and mess utensils may be few and simple but should be adapted to the out-of-doors use which is to be made of them. In many



Cooking Outfit.

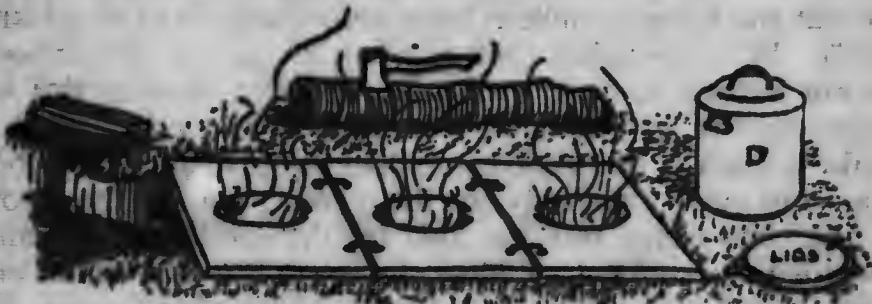
cases the cooking kit has been provided by donations. Where the necessary appliances have not been provided in this way the troop funds should be drawn upon for the purchase of the essential articles.

When a professional cook is employed, it will generally be found that a folding steel range with oven is preferred



Cross-Section View of the Sectional Stove Top, Fire Pit, and Flue

A tile or a tin can will serve for the chimney. The trench for the flue is covered with brush, then with earth. A hillside site, with the flue uphill and the entrance to the fire pit downhill, adds efficiency, but is not always feasible.



The Sectional Stove Top in Use; Flue Not Shown

--By courtesy of Edward Cave and Messrs. Doubleday, Page & Co.

for cooking purposes. A second hand stove will generally do if it is in a fair state of repair. Regular camp ranges are, of

course, the best.

If the cooking is to be done in the open in a trench the outfit should include a sheet steel top with suitable openings and covers and the necessary stovepipes.

Following is a list of other kitchen utensils which will ordinarily be required for a troop camp of twenty-four boys:—

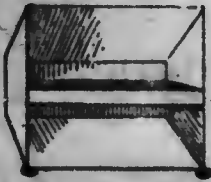
- 4 pots (to nest within one another) with covers, for porridge, soup, meat and vegetables,
- 1 iron pot with iron cover for baking beans, about 12-16 inches in diameter and 6 inches in depth,
- 1 covered roasting pan,
- 2 dishpans (also available for breadmaking and other uses)
- 2 dippers,
- 3 bakepans, which will also serve for frying bacon, etc.,
- 2 frying pans, as large as possible, made of sheet steel,
- 1 crock for butter, with cover,
- 1 large coffee pot, which will also serve for tea or cocoa,
- 1 airtight container for salt (5 lbs.)
- 1 container for pepper,
- 4 prs. salt and pepper shakers (glass or porcelain),
- 1 rolling pin,
- 1 turnover,
- 6 lanterns,
- 5 gallons of coal oil,
- 1 metal lined box to hold bread, cookies, doughnuts, etc.,
- 3 clean cotton bags to cover meat placed in earth refrigerator,
- 30 plates, assorted sizes, some of the number to serve also as pie plates (the boys are expected to bring their own plates, knives, forks, spoons, mugs, etc.),
- 12 saucers,
- 1 large butcher knife,
- 1 smaller butcher knife,
- 3 paring knives,
- 2 cooking forks,
- 2 cooking spoons,
- 2 ladles,
- 4 platters,
- 2 6-quart milk pails, with tight covers,
- 4 water jugs,
- 4 milk jugs,

- 4 wash basins,
- 1 spade, light weight,
- 1 pick, light weight,
- 1 shovel, light weight,
- 2 sharp axes, with leather covers over edges,
- 1 whetstone,
- 2 combination can openers and corkscrews, dish-towels and wash cloths.

The best material for the cooking utensils is aluminum. Table oilcloth is of service in keeping the tables sweet and clean.

#### Camp Cookery

Pork and beans, bacon and eggs, are favorite dishes in most camps. Bread is generally obtainable, or it may be made in camp. If it is to be baked in camp, a kind of oven has to be made, either by using an old earthenware pot or tin box, and putting it into the fire and piling coals all over it, or by making a clay oven (see p. 342.)



Folding Reflector.

Portable folding reflectors are sold by most outfitters in which biscuit and bread may be baked and fish, fowl or meat roasted before either a camp fire or camp stove. These are similar in form to the reflectors used by our great-grandmothers for baking biscuits before a hearth fire. The top slopes downward like a shed roof and the bottom upward at a similar angle, by means of which the heat from the fire is reflected both upwards and downwards on the baking pan in the middle, thus ensuing even baking top and bottom. One advantage of this contrivance is that it folds up flat; another is that it can be used before a fire as soon as the latter is lighted without having to wait for a bed of coals.

Bread twist is easily baked by the camp fire. To make this, first cut a growing branch of hardwood about the thickness of your finger and sharpen it at both ends. Then make a long strip of dough, about two inches wide and one-half inch thick. Wind it spirally down the stick, and plant the latter in the ground close to a bed of coals so as to let the bread bake as it will by turning the club two or three times within half an hour. (See illustration.)

Though it may seem strange to a tenderfoot, old Scouts know that neither bread or meat are wholly necessary to keep

them well fed. Biscuits are good for camp food and can be carried in your pocket or haversack. One of the best kinds of bread for camp is what the Boers and most South African



Baking bread twist.

—By courtesy of James A. Wilder.

hunters use, and that is "rusks." These are easily made. You buy a stale loaf at the bakers, cut it up into thick slices or squares, and bake these in an oven or toast them before a hot fire until they are quite hard like biscuits. They can be carried in a spare haversack or bag, and will do in place of bread. Soft bread easily gets damp and sour and stale in camp.

#### Biscuits

In general, biscuit or other small cakes should be baked quickly by a rapid heat; large loaves require a slower, more even heat, so that the outside will not harden until the inside is fully done. For a dozen biscuits use  $1\frac{1}{2}$  pints flour;  $1\frac{1}{2}$  heaping teaspoonfuls of baking powder;  $\frac{1}{2}$  heaping teaspoonful of salt; 1 heaping tablespoonful of cold grease; and  $\frac{1}{2}$  pint cold water.

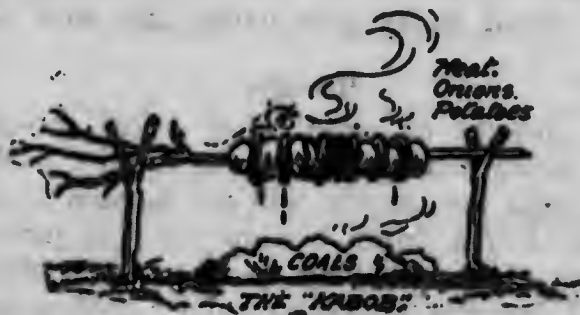
The amount of water varies according to the quality of the flour. Too much water makes the dough sticky and prolongs the baking. Baking powders vary in strength; the directions on the package should be followed in each case.

Mix thoroughly with a big spoon or wooden paddle, stirring the baking powder up first with the flour and then adding the salt. Rub into this the cold grease (which may be lard, cold pork fat or drippings) until there are no lumps left and no grease adhering to the bottom of the pan. This is a little tedious, but it doesn't pay to shirk it; complete mixing is necessary to success. Then stir in the water and work it with the spoon until the result is rather a stiff dough. Squeeze or handle the dough as little as possible because the gas that makes the biscuit light is already forming and should not be pressed out. Dust some flour on the mixing board, or table, and toss the dough on the board. Flour the rolling pin, or bottle or

bit of peeled sapling which may be used as a rolling pin, and also the edges of the can or can cover which is to be used as a biscuit cutter. Gently roll the dough to three-quarters of an inch in thickness, stamp out the biscuits and lay them in the pan. Roll out the culls or left over pieces of dough and make biscuits of them too. Bake until the front row turns brown; reverse the pan and continue until the front row is similarly done. Twenty minutes are required in a closed oven, and somewhat longer over the camp fire, earth or stone oven.

When making "twist" baked on a stick, the dough is prepared in the same manner as described above for biscuits.

Every Scout should know how to cook his own meat and vegetables, and to make bread for himself, without regular cooking utensils. For boiling water a Scout usually has his tin "billy" in which he can also boil vegetables or stew his meat, or he may cook his meat by sticking it on sharp sticks and broiling it close to the camp fire.



—By courtesy of James A. Wilder.

Meat may also be wrapped in a few sheets of wet paper, or in a coating of clay, and put in the red-hot embers of the fire, where it will cook itself. Birds and fish may also be cooked in this manner, and there is no need to pluck the bird before doing so as the feathers will stick to the clay as it hardens in the heat, and when you break it open the bird will come out cooked without its feathers. A small bird or medium sized fish will cook in this way in about one hour. Larger ones require more time and may be left cooking all night. Another way is to clean out the inside of the bird, get a pebble about the size of its inside, and heat it till nearly red hot; place it inside the bird, and put the bird on a grid-iron, or on a wooden spit over the fire.

The following instructions are given for some of the splendid dishes that can be prepared by Scouts in the open.



### Porridge

Rolled oats may be cooked much quicker than the old fashioned oatmeal, which latter should cook over an hour before it is fit for use. To make porridge for six persons from rolled oats, take two quarts of boiling water, add one teaspoonful of salt and stir in gradually about one pint of rolled oats. Boil for about ten minutes, stirring occasionally to prevent burning. A double boiler is the surest method to prevent burning, and may be improvised by putting a small vessel inside a larger one containing some water with a few pebbles in the bottom of the larger vessel to keep them apart.

### Bacon

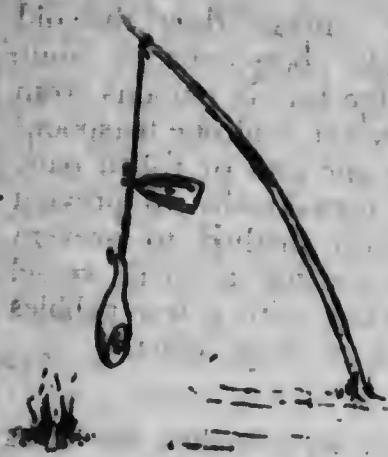
Slice quite thin and remove the rind, as it makes the slices curl in the pan. Fry slowly over a few coals and turn often to avoid burning. Remove the slices before they become too hard. They will turn crisp on cooling.

### Hunter's Stew

Clean and scrape any kind of meat well and then cut into small pieces about an inch square. Treat in the same way any vegetables obtainable, such as potatoes, turnips, carrots, onions, etc., and put them in the kettle, adding water or soup till half full. Mix some flour, salt and pepper together and rub the chunks of meat well into this mixture, then place them in the kettle along with the vegetables, with just sufficient water to cover, and no more. The stew should be ready after simmering for an hour and a half.

### Rabbit

Lay the rabbit on its back. Cut off the legs at the first joint, then slit the skin between the legs and push the hind legs through the skin until the hind legs are skinned; pull the skin towards the head, the same as turning it inside out. You may have to relieve it in some places with a sharp knife but you will find that it will come off quite easily, particularly if the body is still warm. Next slit down the middle of the belly from the ribs and clean out all entrails. Wash well in warm water. Cut up, taking off the legs first, and make a stew similar to hunter's stew. For frying, select only young rabbits or if old parboil them first with salt and pepper. Sprinkle the pieces with flour and fry brown on both sides. Rabbits are not fit to eat in the late summer.



Camp spit.

### Birds

It is always better to scald a bird before plucking. Grasp a few feathers at a time between the thumb and first finger, as close to the skin as possible, and pull towards the head. Pick out all pin feathers and quills and singe at once. Then cut off the head and the legs at the first joint. Make an opening so that the insides can be carefully drawn without breaking the gall bladder. Wash well with warm water. It can then be cut in pieces for stewing, or fried in the same way as rabbit. Or it can be roasted whole beside the fire, broiled over the hot coals, or baked in the clay, as previously described.

### Fish

Grasp the fish by the tail, or if convenient, drive a nail through the tail and scale towards the head with swift steady strokes. An old knife with a dull edge makes a good scaler. Cut off the head, fins, and tail, open the body and remove the insides. Wash in cold water, scrape off the slime, and dry with a clean cloth or towel. Many people prefer skinning to scaling, and with some varieties of fish, skinning is decidedly preferable; for instance, in the case of catfish and eels it is necessary. Small fish should be fried whole with the backbone severed to prevent curling. Large fish should be cut into pieces, with the ribs cut loose from the backbone so as to lie flat. Rub the fish well in bread crumbs or corn meal to brown them, and use plenty of hot grease.

### Baking Beans in the Ground

To bake beans in the ground, the beans should first be sorted in order to get rid of all the poor ones, then washed well in clean water. For a patrol of six to eight Scouts about three pints of beans is sufficient for a baking. If there is time, they should be soaked in water over-night, then boiled slowly for about half an hour. If time does not, however, permit the over-night soaking one-quarter of a teaspoonful of baking soda may be added to the water in which they are boiled. While the beans are boiling about one pound of salt pork is boiled

separately. After boiling drain the water and scum from both the pork and the beans. The meat is then cut up and one-half of it put on the bottom of the kettle, the beans poured over this and the rest of the pork spread on the top. Salt and pepper is sprinkled over all and about a tablespoonful of molasses is added, or a little sugar. Enough boiling water is poured over the beans to cover them. The lid is then placed on the kettle.

The bake hole is prepared as follows. A hole is dug in the ground about eighteen or twenty inches in diameter and a foot deep. A fire is built in the bake hole, hardwood being preferred for this purpose, and kept going till there is a plentiful supply of red hot coals. After raking out the coals from the hole, the kettle is put in, and the hot coals arranged around and over it, the whole being covered with a few inches of earth, and left there all night. If it looks as though there might be rain during the night the bake hole should be covered with bark or some other material to shed the rain and prevent the coals from being put out.

**\*Suggested List of Food Supplies**

Following is a suggested list of food supplies required for a Scout camp of 24 persons (including Scoutmaster and one Assistant) for a fortnight or thirteen full days. This list is based on the assumption that a camp cook is employed and that the camp is provided with a cook-stove and kitchen equipment:—

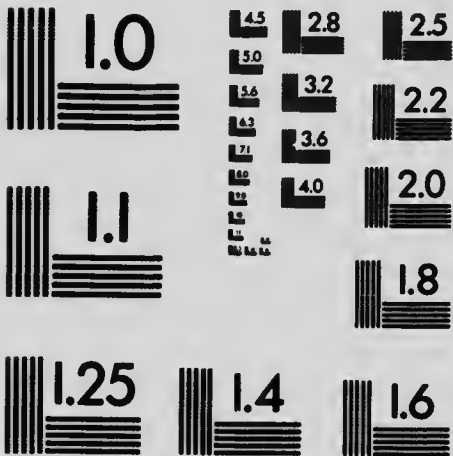
Rolled oats . . . . .	15 lbs.
Prepared breakfast foods .	32 pkgs. (Two or three kinds for variety.)
Tea . . . . .	2 lbs.
Coffee . . . . .	3 lbs.
Cocoa . . . . .	3 lbs.
Sugar . . . . .	50 lbs.
Rice . . . . .	4 lbs.
Salt . . . . .	2 small bags.
Pepper . . . . .	¼ lb.
Mustard . . . . .	¼ lb.
Currants, 2 lbs. . . . .	2 pkgs.
Raisins, 3 lbs. . . . .	3 pkgs.
Flour . . . . .	20 lbs.
Pan-cake flour . . . . .	6 pkgs.

\*Acknowledgment is made of the assistance of Scoutmaster W. A. Proctor, of Ottawa, in connection with the preparation of the list herewith of food supplies and the suggested menus following.



# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



**APPLIED IMAGE Inc**

1653 East Main Street  
Rochester, New York 14609 USA  
(716) 482 - 0300 - Phone  
(716) 288 - 5989 - Fax

Macaroni . . . . .	7 lbs.
Beans . . . . .	10 lbs.
Prunes . . . . .	15 lbs.
Corn syrup . . . . .	3 five-pound pails
Molasses . . . . .	2 qts.
Jam . . . . .	4 five lb. tins.
Marmalade . . . . .	2 seven lb. tins.
Condensed milk . . . . .	6 one lb. tins.
Soup tablets . . . . .	3 doz. pkgs. (1 doz. each kind).
Lime juice . . . . .	12 bottles (quarts).
Cheese . . . . .	5 lbs.
Lard or other shortening . . . . .	10 lbs.
Soda biscuits . . . . .	20 lbs.
Potatoes . . . . .	3 bags.
Onions . . . . .	5 lbs.
Bacon . . . . .	10 to 15 lbs.
Hams (cooked) . . . . .	2 (About 6 or 7 lbs. each. Cooked Ham will be found far more econom- ical, no waste, no bone, all meat.)
Salmon . . . . .	12 cans (unless fish is easily obtained).

Either finnan haddie or boneless codfish also makes excellent camp fare.

Butter, eggs, rhubarb and lettuce can be obtained much more cheaply and generally in better condition from near-by farmers. Allow about 2 ozs. of butter per boy per day.

Fresh milk, 2 gals. per day.

Bananas, oranges, berries, etc., may be obtained in many cases from nearby dealers.

Peaches, pineapple, etc., 6 cans each.

If fresh meat can be got for two days in each week, allow  $\frac{3}{4}$  lb. per boy.

Bologna sausage, 15 or 20 lbs.

When fresh fruit is not obtainable, substitute the following: apples, 1 doz. gallon cans, or 15 lbs. of evaporated apples, and 15 lbs. of evaporated peaches or apricots.

When fresh vegetables are not obtainable substitute 9 cans each of tomatoes, peas, corn, and string beans.

Baking powder and baking soda, 1 lb. each; flavouring extracts and spices in small quantities.

Vinegar, 1 pt.

Candles, matches, coal oil, soap and chloride of lime should not be overlooked.

Matches should always be carried in a waterproof box or corked bottle.

Bread will average about eighteen single loaves the first three or four days each, but can be cut down considerably after that time. Take enough for four days, and further supplies should be easily obtainable from local sources.

#### Sample Menus

##### *Four Breakfasts:*

1. Prepared breakfast food and milk, bacon, bread, marmalade, tea.
2. Prepared breakfast food and milk, bread and butter, molasses, coffee.
3. Porridge and milk, sausages, bread and butter, cocoa.
4. Prepared breakfast food and milk, bacon, pancakes and syrup, bread and butter, tea.

##### *Four Dinners:*

1. Roast beef, pork or mutton, vegetables and potatoes, rice and raisin pudding, lime juice.
2. Macaroni with cheese and tomatoes, potatoes, apple pie, clear cold water.
3. Shepherd's pie (hashed beef, if any left over), molasses pudding, lime juice.
4. Soup, (thick vegetable), beans and potatoes, bread pudding, lime juice or water.

##### *Four Teas:*

1. Stewed prunes, bread and butter (plenty), cocoa.
2. Macaroni and cold potatoes left over (fried), bread and jam, tea.
3. Stewed fruit or rhubarb, bread and butter, tea or cocoa.
4. Fruit salad (bananas, canned peaches and oranges), cake, bread and butter, tea or milk.

#### \*First Aid Supplies

The following list of first aid supplies is suggested for the above camp:—

Surgeon's needles, assorted sizes.

(Note: These should be used only when it is impossible to secure the aid of a surgeon and then only in cases of dire necessity.)

- Two pairs of forceps (1 small and 1 large).
- One thermometer.
- One pair of scissors.
- One set of splints (grooved preferred).
- One dozen triangular bandages.
- One dozen roller bandages (assorted).
- One St. John tourniquet.
- Six ounces of gauze.
- Two pounds absorbent cotton in one-quarter pound packages.
- One pound boracic acid (powdered).
- Five yards two-inch adhesive plaster.
- One bottle A.B.S. & C. pills, or other laxative.
- One bottle hydrogen peroxide.
- Two tubes borated vaseline for scalds, sunburn, etc.
- One tube of a good zinc ointment.
- One pound epsom salts.
- One six-ounce bottle castor oil.
- One two-ounce bottle white liniment.
- Four field dressings.

*Local remedies:*

- For toothache—one-half ounce oil of creosote.
- For earache—hot water bottle or rubber ear syringe, two ounces capacity, to be used under competent direction for flushing ear with warm boracic water.
- For stomach ache—bicarbonate of soda, one pound, essence of ginger or essence of peppermint, two ounces.
- For chills—aromatic spirits ammonia.
- For hiccough—aromatic spirits of ammonia or soda and ginger.

Iodine is very useful to apply to recent wounds where there is no possibility of bathing the latter. The iodine is painted on the skin around the wound and a first dressing applied. No iodine should be applied on subsequent dressings.

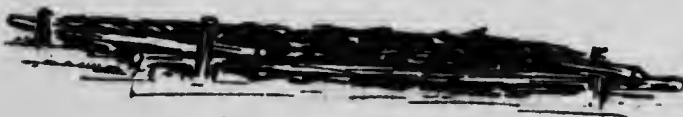
**Beds**

There are many ways of making a comfortable bed in camp or you can take a folding camp cot with you. Do not attempt, however, to lie on the bare ground, as the change is too great from the comfort of one's accustomed bedroom and bedding. When sleeping in camp in cool weather the secret of keeping warm is to have as many blankets underneath you as you have



above you. If the patrol is sleeping around the fire you would all lie with your feet towards the fire like the spokes of a wheel. If your blankets do not keep you sufficiently warm, add straw or ferns or newspapers or anything else you can get under them. It is also a good tip in cold weather if you have not sufficient warm clothing to put a newspaper under your coat or vest, up your back and around your body. It will be as good as an overcoat in giving you extra warmth. A canvas cot is more luxurious than one made of boughs. If it is not convenient to take along a folding cot, one made of canvas may easily be stretched in camp on poles supported on crotched stakes driven into the ground.

A simple and comfortable bed can, however, be made on the ground of dry leaves, grass or straw, or of the branches of evergreens laid overlapping one another like shingles on a roof until a sufficient depth is secured. Be sure to turn the boughs upside down in making the bed as this tends to make the whole more springy. This form of bed is usually kept in place within four poles laid on the ground and overlapping slightly at the



Ground Bed

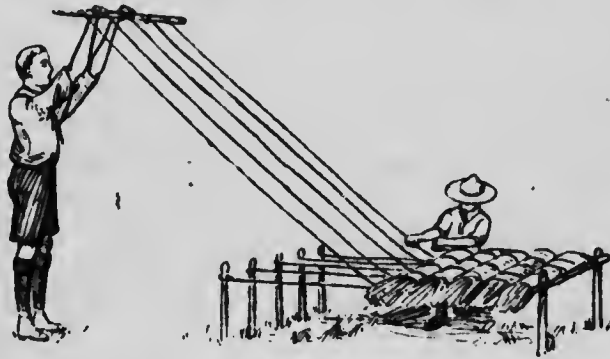
corners. Pegs driven into the ground at the four corners keep the poles in place as shown in the illustration herewith. The whole is then covered with a blanket. In settled parts it is not generally permissible to cut evergreen boughs at will.

Sometimes cots are woven in lattice form of small pliable saplings and laid on a pair of poles supported by crotched stakes driven into the ground. Both twigs and leaves are spread over the lattice mattress to a sufficient depth to make it soft to lie on, the whole then being covered with a blanket or two fastened to the cot at the corners so as to keep the leaves and twigs from falling out.

Still another type of camp mattress, illustrated herewith, is that which is made on a camp loom of woven grass, straw, ferns, etc. With this loom you can also make grass or straw mats with which to form tents, shelters, walls or rugs.

To make a camp loom, plant a row of five stakes, 2 ft. 6 in., firmly in the ground; opposite to them, at a distance of 6 ft. to 7 ft., drive in a row of two and a cross-bar or else a second row of five stakes. Fasten a cord or gardener's twine to

the head of each stake in the first row and stretch it to the cross-bar or corresponding stake in the second row and make it fast there; then carry the continuation of it back over the first row for a distance of about 5 ft., and fasten it to a loose cross-bar or beam at exactly the same distances apart from the next cord as the stakes. This beam is then moved up and down at slow intervals by one Scout, while the others lay bundles of fern or straw, etc., in layers alternately under and over the stretched strings, which are thus bound in by the weaving process.



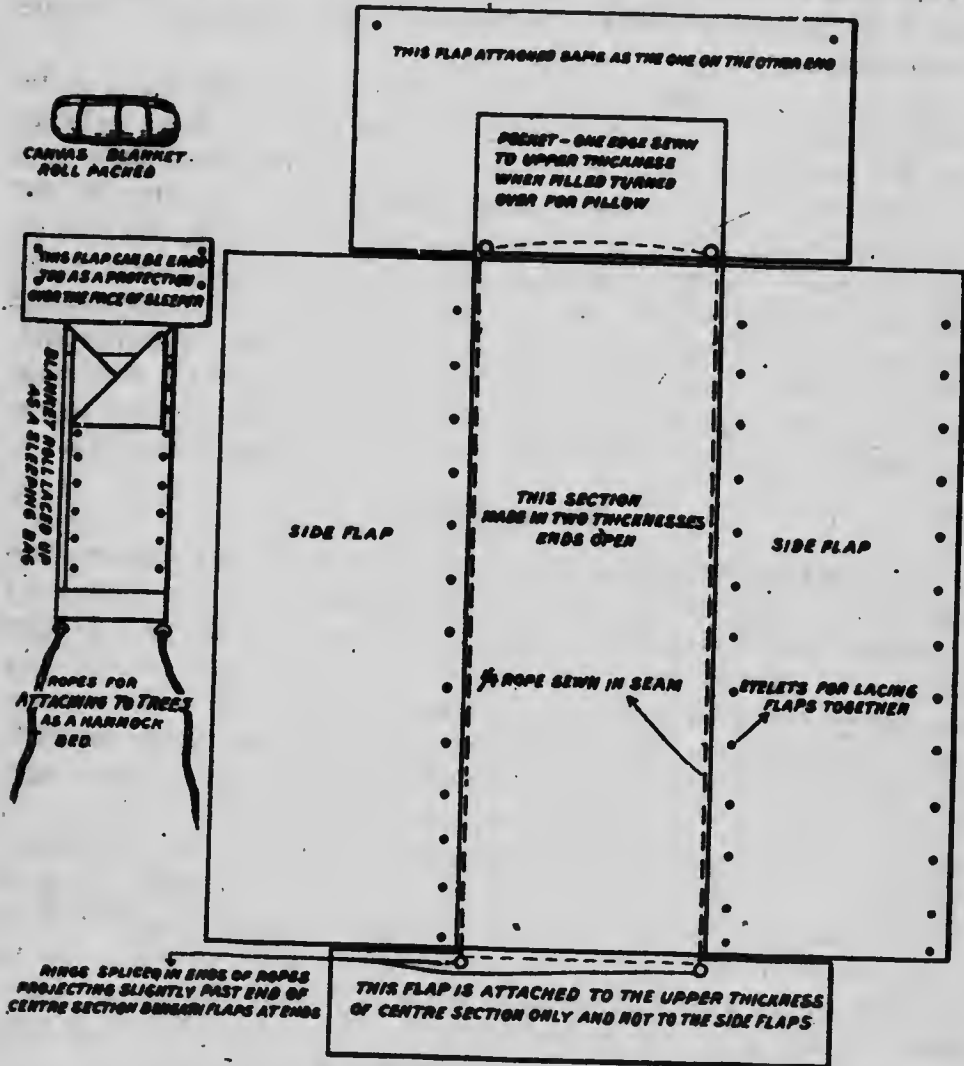
Camp Loom

#### A Canvas Blanket Roll

A canvas blanket roll, in the form shown in the accompanying illustrations, will be found useful and is easily carried. Not only will it hold blankets, but in it one can securely roll everything required on a camping trip excepting eatables. Food is better carried separately in a haversack, rucksack or packsack, particularly if going on a week-end or short term trip. The pocket at the top of the roll will hold all the surplus clothing and equipment and when so filled provides an excellent pillow.

This blanket roll is not very expensive and can be made up by a handy Scout as follows. Four pieces of canvas six feet, six inches long, and about twenty-eight inches wide, are sewn together along the edges so that there will be two thicknesses of canvas in the centre and a single thickness on each side to act as a flap. A piece of  $\frac{1}{4}$ -inch manilla rope with a ring spliced into each end should then be sewn along either edge of the bag formed by the two thicknesses of canvas in the centre of the blanket roll. Next sew a piece of canvas twelve inches by fifty-six inches to one end of the upper thickness in

the centre, so placed that an equal portion will project on either side of the centre section, but without being fastened to the side flaps. At the other end sew a piece twenty-eight inches by fifty-six inches in the same manner. The first piece is folded over to close the foot of the bed, and the latter may



PLAN OF CANVAS BLANKET ROLL

be erected as a shelter over the head in bad weather. Now make a pocket twenty-eight inches by fifteen inches, and attach one edge of the mouth at the same place as the flap at the head of the bed. This pocket forms a pillow when filled with extra clothing, ditty kit, etc., and turned over. At six-inch intervals along either edge of the side flaps, put in small brass eyelets,

or grommets, to be used for lacing up the blanket roll after the blankets are placed inside, and the flaps closed over. Cotton clothes line will serve for lacing.

Light weight canvas may be used, and the bottom thickness of the centre section and the flaps waterproofed (see p. 377.) Blankets are more secure if pinned to the canvas with large horse blanket pins.

Apart from its use to roll things in, the blanket roll can be made to serve as a sleeping bag. When the side flaps overlap the full width as shown in the sketch, it will hold only one person, but it can be made large enough for two persons by drawing the outside edges together only and lacing instead of overlapping. It may be used also as a stretcher-bearer by placing poles at either side of the bag formed by the centre section and lashing pieces at either end to keep them apart. Or it may be slung as a hammock between trees by attaching ropes to the rings provided at either end of the bag and using a couple of sticks twenty-four inches long for spreaders.

#### Pitching Camp

At long last the happy day arrives when the troop moves into camp, travelling either on foot, by train, or other means of transport as circumstances require. In some cases an advance party will already have the camp laid out, or it will remain for the whole troop to pitch the tents and make all the other necessary preparations. The time required to make camp depends on the training and willing co-operation of those taking part.

A small trench about three inches deep should be dug around each tent to prevent it getting flooded if a heavy rain comes on. This trenches should lead the water away downhill. Dig a small hole the size of a tea cup alongside the foot of the pole into which to shift it if rain comes on. This enables you to slacken up all ropes at once to allow for their shrinking when wet. Have a line at hand that you can stretch between two convenient trees for drying and airing your blankets.

In Scouts' camps the tents are not pitched in lines and streets, as in military camps, but are dotted about fifty or a hundred yards apart or more, in a big circle round the Scoutmaster's tent and flag-pole which, with the mess marquee, if there is one, is generally in the centre. This keeps each patrol separate as a unit. Messrs. Richardson and Loomis, in their book on the Scout Movement in the United States, favour either an

arrangement of the tents in quadrangle or horseshoe form. In the former case the central headquarters' tent is pitched at one end and the flag-pole immediately in front of it, the camp fire near the centre and the dining tent at the opposite end. In the horseshoe formation the dining tent is placed in the opening and the headquarters' tent at the centre opposite.

#### Camp Rules

In going into camp it is essential to have a few standing rules published both for the boys' and parents' information, which can be added to from time to time, if necessary. These should be posted in the camp and should be carefully explained to the Patrol Leaders, who should then be held fully responsible for their observance by their respective patrols. The rules should also be communicated to the parents for their information and written acceptance before the boys go to camp.

The rules should call for the boys' individual observance of the Scout Law, and ready obedience to orders. There should be no firearms, profanity, smoking, rough house, or nuisances permitted in camp and disregard of these injunctions should be followed by punishment. Provision should be made against disturbances during rest hours, and against swimming, other than at the appointed hours, and under the appointed conditions.

The camp rules should include directions for the avoidance of fires, also explaining what to do in case of fire, (see p. 191) and orders as to cleanliness, sanitation, immediate notification of cases of illness, daily tent inspections, boundaries of the camp grounds, proper respect for fences, gates and private property generally, and very clear directions on the subject of safe drinking water.

#### Daily Time Table

The programme of activities, as already intimated, should provide for plenty of variety. It has been found best, however, in practice to devote the forenoon programme to instructional work, the afternoon to play and to make the most that can be made of the peculiar charm that hovers about the evening camp fire. There is an excellent motto suggested for a Scout camp in a recent American book: "Work well done is the best of fun." As the author of this motto suggests, there is no better regulation in camp than work.

The following time table is, of course, merely suggestive:—

- 7.00 a.m.—Reveille.
- 7.05 a.m.—“Setting up” exercises and morning dip.
- 7.40 a.m.—Prayers and flag-raising.
- 7.50 a.m.—Breakfast.
- 8.45 a.m.—Court of Honour. All complaints requiring adjustment, and all breaches of discipline should be taken up here.
- 9.00 a.m.—Instructional work, games and practices.
- 12.15 p.m.—Lunch.
- 1.30 to
- 2.30 p.m.—Rest. At this time have boys write letters home, make entries in diary, etc.
- 2.30 p.m.—Games, fishing, rambles, etc.
- 4.00 p.m.—Swimming. After swimming the camp should dress in uniform.
- 5.15 p.m.—Tea.
- 7.00 p.m.—Lower flag, Scout Law and prayers.
- 7.30 p.m.—Camp fire, songs, stories and “stunts.”
- 9.00 p.m.—First post. Prepare for bed.
- 9.15 p.m.—Lights out. Absolute quiet.

A consultation between the Scoutmaster, Assistant Scoutmaster, and Patrol Leaders should be held daily to arrange for the programme to be followed on the ensuing day. It will be found that immediately after tea offers the best opportunity for this purpose.

#### Hoisting the Flag

One of the first duties in camp after the tents have been put up should be that of hoisting the national flag and the troop colours, and steps should be taken to insure proper respect being paid to these emblems throughout the continuance of the camp. The flags must, of course, be lowered at sundown.

It is important to know the correct method of hoisting the flag and how to prepare the flag-pole and halyards. First get enough one-quarter or three-eighths inch manilla rope to measure twice the height of the flag-pole and allow ten or twelve feet over for halyards. One end of the rope is passed through the steel eye, or pulley, at the top of the flag-pole. The eye, or pulley, should be of a proper size to allow the halyard to run freely. The two ends are then spliced together with a long splice, making the halyard into an endless loop

running through the eye or pulley. Take a piece of the same size of rope and splice an eye on one end, leaving enough over to splice the eye into the halyard. Then take another piece of the same size of rope, four to six feet long, and "whip" or put a "monkey knuckle" on one end, splicing the other end into the halyard at a point about ten or twelve feet below the above



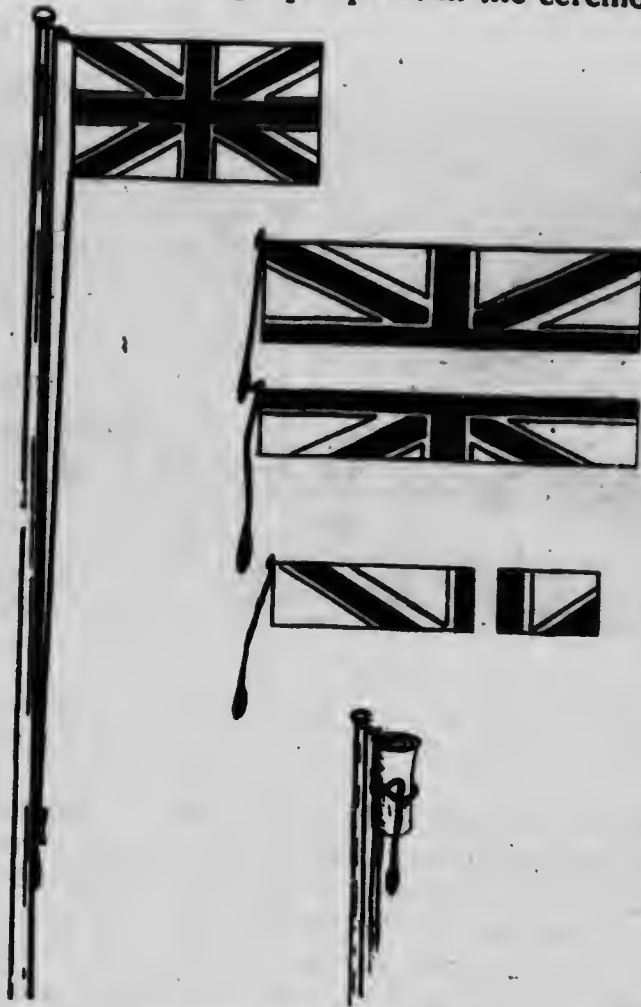
Flag lowering.

mentioned eye. The eye and the loose end of rope should face one another. This will take in a flag three to eight feet in width.

To raise the flag insert the toggle, that is the small wooden piece at the upper left hand corner of the flag, through the eye in the halyard; then fasten or bind the piece of rope which has been spliced into the halyard, to the bolt rope of the flag, that is the piece of rope with an eye fastened to the lower left hand corner of the flag. Be sure to take up enough slack so that when the flag is raised the halyard will be taut between the points at the top and bottom of the flag thus holding it in as closely as possible to the flag pole.

On all occasions the flag should be raised and unfurled sailor fashion. To do so, it is pulled to the top of the pole in a small bundle and the rope is given a quick jerk, causing the flag to break (unfurl) as if by magic. To prepare the flag for this purpose proceed as follows: lay it out flat, fold it twice lengthwise, then twice crosswise and roll tightly. Wind the

lanyard once around the roll and tuck it under itself. Attach the toggle of the flag to the eye of the halyard, and fasten the lanyard of the flag to the piece spliced into the halyard for this purpose. Hoist very carefully so as not to disturb the loop of the lanyard and hold the bundle in position at the top of the flag-pole. At the proper point in the ceremony give the



#### Flag furling and unfurling

down halyard a quick jerk with the free hand, and the flag will break with a very pleasing effect. The accompanying diagrams will assist in making these directions clear.

When the flag is lowered roll it up in the same manner and keep it so ready when not in use.

#### Daily Prayers

Prayers should always have a place in the daily camp routine. It will generally be found that the morning parade for flag-



raising is the most appropriate time also for daily prayers.

Every troop should have its Chaplain and the form of service should be carefully considered by the Chaplain and Scoutmaster together in order that full account may be taken of the religious beliefs of the troop members. An undenominational form of service, suitable for use in camps, is contained in Mr. Kyle's book entitled: "Tramp Camps and Standing Camps."

#### Water Supply

If there is a spring or stream, the best part of it must be kept strictly clean for drinking water. Farther downstream a place may be appointed for bathing, washing clothes, and so on. The greatest care is always taken by Scouts to keep their drinking-water supply clean, as otherwise sickness is liable to occur.

All water has a large number of tiny animals floating about in it, too small to be seen without the help of a microscope. Some of them are disease producing, some are not. You can't tell whether the disease makers are there, so the safest way is to kill them all before you drink any water; and the way to kill them is to boil the water, and let it cool again before drinking. In boiling the water, don't let it merely come to a boil and then take it off, but let it boil fully for a quarter of an hour, as these little beasts, microbes as they are called, are very tough customers, and take a lot of boiling before they get killed.

Dr. Charles E. A. Winslow, the noted biologist, is authority for the following statement: "The source of danger in water is always human or animal pollution. Occasionally we find water which is bad to drink on account of passage through lead pipes, but the danger is never from ordinary decomposing vegetable matter. If you have to choose between a bright clear stream which may be polluted at some point above, and a pond full of dead leaves and peaty matter, but which you can inspect all around and find free from contamination, choose the pond. Even in the woods it is not easy to find surface waters that are surely protected, and streams particularly are dangerous sources of water supply. We have not got rid of the idea that running water purifies itself. It is standing water which purifies itself, if anything does, for in stagnation there is much more chance for the disease germs to die out. Better than either a pond or stream, unless you can carry out a rather

careful exploration of their surroundings, is ground water from a well or spring; though that again is not necessarily safe. If the well is in good, sandy soil, with no cracks or fissures, even water that has been polluted may be well purified and safe to drink. In a clayey or rocky region, on the other hand, contaminating material may travel for a considerable distance under the ground. Even if the well is protected below, a very important point to look after is the pollution from the surface. I believe more cases of typhoid fever from wells are due to surface pollution than to the character of the water itself. This is a danger which can, of course, be done away with by protection of the well from surface drainage, by seeing that the surface wash is not allowed to drain toward it, and that it is protected by a tight covering from the entrance of its own waste water. If good water cannot be secured in any of these ways, it must in some way be purified. Boiling will surely destroy all disease germs."

The Indians have a ready way of filtering their drinking water from lake or stream or pond, by digging a hole a few steps away, about a foot and a half across inside, and six inches or so below the water level, which quickly fills from the nearby supply. By bailing this hole out a few times they ensure themselves all they require of water that has filtered through the soil a sufficient distance to ensure its safety.

#### Latrines

Another very important point for the health of the Scouts in a camp is to dig a trench latrine as a substitute for a closet. Care should be taken that it be well removed from the rest of the camp, preferably hidden by a screen of trees or bushes, and it must not be in the direction from which the prevailing wind comes toward the camp. No other place besides the latrine should be used, and there should be rigid prohibition of the pollution of the surface of the ground, and the latrine itself should be constantly and carefully cared for.

Dig a trench about 18 inches wide, from four to six feet long and of sufficient depth to care for the camp during the entire outing, and to permit of a sprinkling of earth in the trench each day. Posts should be erected at the side at either end of the trench, and a seat pole about five inches in diameter with the bark peeled off, fastened to the upright posts about fifteen inches above the ground. Two other posts may be

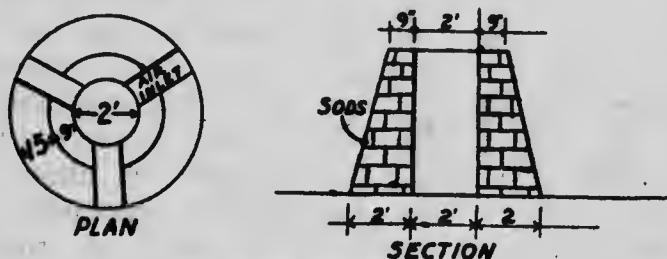
placed at either end about eight inches behind the ones supporting the seat, to which may be fastened another pole two feet above the ground to serve as a back support.

Even in a one-night camp, Scouts should dig a latrine trench, and when away from camp a Scout will always dig a small pit of a few inches, which he will fill in again after use. Neglect of this not only makes a place unhealthy, but also it makes the farmers and landowners disinclined to give the use of their ground for Scouts to camp on or to work over. So don't forget it, Scouts.

#### Disposal of Refuse

All refuse from the camp, including garbage from the kitchen, should be destroyed and fire is the absolute disinfectant. Dig a large sized pit in the side of a hill and line the walls with stones, leaving an air inlet at the bottom. Throw all the refuse in this pit and burn out every two or three days.

Another effective incinerator for disposal of camp refuse is shown in the accompanying drawing:

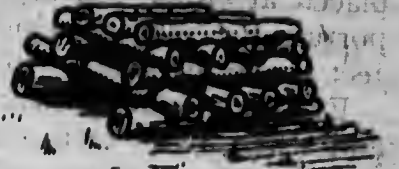


Camp Incinerator.

#### Evening Camp-Fire

The evening camp-fire is the outstanding feature in well nigh every successful Scout camp and offers a unique opportunity at the close of the day's activities for story telling and other fire-side stunts. The glare of the wood fire in the gathering darkness has something in it that quickens the dulllest imagination and the Scoutmaster will find the boys' minds wide open to the influence of stories which suggest the highest ideals of true manhood. A well selected story often has more influence than direct advice. Let the stories and all other features of the informal programme be short and as varied as possible and the camp-fire experience will prove one not soon to be forgotten.

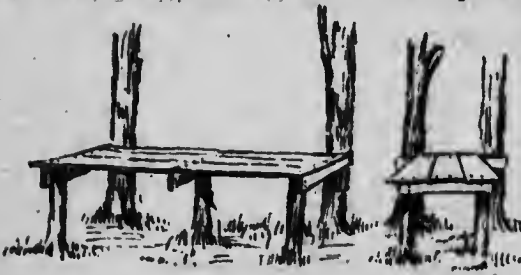
The cooking fire is not ordinarily well adapted to use also for an evening camp-fire. The common way of making a bonfire is to lean a number of sticks together in cone form. This kind of fire starts off with a blaze and roar but is apt to burn out quickly. For an all evening fire the wood is better laid flat, not in a shapeless mass but criss-crossed in such a way as to make a good draft without falling to pieces. (See illustration herewith.)



Evening Camp-fire.

### Handy Camping Wrinkles

Camp tables may either be brought to the camp in knock-down shape, or may be built in camp of lumber which has been provided for the purpose. In a camp of any duration camp tables and benches are essential and their making is no real task for the troop handymen.



Camp Tables.



Camp Tongs.

Shave away the inside edges of the ends so that they have a better grip—and there are your tongs. (See illustration herewith.)

A broom is also useful for keeping the camp clean, and may easily be made with a few sprigs of birch bound tightly round a stake. (See illustration herewith.)

Camp candlesticks may be made



Camp Broom.

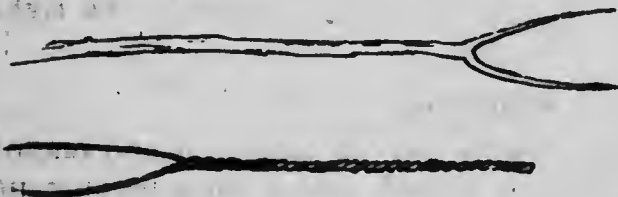


by bending a bit of wire into the form of a small spiral spring, (see illustration) or by using a cleft stick stuck in the wall, or by sticking the candle upright in a lump of clay or in a hole bored in a big potato. A glass candle shade can be made by cutting the bottom off a bottle and sticking it upside down in the ground with a candle stuck in the neck. The bottom of the bottle may be cut off, either by putting about an inch or an inch and a half of water into the bottle, and then standing it in the embers of the fire till it gets hot and cracks at the water-level. Or it can be done by passing a piece of string round the body of the bottle, and drawing it rapidly to and fro till it makes a hot line round the bottle, which then breaks neatly off with a blow, or on being immersed in cold water. (See illustration.)

If an extra lantern is needed, one can be made of an empty tomato can punched full of holes, with a hole big enough to hold a candle in the bottom, or the candle can be fixed in a hole in the side of a tomato can and the latter carried by the disc which has been cut from the top. This latter makes a sort of search light. Torches can be made of resinous knots, which will burn a long time if desired.



Glass Candle Shade.



Camp Forks

Camp forks may be made out of wire sharpened at the points, or of forked branches of green wood for toasting at the camp fire. (See illustration.)

Buttons are always being lost in camp, and it adds greatly to your comfort to know how to make buttons out of leather or of bootlaces or string. Scouts should also be able to carve collar studs out of wood, bone, or horn.

It is something to know how to sit down in a wet camp. You squat instead of sitting. Natives in India squat on their heels, but this is a tiring way if you have not done it as a child; though it comes easy if you put a sloping stone or block of wood under your heels. Boers and other camp men squat on one heel.

### Care of Provisions

The proper care of provisions in camp calls for thought, and if neglected invites trouble. Mice, squirrels, porcupines, and other denizens of the wild are ever ready for a change of fare if chance offers, and this may come when the boys are all off for the day, or it may happen at night if things are left where they can be got at. The ants too are ready to march in armies on unprotected foodstuffs. So see that things are properly covered, and if there is spring water close by your camp kitchen, stand covered milk and butter pails in it to keep them fresh and cool.

Be careful not to store milk and butter too near onions or anything else with a strong odour as they are easily tainted.

If you have ice in camp a simple refrigerator may be made by boring a few holes in the bottom of a box or barrel for drainage and then sinking it in the ground in a shady spot to its top, which may be covered with a blanket. The ice will keep better if one box is fitted inside another in such a way as to have an air space all around. Keep the ice in one end of the box and the food in another. Breadstuffs can best be kept in dry boxes away from dampness. If ice is not available, dig a hole in the ground, and either stone it up or line it with wood or bark and cover over the top with a wet blanket.

It takes a little while, of course, to get some of these conveniences rigged up but it pays to attend to them at the right time, which is at the very outset.

### Swimming

When in camp, bathing will be one of your joys and one of your duties—a joy because it is such fun, a duty because no Scout can consider himself a full-blown Scout until he is able to swim and to save in the water. Some camps have two swimming places; one where the deep water is close to the shore and where the expert swimmers can dive freely; the other a long, sloping beach, which makes it possible for boys who cannot swim to bathe and play about. Generally an early morning dip is allowed just before breakfast. This takes but a few minutes, for a single dip is usually enough for each boy. A regular swimming hour is also appointed later in the day. When the whistle sounds for "all out" every Scout must instantly obey the signal.

A spring board is greatly enjoyed by the more expert swim-

mers. It may be fastened on the bank or attached to a float or raft. An excellent support for a swimming raft is a strong barrel lashed under each corner. A diving tower is sometimes constructed and the spring board attached to it. The spring board should not be more than five or six feet above the water, but the tower may be continued up to a height of fifteen or twenty feet. Special attention should be paid to teaching Scouts how to swim while in camp.

It is sometimes necessary for Scouts to provide a "swimming hole" where a small stream is handy, but not of sufficient depth. For this purpose a convenient spot should be selected and cleared of all rocks or other rubbish, and then a dam built in order that the required depth of water may be secured.

In no part of camp life does the element of risk figure so materially as in connection with the swimming, and the greatest care must be exercised here. Every well regulated camp has a definite understanding regarding this. No Scout is allowed to enter the water for swimming except at stated times and in the presence of and with the consent of one or more adult leaders.

One risk connected with swimming is that of taking a cramp. This comes very often from staying in the water too long. Twenty minutes is ample time as a rule for a boy to be in the water. Ten minutes is safer.

If you bathe within an hour and a half after taking a meal, that is before your food is digested, you are liable to get cramp. In its excellent handbook of instruction on swimming and life saving the Royal Life Saving Society gives the following directions to be observed in cases of cramp: "If taken with cramp, keep calm, turn on the back, rub and stretch the affected limb. If seized in the leg, turn up the toes, straighten the leg, and stretch the muscles, apply friction and kick the surface of the water until they relax."

The Indians had a plan of their own for protecting themselves against cramps. Before entering the water the redman rubbed the pit of his stomach vigorously with the dry palm of his hand for the space of a minute or so, then dashed cold water on his stomach, continuing meanwhile, the rubbing of his stomach for another minute before taking his plunge.

There should always be a bathing picket posted, while bathing is going on, of at least two good swimmers, who will not

go in themselves but will be ready, undressed, except for overcoats, and prepared to jump in at any moment and help a swimmer if he is in difficulties. Many lives are lost every summer through neglect of proper bathing precautions.

#### Cleanliness

One thing to remember in camp is that if you get sick you are no use as a Scout, and are only a burden to others. Generally if you get ill it is through your own fault. Either you don't change into dry clothes when you get wet, or you eat what disagrees with you, or you drink bad water. Never forget also that the state of an old camp ground, after the camp has finished, tells exactly whether the patrol or troop which has used it was a smart one or not. No Scouts who are any good ever leave a camp ground dirty; they sweep up and bury or burn every scrap of rubbish. This is done on service to prevent the enemy reading any information from what is left. Thus, supposing you left some bits of old bandages, a few tunic buttons, old food scraps, etc., an enemy could tell which regiments were in the force, that there were wounded men, and that the men were reduced to certain shifts for food.

In peace camps, it is quite as important to get into the habit of cleaning up your camp ground before leaving it, as then farmers don't have the trouble of having to clean their ground after you leave, and are, therefore, all the more willing to let you use it again.

A Scout is tidy also in his tent, bunk or room, because he may be suddenly called upon to go off on an alarm, or some unexpected mission, and if he does not know exactly where to lay his hand on his things, he will be a long time in turning out, especially if called up in the middle of the night. So on going to bed, even when at home, practise the habit of folding up your clothes and putting them where you can at once find them in the dark, and get into them quickly.

#### Drying Clothes

You will often get wet through on service, and you will see a tenderfoot remaining in wet clothes until they get dry again; no old scout would do so, as that is the way to catch fever and get ill. When you are wet, take the first opportunity of getting your wet clothes off and drying them, even though



you may not have other clothes to put on. The way to dry clothes over a fire is to make a fire of hot ashes, and then build a small beehive shaped cage of sticks over the fire, and hang your clothes all over this cage until they dry. Also, in hot weather it is dangerous to sit in your clothes when they have got wet from perspiration. It is a good plan to carry a spare shirt, hanging down your back when you are on the hike, and change to it as soon as you halt.

### Payment

Another point to remember is that when you use a farmer's ground you ought to repay him for the use for it. If you do not do this with money you can do it in other ways. You can, and ought to do jobs that are useful for him. You can mend fences or gates or herd his cows, cut thistles or dig up weeds, and so on. You should always be doing "good turns" both to the farmer and to the people living near your camp, so that they will be glad to have you there.

### Trespassing

Especially in a settled district, be careful to get leave from the owners of land in the neighbourhood before you go on it. You have no right to go anywhere off the roads without leave, but most owners will give you this if you go and tell them who you are and what you want to do.

When going over their land remember above all things:

1. To shut all gates after you.
2. To disturb animals as little as you possibly can.
3. To do no damage to fences, crops, or trees.

If dead wood is not available it may be necessary to buy wood for fuel.

**SHIFTING CAMPS AND HIKES**

Apart from the annual troop camp of two weeks' duration or more, splendid practice can be had in Scoutcraft through overnight camps and hikes. These may either take the form of week-end or more extended outings, and may comprise the entire troop or one or more patrols.

Constant change of scene naturally adds to the interest of these expeditions. Reasonable good weather is, however, essential to the fullest enjoyment. Many of the outings will be no more than Saturday afternoon excursions into the surrounding country for nature study or other Scouting practice. The travelling may be done on foot or on bicycle, by automobile or other vehicle, depending on circumstances. In Western Canada, where horses are plentiful, mounted patrols should do well in many parts. Still another enjoyable form of outing is that which may be taken by motor boat or canoe, camping from point to point en route, or in winter on snowshoes or skis.

Especially where the travelling is done on foot, it is wiser to avoid long distances, to take it easy, and to carry no more with you than is absolutely essential. The object of the tramp camp, as Mr. Kyle has observed in his book on this subject, is not to cover as much ground as possible, but to afford the best possible opportunity of Scout training, and, incidentally, to pump health and enjoyment into the party. Three miles an hour should be the speed limit on foot with the smaller boys in front to set the pace rather than the bigger ones.

Even the Saturday afternoon hike should have some definite object in view. The party should keep together and try to see how many interesting things it can find either through the woods or along the road.

Occasionally the party may separate—one-half setting out half an hour ahead of the other and leaving signs for the others to follow. The destination of the first party should, however, in this case be given to the others in a sealed envelope which is only to be opened if they should be unable to track them down.

It is taking undue risk to attempt to make your way without a light through unfamiliar woods in the darkness, unless necessity absolutely compels.

Each boy should write a diary account from day to day of the day's movements and happenings, the features of the country traversed and the animals, birds, insects, trees and plants which are observed. A good time to write up the diary is during the noon rest. It is a good plan to encourage all members of the party also to draw route maps for practice, even when the travelling is through familiar scenes. Generally speaking, there is more fun hiking in small parties than in larger numbers. The patrol unit is a good one for this purpose.

Leadership is an important consideration—either in the camp or on the hike. No group of boys should go camping by themselves. Even in the case of a week-end outing there should be at least one of the Assistant Scoutmasters along if the Scoutmaster is not himself in charge. If the trip is through an unfamiliar district, it is well to be provided with a good map. The best large scale maps in Canada are those which have been compiled by the Militia authorities, but these have only been issued for certain parts of the country, and are not at present generally available. Some excellent maps have also been issued by the Geological Survey of Canada, and by the Department of the Interior. Automobiling calls for good road maps and many of them are of value for Scouting purposes, although the Scout is naturally more interested in unfrequented paths than he is in the main highways of traffic.

The problem of what to take on a camping trip in which you are to be moving about should be decided upon the basis of what is absolutely necessary to health and comfort. Sometimes baggage can be sent on ahead to your intended destination in which case you may treat yourself to a few further comforts in the way of more complete changes of clothing. The pioneers who blazed their way through the deep forests of Eastern Canada travelled light, and there is great joy in getting close to nature when you have gained sufficient experience to know what must needs be taken along, and what can really be done without.

As Nessmuck, the American authority, says: "We do not go to the woods to rough it; we go to smooth it—we get it rough enough in town. But let us live a simple, natural life in the woods, and leave all frills behind."

If there are good roads in the neighbourhood, a trek cart is

of service for the carriage of tents, cots, bedding, cooking equipment, food supplies, etc. This can be made by the boys themselves from plans which are obtainable for the purpose from Canadian Headquarters; or still other means of transportation may be pressed into service such as pack horses, or a friendly motor or wagon.



Trek Cart.

Suitable clothing and footwear are indispensable to comfort in the open (see p. 338.) Take along a shirt to change to when the one you are wearing becomes wet with perspiration. If you have to carry a pack, it is better to provide yourself with one of suitable design, after taking expert advice. Make up your mind where you are going to camp for the night in plenty of time to get up your tent or shelter and have a good meal. It is risky to sleep in damp blankets. See to it in time that your night covering is dry. Hot stones from the camp fire make a good substitute for a hot water bottle at night, if one is needed.

Dry wood can often be got for the camp fire by chopping into a stump or log. Standing dead soft wood is better still, especially a leaning tree, from the under side of which you can usually get dry kindling. It is, however, a lesson in resourcefulness to make a fire out-of-doors when everything around you is wet.

If the black flies or mosquitoes are very bad it is better to provide yourself with some of the drugstore "dopes" against these pests, or you may even have to screen your head and neck with a light veil fitted tight around the diameter of your Scout hat brim.

**Temporary Shelters**

There are many things to consider in the choice of a light tent for overnight camping, which you may have to carry around with you through the day. Obviously, what is suitable for the standing camp of several weeks' duration is far from ideal for use on the shifting camp or hike. The Dominion of Canada too is a country of such extent that what will do well for one part may not suit in another.

In wooded districts Scouts may build serviceable overnight or week-end shelters for themselves of boughs, either in the form of huts or lean-tos.

One form of lean-to may be constructed as follows: Select a couple of trees about eight or ten feet apart with branches six or eight feet above the ground. Place a supporting pole in the crotches or lash it to the trees. Then build a framework with one end resting on the supporting pole and the other end on the ground, as shown in the accompanying illustration

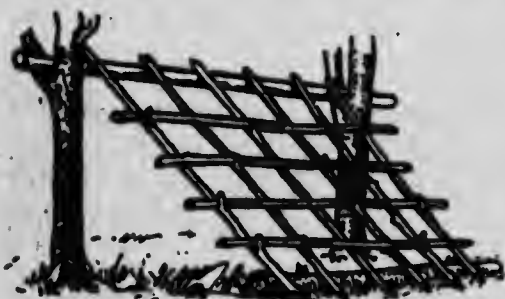


Fig. 1. Temporary Shelters.

Fig. 2.

(Fig. 1). Beginning at the bottom, cover the framework with boughs two to three feet long, attached as shown in Fig. 2, and so arranged that they overlap well in order to shed the dew and rain. Grass or rushes may be used instead of boughs. They should be tied in bundles, and lashed to the upper side of the framework. A clay roof may be substituted by making the framework very strong by placing the poles very close to each other, cover them with grass, and then cover with about four inches of clay, pressed down tightly and smoothed. The ends may be constructed in the same manner as the roof. If the location is to be used for any length of time, two lean-tos may be built so as to face each other a short distance apart. A small fire can then be built between, giving warmth and light, thus adding to the comfort of the camp.

Another style of shelter of somewhat the same construction is shown in Fig. 3.

Still another form of shelter may be constructed in the form of an Indian tepee consisting of a number of poles placed in a circle, lashed together at the top, and the whole thatched on the outside with brush or grass.



Fig. 3.



Fig. 4.

#### Temporary Shelters.

Sometimes it may be more convenient to construct a shelter in lean-to form against a large rock or earthen bank, roofed over with brush, grass, clay or sod. Or, a one night shelter may be provided by felling a fir tree and trimming the branches in the manner shown in the accompanying illustration (Fig 4.)

The floor of many of these temporary shelters should be covered with leaves, small brush or bark so that the damp fresh earth will not have an unhealthy effect on the occupants.

#### Choice of Tents

With all that has been said regarding serviceable temporary shelters, most travellers prefer tents. A number of different types of light tents have been designed for the special purpose of shifting camps, ranging from simple tarpaulin or canvas squares to quite elaborate forms, and in materials from tarpaulins to feather weight silks weighing only twelve ounces for a tent 6x5x4 ft. 6 in. high. Most manufacturers and dealers in sporting goods specialize, however, in certain lines from among which Scouts will usually find it easy to satisfy their own requirements whether for tents that are to be packed on the owner's backs, on bicycles, in canoes, or otherwise. Or they can be made up by the boys themselves from designs

procurable in various books which are referred to on p. 624.

Tents for shifting camps should be light in weight, no larger in size that is absolutely necessary, compact to carry, easily set up and capable of withstanding windstorms and heavy rains. A pretty big order this, you may say. Well, yes, it is; that's why the perfect all-round tent has not yet been invented. Tents made of ten-ounce army duck, which are generally favoured for fixed camps, are too heavy to carry on one's back, especially when they are wet. Lighter fabrics are preferred of closer weave such as Egyptian cotton, or as it is sometimes termed "balloon silk," which in reality has no silk in it, but is made of the long strong fiber of Egyptian cotton. Tents of this material, covering a ground area of  $7\frac{1}{2} \times 6$  feet, weigh only six to eight pounds and cost from \$20.00 to \$30.00 each, according to quality.

#### Methods of Waterproofing

Other light cotton fabrics of close weaves, cheaper in price, are also used for the same purpose and these may easily be waterproofed if the owner so desires, by soaking them in liquid paraffine or other water-shedding substance. Pare a one-pound cake of paraffine into a gallon of turpentine in a pail, then set the latter in a larger vessel of hot water, renewing the supply of hot water until the mixture is well heated. Put your tent into a tub and pour in the hot turpentine-paraffine compound, working the tent over quickly with your hands to make sure that every bit of it is well saturated before the mixture cools and thickens. Hang it up to dry without wringing out.

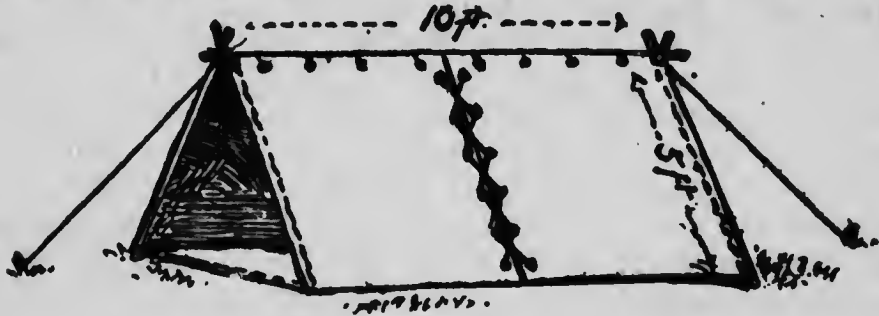
The alum-sugar of lead treatment calls for the dissolving of four and one-half ounces of powdered alum in a gallon of hot rain water and four and one-half ounces of sugar of lead in another gallon of water. The whole is then mixed and poured over the tent in a tub where it is left to soak for a couple of hours or more. The tent is afterwards rinsed in clean water, wrung out and hung up to dry. Clothing may be waterproofed in the same manner.

Tents that are used in mosquito or fly time need to be provided with a detachable curtain of cheesecloth to exclude these torments.

The smaller the tent the greater the need of ventilation. All tents that are to be closed up at night or in the rain should be provided with screened windows and a sod cloth.

## Favorite Styles of Tents

One of the simplest forms of tents for patrol overnight or week-end camps, often called the dog tent, may be made up of six five-foot squares of tarpaulin or canvas and as many



Dog Tent.

staves. Four of the squares are laced together to form the tent and the other two to form the ground sheet as shown in the accompanying illustration. This form of shelter is open at both ends.

Better still, however, is the tarpaulin sheet which is described in "The Boy Scouts' Hike Book," by Edward Cave, and which

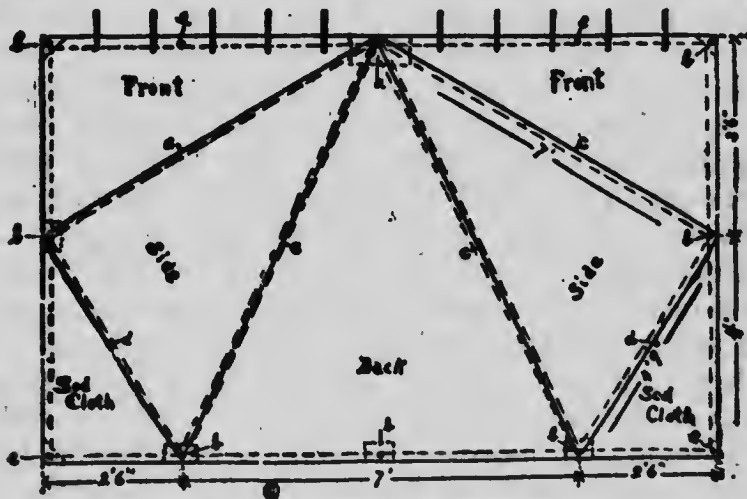


Fig. 1. — Plan of the Tarpaulin Tent

By courtesy of Edward Cave and Messrs. Doubleday, Page & Co.

may either be obtained of outfitters or made up at home from the plans in Mr. Cave's book. These tarps. range from  $7\frac{1}{2} \times 12$  to  $10 \times 13$  feet in size. The former can be made up of four yards of heavy unbleached cotton sheeting of ninety-inch width, or twelve yards of thirty-inch Egyptian cotton, and in



waterproofed form weighs from  $3\frac{1}{2}$  to  $6\frac{3}{4}$  pounds. Its uses are manifold. It will do for a tarpaulin, a ground sheet, a pack cloth, dining fly, or emergency sail, or it may be used for tent

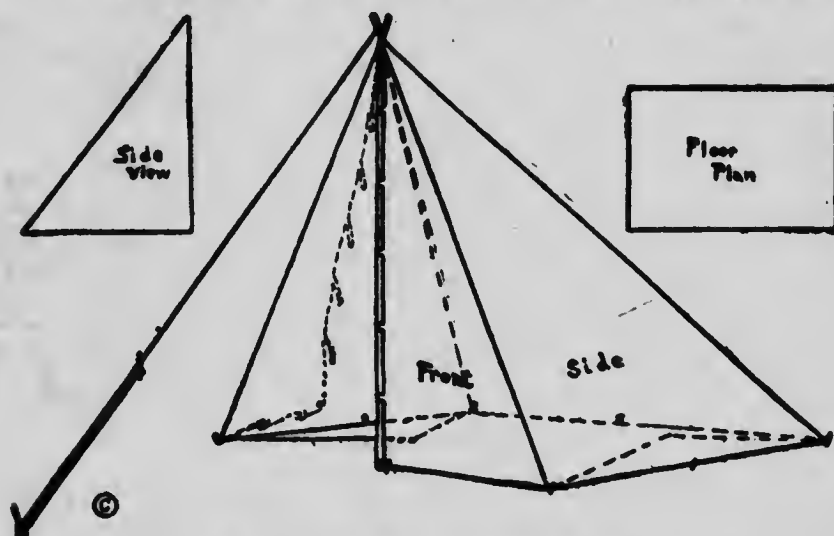


Fig. 2. — Plan of Tarpaulin Tent Erected

—By courtesy of Edward Cave and Messrs. Doubleday, Page & Co.

purposes either as a lean-to, a wedge tent open at both ends, or a semi-pyramidal enclosed tent.

Wall tents are, however, preferred to all others by veteran campers on account of their having more head room for a given amount of material. These should, of course, be much smaller than those referred to in the earlier part of the present chapter as suitable for fixed camps. They should be of light weight material, yet waterproof. Some call for poles, others can be strung up by ropes to trees. Remember, though, that dead trees and dead branches are dangerous things to camp under, in case of the wind bringing them down. There is also the risk of lightning to consider.

The Indians believe that beech trees are proof against lightning and it is claimed that experiments have proven that woods like the beech and birch, "rich in fat" oppose much more resistance to electric currents than woods "poor in fat" such as maple, oak, elm, ash, poplar and willow.

### Walking

A good many fellows have never mastered the art of walking and are satisfied to "get there" anyhow. Of course, there

is a right posture in walking and there are certain principles that apply in the movement of the feet. Some of the Boy Scouts of America have tramped half way across the continent without mishap, and enjoyed it, but there is danger that the rapid development of motor traffic may deprive us of one of nature's best exercises, walking, unless present tendencies in that direction are arrested.

In walking try to hold the body erect and the chest thrown forward, the arms swinging naturally by the sides. Keep the feet pointed straight ahead, not turned out sideways, and come down flat, with the heel first. Many experienced pedestrians allow a slight bend in the knee as the foot is set down.



#### Pack Sacks

Scouts who intend to do any hiking need to give special attention to the selection of a pack-sack of suitable size and design. In practice, these range from simple fastenings for the folded blanket kit to more elaborate designs, many of which are intended for the carriage of heavier loads than the average boy is capable of handling.

One of the best pack-sack designs is that known as the Poirier pack, shown in the illustration herewith, in the form of a flat bag provided with shoulder straps leading from a common centre near the top of the front of the sack and attached to the two lower corners, and tump line to forehead. The straps are adjusted by buckles to fit the wearer. The flaps of the bag are provided with three straps to hold it down and which also enable the wearer to make the sack large or small, according to the contents so that a snug pack is thereby assured.

For a lighter load the Swiss ruck-sack design, illustrated herewith, is favoured in many cases.

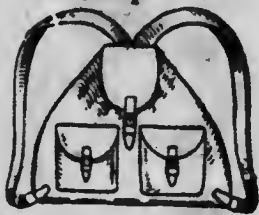
The Indian method of heavy packing is by using a tump line, in the form shown in the accompanying illustration, by means of which the weight is supported by a strap across the wearer's head, towards the forehead. Many experienced woodsmen still use the tump line but boys who try it out will be well advised in starting with a light load until with practice this can be increased to one of greater proportions.

The standard pack carried by the packers in the employ of the Hudson's Bay Company is one of ninety pounds weight.

Individual packers, however, carry much heavier loads, even up to three hundred pounds.



Pack Sack, showing use of tump line.



Ruck Sack.

### Boating and Canoe Trips

Motor boating and canoeing offer prime sport and Scouts with a taste for this sort of thing can travel considerable distances in this way, and learn many useful lessons besides. In all of the nine Canadian provinces there are regions of special interest which can be travelled by boat or canoe, including some of the finest fishing, sightseeing and stalking grounds in the world.

Space implies limitations on every chapter of this book, but what is here said on the subject of camps is suggestive of the wide scope and range of variety which Scoutmasters have at their disposal in this feature of Scouting.

### Bicycle Outings

Many Canadian Scouts own and ride bicycles and some have made enjoyable bicycle trips of several days' duration to points of interest, far beyond the bounds of their own localities. The party of Ottawa Scouts shown in the accompanying illustration bicycled from the Canadian capital to New York and return bearing a message from the Canadian Scout headquarters to the headquarters of the Boy Scouts of America, and were the recipients of many kindnesses in the metropolis from brother Scouts of the Boy Scouts of America. A few suggestions in connection with trips where bicycles are used as a means of transport may perhaps be of assistance. The first necessity, of course, is to have the bicycle in good condition, whether the distance to be covered is long or short. The saddle too should be comfortable. See that there are no broken spokes, that the nuts are not too tight and that none of the ball-bearings are broken. Have all the bearings well packed with vaseline, being sure first that they are free from sand or grit. The condition of the chain is another important consideration. Before starting it

should be washed well in coal oil or gasoline. Do not use oil or grease as a lubricant, but use a good quality of bicycle chain graphite. It is better to take along two or three extra links in case of a break. The tires should be examined for weak spots or faulty patches, and if the trip planned is a very long one an extra inner tube should be carried. Do not fail to examine the



Canadian Scout visitors to New York.

outer coverings, and if any cuts, tears or weak spots are discovered they should be repaired. If the covering is in very bad shape it would pay to get a new one before setting out on a trip of any length. See that all nuts are screwed up tight, that no bolts are missing and that the brake works properly.

A great deal of time is lost and pleasure marred by a bicycle that is always getting out of order. Sometimes a whole trip is spoiled by one boy in a party not having given proper attention to the care and condition of his machine.

Each one in a party should carry his own repair outfit con-

taining rubber for patching, cement, sandpaper, adhesive tape, wrench, pliers, wire, strong cord, tire remover, an oil can filled with a good quality of lubricating oil, a small screw-driver, a small pump in good working condition, and a piece of old outer cover to strengthen or repair weak spots.

If the trip covers two or more days, the party should be divided into groups of three or four, for cooking and sleeping purposes, each in charge of a leader, with the whole party in charge of a senior leader.

An equipment for over-night camps will be necessary. A good style of tent for this kind of outing is a small wall tent about six feet, six inches wide, seven feet long and four feet, six inches high, with a twelve-inch wall. The ends should be constructed with a sleeve at either end about 5 inches in diameter to admit a fair sized pole or rail.

This kind of tent can often be pitched along the side of the road, using a top rail of the fence for a ridge, resting one end on the fence, and lashing the other end to an upright piece, and of course, putting the rail back in place when finished in the morning. Both ends should open all way up to the sleeve, and there should be a canvas floor sewn in. Eight-ounce duck waterproofed is one of the best materials to use. This tent will shelter three or four boys for sleeping purposes, and can be made quite easily by Scouts themselves.

Each group of three or four should carry, in addition to the tent described above, the following camp equipment divided equally among the boys: two sharp Scout axes, and cooking utensils as follows, two four-quart kettles, two two-quart kettles, and two three-pint kettles, all of aluminum or enamelled ware and provided with covers. Also take along two large tablespoons, a frying-pan about 8-in. diameter, and a turn-over.

Each individual equipment should consist of the Scout uniform to be worn, extra shorts, a sleeveless jersey, strong shoes, sweater, a suit of combination underwear for sleeping, light in summer and heavier for spring or fall months; a towel, soap, a toothbrush, a comb, needles and thread, plate (enamelled), a knife, a fork, a spoon, a cup (enamelled), a bowl (enamelled), two blankets and a rubber sheet or oil-cloth.

Eatables will, of necessity, be purchased along the way, as it would be unwise to attempt to carry much in this line. The fare in this case will, of course, depend on what can be secured at any stores and at the farmhouses along the route. No

difficulty will, however, be found in obtaining the following: rolled oats, bacon, ham, sugar, bread, biscuits, canned salmon, tomatoes, peas and corn, beans, cheese, coffee, cocoa, tea, flour, syrup, jam and marmalade. Eggs, butter, milk and potatoes can in most cases be secured from the farmers near where the different over-night camps are located or where stoppages are made for meals during the day. Canned goods should be used as little as possible, and all cooking should be simple and plain. The senior leader of the party should do all the purchasing and serve to each group the proper rations. The following are sample menus which may be varied at the discretion of those in charge:—

*Breakfast:*

Porridge, bacon, toast, butter, coffee, jam or marmalade.

*Dinner:*

Salmon, bread, butter, tea, syrup, cheese.

*Tea:*

Ham, eggs, potatoes, bread, butter, biscuits, cocoa.

Put all small articles in a canvas bag and roll the latter up inside the blankets with the rubber sheet on the outside. Make the package oblong rather than square or round, and fasten it securely by means of straps or rope to the carrier or to the handle bars. It is more convenient if the bicycle is equipped with front or rear carrier, or both. Left over food and eating utensils may be carried in a haversack. Cooking utensils should be securely fastened to the outside of the bundle. The tent may be wrapped around the package or fastened in a separate parcel at the rear.

The leader of the party should have some first aid equipment in the nature of roll and triangular bandages, absorbent cotton, adhesive plaster, peroxide, and remedies for burns, diarrhoea, and constipation.

It is better to select a part of the country where the roads are known to be good, if possible, and to use a good road guide. The Automobile Blue Book is the best but is rather expensive. Other very good road maps may, however, be purchased quite cheaply for many districts. Farmers and others along the way, know conditions better than anyone else, and are always ready to give information, when approached in a courteous manner.

Scouts who try bicycle hiking will find it interesting, helpful and instructive, and a means of putting many features of the Scout training to a practical test.

### Outings for Nut Picking

For a Saturday afternoon outing, when the ripening nuts are ready to drop from the trees, let the Scoutmaster lead his boys to the nearest woods in which butternuts, beechnuts, walnuts, chestnuts, hickorynuts or hazelnuts are to be found. Not all of these, of course, are found throughout Canada, but edible nuts are especially abundant in all of the Eastern provinces and in British Columbia. Haws are ripe too at this time of the year, and are worth gathering in many parts.

The Iroquois Indians have a saying that the walnuts used to have only a thin skin over them and so that the kernels were especially large, but that the devil threw ashes over them and made the shells hard and thick and the kernels small. However, this may be, Canadian boys will find them good picking in the southern parts of Ontario where they still are found.

### A Trip to the Sugar Bush

In early spring, when the sap begins to run, there is nothing the boys will enjoy more than a Saturday afternoon trip to any nearby sugar bush, and if time limits, a chance of taking part in the syrup and sugar making. There is usually snow in the woods at this time, and maple sugar cooled on the snow in the French-Canadian style has a richness of flavour all its own. For this purpose the syrup should not be boiled to the sugaring-off stage, but only to a point which will allow it to thicken when it cools on the snow.

The necessary appliances for tapping the trees and for boiling the sap are ordinarily available in most sugar bushes. If they are not, permission would, of course, have to be obtained from the owner of the bush to tap a few of his trees, and the pans or kettles would need to be brought along for boiling the sap.

Maple syrup is usually made from the sap of the hard maple, but it is worth while knowing that the soft maple and the birch may also be treated in the same way with excellent results.

Maple sugar used to be known in many parts of Canada as Indian sugar, and there is little doubt but that the aborigines,

in spite of their limited range of cooking utensils, succeeded in boiling down the maple sap to the form of sugar. The technic of maple sugar-making also reveals its Indian origin not only in the utensils employed but also in such devices as straining through hemlock boughs, cooling on the snow, etc.



The earliest extended account of maple sugar is "An Account of a Sort of Sugar made of the Juice of the Maple in Canada," published by the Royal Society, in 1684-5, wherein it is stated that "the savages have practised this art longer than any now living among them can remember."



## WINTER CAMPS AND HIKES

Winter outings in Canada have a unique charm, for whilst the Canadian climate is like that of all other countries throughout the summer months, it is winter which invests "Our Lady of the Snows" with a glorious mantle of spotless white, a crispness of air and brightness all her own. The woods, indeed, are never more interesting than in winter, for the snow is a unique tell tale of all that goes on among the wild life throughout the winter months. Even a mouse cannot drop in on its nearest neighbour for an afternoon's chat without leaving its record behind it.

There are great possibilities in winter Scouting in Canada on skis and snowshoes, and it is quite certain that the future will see important developments along these lines, including not only afternoon hikes, but over-night and week-end camps and Christmas holiday outings of longer duration. It is in mid-winter, when river and marsh, forest and field, alike are carpeted with a deep mantle of snow, that an excursion into the wilds will often do one the most good.

Of course, the Canadian boy does not need to be told that winter conditions call for warm clothing. But even warm clothing, like all other good things, can be overdone, for exercise will in itself go a long way towards keeping up bodily warmth. It is not easy, however, to overdo the equipment of warm wraps for use at night.

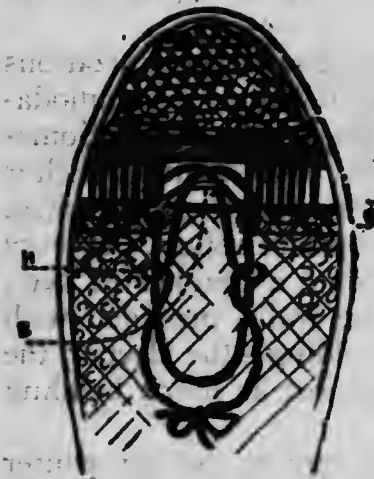
What about Boy Scout troops and district organizations building or otherwise obtaining the use of simple accommodation, not too far from town or city, for winter use? Something in the log cabin style, or other form of permanent shelter is, of course, ideal in which snowshoes or skiers can warm up and regale themselves with an appropriate repast. A very small shanty can be made to accommodate a number of boys by the construction of bunks around the walls, provided with plenty of straw or brush and other bedding—the deeper the better. In a winter camp one needs almost as much bedding underneath as on top.

Woodsmen, many of them, have to tent it out all winter when they are moving about, and manage to survive even the rigours of twenty and thirty below zero weather and colder. No woodsmen, though, will sleep out in a tent in mid-winter if he can find more substantial shelter. Of course there are tents which can be heated, but Scouts will not make any mistake by providing fully against the possible discomforts of any nights which they spend in a winter camp.

Heavy overcoats are out of place on skis and snowshoes. A mackinaw is an ideal outside garment on really cold days. It will turn wind, snow and rain, and yet does not impede one in walking. Take along plenty of socks. You may need two pairs to sleep in, besides leaving on your trousers and sweater. A knitted cap in the helmet form, which has been in general use in the trenches throughout the war period, is one of the best forms of headgear for cold weather use.

### Snowshoes

Snowshoes? Well, the choice mainly depends on the use which is to be made of them. Snowshoes differ considerably in style and size. Size 12-in. x 40-in. is, however, about right for a boy. There is nothing difficult about learning to move about on snowshoes. The best fastenings are not the buckling-up kind which are apt to cramp and freeze the feet, but the rig used by Indians, the original snowshoers, shown in the illustration herewith. For your bindings get two yards of  $\frac{3}{4}$ -inch lamp wick, and for bridles half a yard of one-inch calf-skin. To rig a snowshoe, first lace the bridle into the webbing on each side of the toe hole (see diagram), leaving it just



How to Make the Algonquin Snowshoe Binding. P, Post-Hole; B, Bridle; H, half hitch.

—By courtesy of Edward Cave and Messrs. Doubleday, Page & Co. VII

slack enough to allow you to insert your three fingers on edge between it and the webbing, where your toes are to go. Take a yard of the lamp wicking and, with an end in each hand, pass them downward through the post holes, leaving the loop shown in the diagram. Bring the ends up as shown, and pass the left under the bridle and over to the right side; pass the right one under the left in front of the bridle, draw it up on top of the bridle, and pass on to the left side (see diagram). Now place the foot on the snowshoe, the toes under the bridle just far enough so that the bridle lies across the root of the great toe, and draw the ends of the binding up so

the loop rests comfortably on the heel. You, of course, now hold in your right hand the end that was passed through the left post-hole, and vice versa. Make a half hitch from the outside around the loop which rests on the heel, at each side of the ball of the foot; draw up and tie over the heel. Do not draw the binding so tight as to force the toe too far under the bridle, or the heel of the shoe will kick up at every step. By stepping on the shoe with the other foot, and twisting around sideways the foot you wish to free, you should be just able to work the toe out from under the bridle. This is how you will take your snowshoes off without untying the binding; to put them on you will simply reverse the operation. Work the knot around so it lies at the side of the heel, in order to keep it from chafing. Remember you have to step on the snowshoe with one foot to hold it while you twist the other loose.

Moccasins are the proper footwear for snowshoeing—smoke-tanned ones of caribou or moosehide, if you can get them, or smoke-tanned elkhide or buckskin which are the next best. Smoke-tanned moccasins dry out comparatively soft after being wet. Another type of moccasin known as "shoe packs," "beefskins" or "larrigans" originated among the French-Canadian woodsmen. These are made of oil-tanned cowhide leather, and are manufactured similar in style to moccasins, in four heights, low, high, three-quarter and knee. Being of waterproof nature they are preferred by lumbermen to the elk or moose moccasin as they withstand the wet slush of early spring and late fall. They may be dried before a fire but care must be taken to prevent them from burning. A dressing of oil keeps them soft and waterproof. Let your moccasins or shoe packs be large enough to permit your wearing several pairs of woollen socks.

#### Skis

Skis have a decided advantage over snowshoes under certain conditions, especially when you are travelling down hill,



Skis.

and a skiing hike, with a little sliding thrown in, makes jolly good sport. Let the novice, however, get a little practice in



Ski Fittings.

balancing before trying any jumps. Remember we must all learn to walk before we can run. In running hills, keep the feet close together, one a little in advance of the other, the knee of the advanced leg straight, or almost so, but the knee of the rear leg considerably bent. Bend well forward and steer by throwing your weight on the outside edge of the ski on the side to which you want to turn. Many boys make their own skis and sell others to their friends.

Let not the Indian snowshoe, however, be despised and abandoned in favour of the Norwegian ski. For the former has its own uses and offers good sport besides.

There is usually excellent outdoor skating on many of the smaller streams throughout Canada before the snow comes and occasionally in mid-winter. Here is a chance of a troop or patrol outing that is hard to beat.

## CHAPTER V

### SIGNALS AND SIGNALLING

#### SIGNALS

Communication by means of signals is as old as human existence, but modern times have seen a wonderful development and improvement over the crude methods that were in use by primitive mankind. It is a far cry from the elaborate means of communication by electric currents and sound waves employed in these days back to the signal fire, smoke and drum tap danger warnings that were in use among the Indian tribes when Columbus discovered America. Yet Canadian Boy Scouts will find interest and profit in acquainting themselves both with the marvellous, modern methods of communication and with the simple signs and signals that are still employed by Canadian woodsmen and trappers in forest and mountain wilds.

Signalling cannot be learned in a day. It was, therefore, of great value to the navy and the army to find all ready trained to the work at the beginning of the war a great number of Boy Scouts whom they were able to take on. These had only learned signalling as part of their Scout's duty, little thinking that it would come in so valuable for their country; but when the war broke out they proved themselves to be true Scouts by being prepared in this branch of work; and it has been stated on the best of authority that some of the very best signallers in the Canadian forces received their first lessons in the Boy Scouts.

Although telephones, telegraphs, and wireless offer the most perfect means of communication over distances beyond the range of hearing or sight, there are many other means of communication still in actual use, including flags of various shapes and colours, runners, despatch riders, carrier pigeons, cones, balls, drums, bells, movable arms known as semaphores, blasts of sound and flashes of light. To all these the war has added yet other devices, one of which permits of the transmission of Morse Code messages over limited distances through the

earth somewhat in the same way as they are sent by wireless through the air. Extensive rise has also been made of power buzzers.

The earliest record of the use of signals in warfare is given by Polybius, the Greek historian, in the second century before Christ. By the use, which he describes, of torches it was possible to spell out words and directions. The Romans also used flags, shields and lanterns for signalling purposes and doubtless similar methods were practised during the Middle Ages. Captain John Smith, when he was fighting on the side of the Austrians against the Turks three hundred years ago, devised a system of night signalling by torches which he also put to excellent use. On one occasion when an Austrian force was besieged by the Turks, Smith brought up a relief force and arrived on a hill near the besieged town during the night. Here he made a number of torch signals which were understood by the Austrian garrison. Then Smith attacked the enemy in the rear and thus enabled the garrison to break out successfully.

It was not until the middle of the nineteenth century that military signalling became at all general as a special duty. The advent in the present way of long range guns and of aeroplanes, zeppelins and submarines meant, however, that we were faced with new problems in signalling and the detection of sounds through the air and earth and water which the British scientists set themselves to meet and happily have succeeded in meeting in very large measure.

Early in the war German big guns began dropping shells into Dunkirk from Heaven knows where and we were told that it was not long before the enemy would be shooting projectiles into England from across the English Channel. Stations were, however, established in France, provided with scientific instruments for recording vibrations through which the British worked out the exact location of these German monsters of destruction. So accurate, indeed, were the British calculations that our artillery silenced the enemy weapons by a single shot.

Again at Ypres the Germans dropped what was called a curtain of fire behind our trenches with the object of cutting off communication between our front trenches and supporting artillery, who at first were unable to get the enemy's range and location until this problem too was solved by two young scientists, one of them from Canada. The result of

their efforts was the production of a portable instrument capable of giving Morse code signals that could be read with distinctness at five miles distance. Zeppelin and aeroplane raids over the English cities and the submarine menace of German barbarism all around the British Isles alike called for the exercise of ingenuity and pluck of the very highest order. Each successive menace was, however, promptly met and overcome by the resourcefulness of British brains, without which the daring of our soldiers and sailors would all have been in vain.

### Trails

Many of the original pathways here and there throughout the forest lands of Canada and across her mighty mountains and plains were doubtless made in the first place by the roving bands of big game in their migrations from point to point. These became in time the land trails used also by the Indian tribes and later by the pioneer explorers, trappers and settlers, and in many cases were chosen by the surveyors engaged in the location of railway lines. The blazed trail of the Indian may not always be the shortest route but it will invariably be found the easiest of travel. The Indian marked his way through the dense forest by cutting a slash through the bark of an occasional tree as he went along in such a way as to indicate the path from one guide post to another.

Nowadays it is only in remote woods that tree blazing is permissible. Still a knowledge of these things is a necessary part of anyone's education in woodcraft. In the case of many old trails the blaze is on the side of the tree facing the trail. These are not, however, as easy to follow as the common form of trail in which two blazes are made on opposite sides of the tree so as to catch the eye either going or coming. A sharp turn in the road is also indicated by an additional blaze in the desired direction. Sometimes a sapling is felled at a turn in the path and the upper part left hanging on its stump in the desired direction.

The trapper's trail does not usually begin at the camp but some little distance away and is more concealed than either of the foregoing, being marked only on the noteworthy trees and much higher up. Peculiar hacks and other individual signs are employed to indicate the presence of nearby traps. A still more concealed form of blazed trail was that made by parties



of Indians on the war path. Sometimes the Indian signs took the form of picture despatches like the one shown in the accompanying illustration, which was sent by the Indians from Montreal to the French at

a time when the latter were at war with the English colonists. The meaning of the despatch was that the English had left Montreal, represented by a bird just taking wing from a high hill. The moon and the buck in the picture were intended to let French know that the time was the first quarter of the buck moon, answering to July.

The blazed trails of the Indians are still found in the wooded districts of Canada and similar markings are used by Canadian woodsmen.

Circumstances may occur under which Scouts may have to blaze a trail of their own through remote, unfamiliar woods to prevent being lost, but blazing trees under any other circumstances than these is not permissible, and equally as good Scouting practice can be had by using chalk-marks and pieces of paper. An advance party of Scouts traversing an unfamiliar path may give information to those following behind by the use of Indian signs. At a cross-roads they may mark the right one by tying a bunch of grass to a conspicuous branch on the road which is taken; or, if the advance party should leave the path entirely, they may indicate this by tying a bunch of grass in the desired direction on top of a rod set up in the middle of the path. If the advance party plans to return and meet the others they may bend two conspicuous branches or saplings towards one another as a sign that they had turned back and in case the two parties should fail to meet. If the advance party desire their followers to camp at a certain point they may indicate this by drawing a circle on the ground.

Where there are no trees two stones are used, one on top of the other, to show the way.

The Eastern Cree Indians inhabiting the region east of York Factory and Norway House use the following device to indicate at what time of day a place was left. A circle is first drawn in the snow or dust, a stick is then set up in the centre





and the shadow cast by the stick is marked outward to the circle as shown in the illustration herewith. The age of the circle itself is told by the usual signs, such as the snowfall, rainfall, etc.

Three shots fired in succession are generally recognized as a call for help. The Indians used three smoke signals for a like purpose. Three stones on top of one another, three blazes on a tree, three tufts of grass, or three short blasts on a steamboat whistle all indicate distress and an appeal for help.

**SCOUT SIGNALS**

When a Scoutmaster wants to call his troop together he makes his bugler sound the "Scouts' Call."

Patrol Leaders thereupon call together their patrols by sounding their whistles, followed by their patrol (animal) war cry. Then they double their patrols to the Scoutmaster.

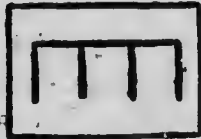
Whistle signals are these:

1. One long blast means "Silence," "Alert," "Look out for my next signal."
2. A succession of long, slow blasts mean "Go out," "Get farther away," or "Advance," "Extend," "Scatter."
3. A succession of short, sharp blasts means "Rally," "Close in," "Come together," "Fall in."
4. A succession of short and long blasts alternately means "Alarm," "Look out," "Be ready," "Man your alarm posts."

5. Three long blasts followed by one short one from Scoutmaster calls up the Patrol Leader, *i.e.*, "Leaders come here!"

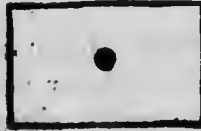
Any whistle signal must be instantly obeyed at the double as fast as ever you can run—no matter what other job you may be doing at the time.

The following are some of the signals and trail signs in use by woodsmen, plainsmen and mountaineers in North America:



A BAD  
DOG  
IN A  
YARD

FIG. 1



DANGER

FIG. 2



LINE  
BLAZED  
TRAIL

FIG. 3



SPOT  
TRAIL

FIG. 4



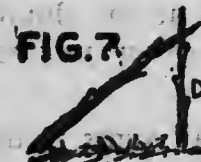
THE  
DIRECTION  
THE BUSH  
IS BENT

FIG. 5



THIS  
WAY

FIG. 6



LONG  
DISTANCE  
THIS  
WAY

FIG. 7

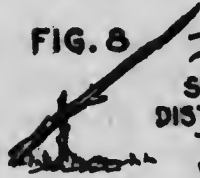


FIG. 8

SHORT  
DISTANCE  
THIS  
WAY

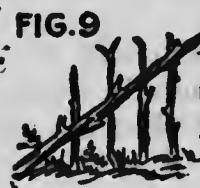


FIG. 9

FOUR  
MILES  
TO

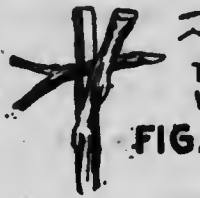


FIG. 10

THIS  
WAY



TURN TO  
RIGHT

FIG. 15



TURN TO  
LEFT

FIG. 16



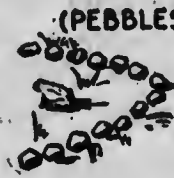
(STICKS) THIS  
WAY

FIG. 17



THIS IS  
THE TRAIL

FIG. 11



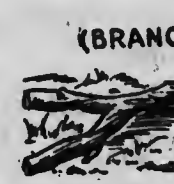
(PEBBLES) THIS  
WAY

FIG. 18



TURN TO  
RIGHT

FIG. 12



(BRANCH) THIS  
WAY

FIG. 19



TURN TO,  
LEFT

FIG. 13



(LOP-STICK)  
ATTENTION!

FIG. 20



GRASS  
MARKING  
TRAIL

FIG. 14



DANGER!  
HELP!

FIG. 21

Note: Figures 3, 4 and 5 represent methods used on the frontier where wood is nearly valueless. They should not be used by scouts generally, as they injure the trees.

The illustrations on this and the following page are reproduced by permission from the Handbook for Boys of the Boy Scouts of America.



FIG. 22

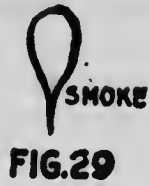


FIG. 29

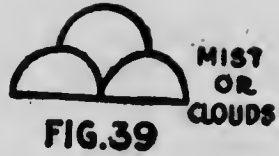


FIG. 39

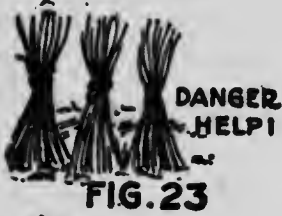


FIG. 23

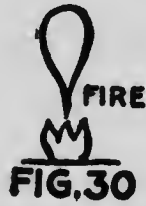


FIG. 30

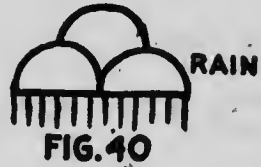


FIG. 40

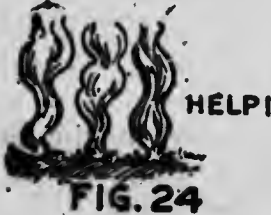


FIG. 24

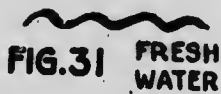


FIG. 31 FRESH WATER

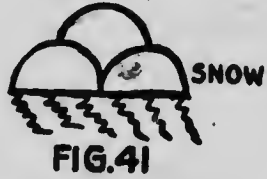


FIG. 41

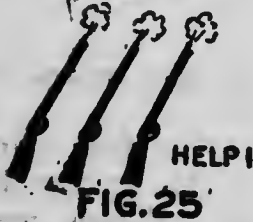


FIG. 25



FIG. 32 UNDERGROUND WATER A SPRING

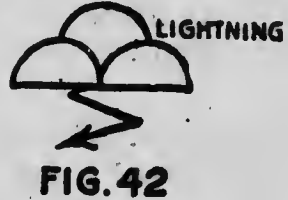


FIG. 42

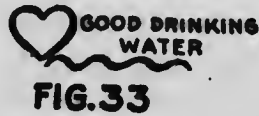


FIG. 33

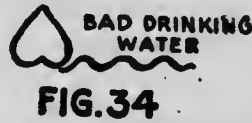


FIG. 34

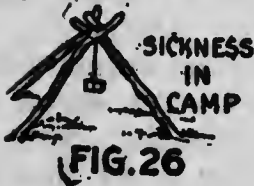


FIG. 26



FIG. 35

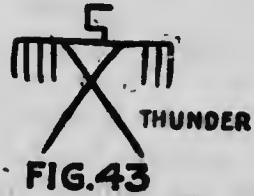


FIG. 43



FIG. 27

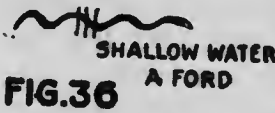


FIG. 36

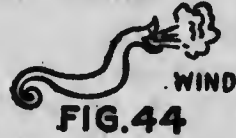


FIG. 44

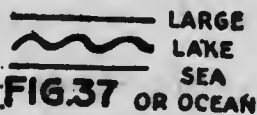


FIG. 37 OR OCEAN

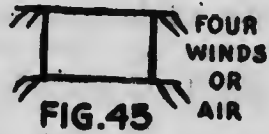


FIG. 45

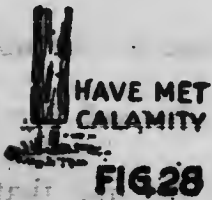


FIG. 28



FIG. 38

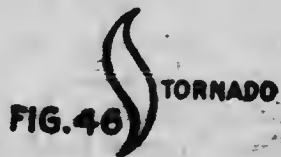


FIG. 46

**Scout Signs**

A Scout must know the Scout signs. You may want to let your brother Scouts know where you have gone. Don't mark up walls or fences unnecessarily. Mark your sign on the right-hand side of the road, on the ground or wall. If on the wall, mark *low down*.



Road to be followed.



Letter hidden three paces from here.



This path not to be followed.



I have gone home.

Signs like the foregoing are ordinarily signed by the Scout who has made them. The signature sign is made up of the patrol sign with the Scout's patrol number and troop.

**Smoke Signals**

Scouts of all countries use fires for signalling purposes—smoke fires by day and flame fires by night.

Three continued columns of smoke about fifty feet apart is accepted as a warning that someone is in trouble or that there is danger ahead. A succession of smoke columns means "Halt." Alternate puffs and big ones mean "Danger."

To make a smoke fire, light your fire in the ordinary way and as soon as it is strong enough put on green leaves and grass, or damped hay, etc., to make it smoke, then cover the fire with a damp blanket, take off the blanket to let up a puff of smoke, and put it over the fire again. The size of the puff depends on for how long you lift the blanket. For a short puff hold it up while you count two, and then replace the blanket while you count eight, then let up another puff while you count two, and so on. For a long puff hold up the blanket for about six seconds.

**Flare Signals**

Long or short flares mean at night the same as the above smoke signals by day.

You light a flare fire with dry stick and brushwood, so as to make as bright a flame as possible.

Two Scouts hold up a blanket in front of the fire, that is

between it and those to whom you are signalling, so that your friends do not see the flame until you want them to. You drop the blanket while you count two for a short flash, or six for a long one, hiding the fire while you count between each flash.

Scouts may arrange a code of signals between them for purposes of secret communication either in the open or indoors. Some of the widely heralded wonders of telepathy and mind reading have, indeed, been practised by impostors through secret codes based on voice inflections or accents on certain words or syllables. If you want to write a despatch that will puzzle most people to read, use the Morse or semaphore letters in place of the ordinary alphabet. It is quite readable to any of your friends who understand signalling.

### Hand Signals

The following are hand signals in use among Scouts which may be made by Patrol Leaders with their patrol flags when necessary.

The hand waved several times across the face from side to side, or a flag waved horizontally from side to side opposite the face means "No," "Never mind," "As you were."

The hand or flag held high, and waved very slowly from side to side, at full extent of arm, or a succession of slow blasts of the whistle means "Extend," "Go farther out," "Scatter."

The hand or flag held high, and waved quickly from side to side at the full extent of arm, or a succession of short, quick blasts of the whistle means "Close in," "Rally," "Come here."

The hand or flag pointing in any direction, means "Go in that direction."

The clenched hand or flag jumped rapidly up and down several times, means "Run."

The hand or flag held straight up overhead, means "Stop," "Halt."

When a Leader is shouting an order or message to a Scout who is some way off, the latter, if he hears what is being said, should hold up his hand level with his head all the time. If he cannot hear, he should stand still, making no sign. The Leader will then repeat louder, or beckon to the Scout to come in nearer.

The following signals are made by a Scout with his staff

when he is sent out to reconnoitre within sight of his patrol, and they have the following meanings:—

The staff held up horizontally, that is flat with both hands above the head, means "A few enemy in sight."

The staff held up horizontally above the head and moved slowly up and down means "A number of enemy in sight, a long way off."

The staff held up horizontally above the head and moved rapidly up and down means "A number of enemy in sight, and close by."

The staff held straight up over the head means "No enemy in sight."

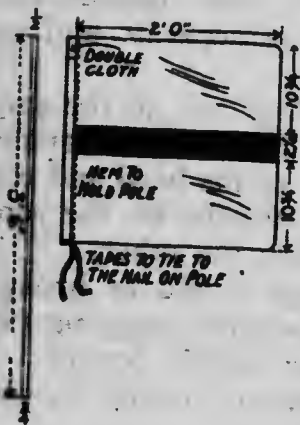
### FLAG SIGNALLING

The Second Class test requirements for Scouts call for a knowledge of the semaphore or Morse code methods of spelling out despatches through the use of hand flags. Before the invention of the electric telegraph, semaphores in the form of movable arms, set on high poles, were used for transmitting messages over long distances. Every Scout has noticed the semaphores that are used in connection with railway operations. One of the most familiar of these is the block system of safety signals along railway lines in which the semaphore arm at the horizontal signifies danger and in the dropped position safety. Semaphore signalling has also been adapted to military and naval requirements through the employment of two small hand flags which are held in the sender's hands in line with the extended arms. In Morse code signalling, one flag only is used, either two or three feet square, mounted on a pole three and a half feet long and five and one-half feet long respectively. The alphabet is spelt out by long and short wavings of this flag. Semaphore flags are two feet square, mounted on poles three and a half feet in length. The flags both for Morse or semaphore signalling are either white in colour with a blue horizontal stripe for use with dark backgrounds or all blue for use on the sky-line or against light backgrounds. Morse code signals with the larger flags can be read at three to four miles distance and semaphore signals at one to two miles if glasses are used.

Many thousands of Boy Scouts have already proved their ability to read and send flag signals and there is, therefore, no reason why others should not do likewise.

The successful conduct of army operations is dependent on keeping all communications open, and it is the signaller's duty, whether by semaphore or Morse code, or otherwise, to transmit his message quickly, letter by letter. If, for any reason, he is prevented from signalling, a message by one method he must try to get it through by another, whatever the risk may be. If he should fall into the enemy's hands it is expected of him that he shall guard all information in his keeping from becoming known to the enemy, even at the cost of his own life. The signaller's part in warfare, as will thus be seen, is one calling for courage and resourcefulness of the highest order. The experience gained in the European war goes to show that flag signalling is still invaluable, but that it is useless in other than expert hands for the reason that none but experts can get their messages through. The white flag is seldom used on service nowadays on account of the risk it involves, and the blue flag semaphore, and Morse code signals, read through a telescope, are the most important methods of flag signalling actually in military use.

Semaphore Signalling



In semaphore signalling there are eight different positions of the flags, together comprising a complete circle. A chart is shown herewith indicating the positions of the flags for the different letters.

The letters A to G compose the first circle. Starting with both arms at the ready position (see chart), A, B, C, and D are made with the right arm, the left remaining at the ready position. E, F, and G are made with the left arm, the right having been brought back to the ready after the letter D. This is the first circle. The second circle includes the letters, H, I, K, L, M, and N; J being for the time left out. The position for H is as follows: Start off with the right arm at A and left across the body at B. I, K, L, M and N follow, the right arm remaining at A and the left moved one-eighth of the circle for each letter. The third circle O to S starts with the right arm at B and left at C. For P the left arm is

moved to D. Q, R and S follow by moving the left arm an eighth of a circle in each case. The fourth circle T, U, Y and "erase" follows in like manner with the right arm at C, the left moving to the next point of the circle, successively. The fifth circle is made up of the "numerical" sign, J (or alphabetical sign) and "V," the sixth circle of W and X and the seventh Z.

It is of importance in signalling to attend strictly to the following points:

1. The signaller must stand exactly facing the person or station he is sending to, firmly on both feet, the feet to be 8 to 10 inches apart.

2. The flags must be held at the full extent of the arms, and the arm and flag should form one straight line. A good plan is to push the end of the pole up under the sleeves, and have the first finger of each hand lying along the pole.

3. Do not throw the arms to the rear.

4. Be very careful to place the arms in the exact positions for the letters. This is the most important point. Bad or careless sending is impossible to read, and the commonest error is not paying strict attention to this point.

5. In sending letters where the flags are close together, such as with O and W, the flags must be kept separate and not allowed to cover one another.

6. When forming letters where both flags are on the same side of the body, such as the letters O, X, W, etc., the signaller should turn well round on the hips, but keep his head and eyes straight to the front. The flags should also be on the same plane, that is to say, the one exactly above the other.

7. When double letters occur, the flags should be brought well into the body. Don't attempt the peculiar juggling performance which is sometimes done for double letters. In fact, never use any out-of-the-way means of trying to send faster, as they only lead to confusion.

8. Don't send too fast, and never send faster than it is within the power of the reader to read without confusion, as doing so only means waste of time, through repetitions, etc.

9. When at the "ready position," or when making letters that require the use of only one arm, the flags should be kept crossed right in front of the body, the points of the poles pressing against the feet.

10. Both flags should be of the same colour.



Numerals are always preceded by the numerical sign (opposite to "T") and are the same as the first ten letters of the alphabet, K standing for zero. Any group of figures is finished by the alphabetical sign to denote that figures are finished or letters follow.

The alphabet is best learned through signal drill with the instructor facing the class. One must always remember that in semaphore signalling what is seen is the reverse to what is sent. In other words, the party receiving the message sees the letter A to the right of the sender but to his own left. Look in a mirror when practising and you will see the letters as they appear to the party receiving the message.

Special signs such as for full stop, underline, parentheses or brackets, inverted commas, oblique stroke, horizontal bar and hyphen are signalled as follows in semaphore: full stop, AAA; underline, UK; parentheses or brackets, KK; inverted commas, RR; oblique stroke, LT; horizontal bar, NR; hyphen, NV.

The following are miscellaneous signals in use in semaphore signalling:

NAME	SIGNAL	How SENT
General answer .....	A	As a group of 1 letter.
Preparative .....	"J"	Sent continuously until answered.
Erase .....	Opposite to "L"	Remain on the letter till answered.
Block .....	UK	As a group of 2 letters.
Word after .....	WA	" " 2 "
Repeat .....	IMI	" " 3 "
Go on or spell out .....	K	" " 1 letter.
Break .....	II	" " 2 letters.
End of message .....	AR	" " 2 "
Message correct .....	R	" " 2 "
Symbol used between whole numbers and fractions .....	MM	As 2 letters sent in the same group as the figures to which it refers.

Morse Code Signals

The Morse alphabet was originally devised by Samuel Morse in the last century for use in the sending of telegraphic messages. For that purpose it consisted of a series of dashes and dots combined in such a way as to indicate the different letters. Thus, one dot (.) means E, one dash (—) T; a dot and a dash (.—) A, and so on. The Morse alphabet is the

one which is still in use in telegraphy both in the United States and in Canada. The International alphabet, used in Europe, differs from the Morse only in the formation of a few letters. In the development of military signalling the principle of the Morse code was extended to the transmission of messages by long and short wavings of hand flags, long and short blasts on a whistle, and by long and short flashes of light.

In the American Civil War, Captain Clowry, a scout officer, wanted to give warning to a large force of his own army that the enemy were going to attack it unexpectedly during the night; but he could not get to his friends because there was a flooded river between them which he could not cross, and a storm of rain was going on.

What would you have done if you had been he?

A good idea struck him. He got hold of an old railway engine that was standing near him. He lit the fire and got up steam in her, and then started to blow the whistle with short and long blasts—what is called the Morse alphabet. Soon his friends heard and understood, and answered back with a bugle. And he then spelt out a message of warning to them, which they read and acted upon. And so their force of 20,000 men was saved from surprise.

Sir Robert Baden-Powell found it most useful once during the Boer War. "My column," he writes, "had been trying to get past a Boer force which was holding a pass in the mountains. Finding they were too strong for us, we gave it up late in the evening, and, leaving a lot of fires alight, as if we were in camp in front of them, we moved during the night by a rapid march right round the end of the mountain range, and by daylight next day we were exactly in rear of them without their knowing it. We then found a telegraph line, evidently leading from them to their headquarters some fifty miles farther off, so we sat down by the telegraph wire and attached our own little wire to it and read all the messages they were sending, and they gave us most valuable information. But we should not have been able to do that had it not been that some of our scouts could read the Morse code."

It is important to remember in either flag or light signalling with the Morse code that the long waving or flash should be exactly equal in duration to three short wavings or flashes and that an interval equal in duration to one long waving or flash is always made after each letter.

To be an efficient signaller, it is necessary to know how to hold and wave the flag, and the following instructions should be carefully followed:

**Fig. A.—“Prepare to signal.”** Carry the left foot ten inches to the left, cant the pole with the right hand upwards to the left, catching it with the left hand about the centre. At the same time seize the pole with the right hand about six inches from the butt, then grasp the cloth with the left hand in line with the right. Both hands should be level with the waist, and the pole pointing over the left shoulder.



**Fig. B.—“Ready.”** Raise the flag from position A, and allow it to fly, the left hand grasping the butt of the pole, which should be level with the chin and eight inches from it, the right hand in the same position as in the “prepare to signal.” The elbows should be free from the body, and the eyes looking to the front.

**Fig. C.—“Dot.”** Pivot the pole between the hands and bring it smartly from the “ready” position to a corresponding position on the opposite side of the body, and back smartly to the “ready” position again without pausing.

**Fig. D.—“Dash.”** Pivot the pole between the hands, bring it from the “ready” to the opposite side of the body till the point of the pole is slightly below the horizontal. Bring the flag smartly back to the “ready.”

Begin by sending the “Preparative,” (a succession of dots sent continuously) until answered by “General Answer” (T), then proceed with the message. Each word, if received correctly, is answered by T. Should any particular part of a message be found incorrect or incomplete, send IMI (in one group), the “Repeat Signal.” It is acknowledged by T, upon

Morse Code Signalling

seeing which you will ask for the part required to be repeated. Before sending figures, send FI (Figures intended), and when finished FF (Figures finished). Figures are checked back as in Semaphore. During the great war the long numeral signs only were used and the signals FI and FF thus omitted.

When working in pairs (*i.e.*, two at each end) in sending, one reads out the message and the other sends it and watches for replies. In reading, the latter calls out the letters as he gets them, and makes such answers as are ordered by the former, who also writes the message down.

#### Morse Alphabet

A.—	N—.
B—...	O— — —
C—.—.	P.— —.
D—..	Q— — .—
E.	R.—.
F..—.	S...:
G— —.	T—
H....	U.— —
I..	V...—
J.— — —	W.— —
K—.—	X—..—
L.—..	Y—.— —
M— —	Z— — .

#### Morse Symbols for Signs of Punctuation, etc.

- Decimal point iii. Sent as three i's.  
 Full stop (.) AAA. Sent as one sign.  
 Break signal or fresh line —...—  
 Wait. Q — — . —  
 Go on, K — . —  
 Hyphen ii. Sent as two ii's.  
 Interrogation (?) .. — . —  
 Underline .. — — . —  
 Parentheses ( ) — . — — . —  
 Inverted commas (" ") . — . . — .  
 Completion of message or "understand" AR . — . —  
 Sent as one sign, except in semaphore where it is sent as two letters.  
 Rub out .....  
 Bar of division (/ or I) . — . —  
 Fractional or horizontal bar (—) — . — .

Symbol to be used between whole numbers and fractions  
— — — —

Symbol to be used before and after a word or words in block letters UK .. — — — . —

In signalling, each word or group must be acknowledged by the station receiving the message before another is sent. This is done by the "General Answer" (one dash) with certain exceptions such as numerals, which are acknowledged by the check, and cipher, which is acknowledged by being repeated exactly as sent by those receiving it.

### HELIOGRAPH

The heliograph, or sun writer, is used for signalling by the reflection of the sun's rays from a mirror or mirrors. The mirror revolves on a horizontal axis and is adjusted to the required angle of incidence with the sun in such a way that flashes of reflected sunlight can be directed to any point with the utmost precision.

In order to reflect light on a distant point the mirror must be placed at a right angle to an imaginary line drawn half way between the direction of the sun and the direction of the distant point. This must be borne in mind in using the heliograph. When the sun and the distant point are in opposite directions, it becomes impossible to reflect the light from one mirror alone in the desired direction and a second or duplex reflector is called into use.

The Continental Morse code is used with the heliograph with this difference that long and short flashes of light take the place of the dashes and dots of the ordinary telegraph instrument. These signals, sent by army instruments, can be read under favourable weather conditions, without the aid of field glasses, at a distance of fifty miles, and there are records of heliographing messages over ranges of 100 and 125 miles. By the use of repeating stations uninterrupted communication has been maintained for a fortnight between points two thousand miles apart. The heliograph, of course, depends on sunlight for its operation. For short distances moonlight and artificial light have, however, been employed as the source of light. Night signalling in the field is, however, mainly done with the flash lantern or searchlight, using the Morse code system in either case.

Boy Scouts

CHARACTER	INTERNATIONAL OR CONTINENTAL MORSE <i>Wig-Wag Sound, Dash, Dot, Reverse</i>	AMERICAN MORSE <i>Land Telegraph Code.</i>	TWO ARM SEMAPHORE		INTERNATIONAL CODE OF SIGNAL FLAGS <i>(Pennant)</i> <i>White - Black - Red - Blue - Yellow</i>	SECONDARY MEANING <i>Refer to Columns Indicated</i>
			MACHINE	HAND FLAGS		
A	· · ·	· · ·				<i>Message 1</i> <i>Col. V. W.</i>
B	· · · ·	· · · ·				<i>Message 2</i> <i>Col. W.</i>
C	· · · · ·	· · ·				<i>Message 3</i> <i>Col. W.</i>
D	· · · ·	· · ·				<i>Message 4</i> <i>Col. W.</i>
E	· ·	· ·				<i>Message 5</i> <i>Col. W.</i>
F	· · · · ·	· · · ·				<i>Message 6</i> <i>Col. W.</i>
G	· · · · ·	· · · · ·				<i>Message 7</i> <i>Col. W.</i>
H	· · · · ·	· · · · ·				<i>Message 8</i> <i>Col. W.</i>
I	· ·	· ·				<i>Message 9</i> <i>Col. W.</i>
J	· · · · ·	· · · · ·				<i>Message 10</i> <i>Col. W.</i>
K	· · · · ·	· · · · ·				
L	· · · · ·	· · · · ·				
M	· · · · ·	· · · · ·				

Comparative Chart

CHARACTER	INTERNATIONAL OR CONTINENTAL MORSE	AMERICAN MORSE	TWO ARM SEMAPHORE		INTERNATIONAL CODE OF SIGNAL FLAGS (NAVY)	SECONDARY MEANINGS
	WIG-WAG <i>Sound, Flash, Sight, Wireless.</i>	<i>Land Telegraph Code.</i>	MACHINE	HAND FLAGS	<i>White - Black - Red - Blue - Yellow.</i>	<i>Refer to Columns Indicated.</i>
N	--- ·	--- ·				
O	--- ---	· ·				
P	--- · · ·	· · · ·				<i>READY TO SAIL. Col. VI.</i>
Q	--- · · · ·	· · · ·				<i>QUARANTINE Col. VII.</i>
R	--- · ·	· · ·				<i>Col. V, VI.</i>
S	· · · ·	· · ·				<i>I WANT A PILOT. Col. VI.</i>
T	—	—				<b>NUMERALS GENERAL SERVICE CODE</b>
U	· · · ·	· · · ·				1 · · · · ·
V	· · · ·	· · · · ·				2 · · · · · 3 · · · · ·
W	· · · ·	· · · · ·				4 · · · · · 5 · · · · ·
X	· · · ·	· · · · ·				6 · · · · · 7 · · · · ·
Y	· · · · ·	· · · · ·				8 · · · · · 9 · · · · ·
Z	· · · · ·	· · · · ·				0 · · · · ·

### Signalling Systems

The drawings on this and the preceding page are reproduced by kind permission from the Handbook for Boys of the Boy Scouts of America.

In signalling with the heliograph the first position is to turn a steady flash on the receiving station. Use a short flash for the dot and a long, steady flash for the dash. The elements of a letter should be slightly longer than in sound signals. To call a station make its call letter until acknowledged. If the call letter of a station be unknown, signal A until acknowledged. Each station will then turn a steady flash and adjust. When the adjustment is satisfactory to the called station, it will cut off its flash, and the calling station will proceed with its message.

If the receiver sees that the sender's mirror light needs adjustment, he will turn on a steady flash until answered by a steady flash. When the adjustment is satisfactory the receiver will cut off his flash and the sender will resume his message. To break the sending station for other purposes, turn on a steady flash.

#### RAILWAY SIGNALS

Boy Scouts should at all times be prepared to prevent an accident on a railway. To this end it is advisable that they should know the signals used and recognized by trainmen for stopping trains. Two pulls on the bell cord running through every car of a train is a signal to the engineer to stop at once. Two pulls on the air whistle serves the same purpose. Three pulls on the bell cord or the air whistle is the direction to stop at the next station. When the train is standing still, two pulls on the bell cord or on the air whistle is the signal to start and three to back up. Four pulls when the train is running is the signal to reduce speed and five pulls to increase speed. Six pulls is the direction to increase steamheat. In the case of danger on the track or otherwise, all that is necessary to do to stop a train is to get into a position where you can attract the attention of the engineer of the on-coming locomotive and wave any object violently as a signal to stop. It is on record that a little girl on her way to school prevented what might have been a very serious accident to a train through a washout, by taking off a red shawl she was wearing, tying it to a stick, and placing the whole upright in the centre of the track, then proceeding over the washed out portion of the roadbed to a point where any train could be signalled coming from the other direction.

Red always means stop. Thus, if the semaphores that are



to be seen in railway yards and on the approach to stations are set in a way to show red, the train must stop until this signal is changed. A fusee on or near the track burning red must not be passed until burnt out. Green is a signal to proceed with caution. White is a signal to proceed.

There are also hand, flag and lamp signals in use in railroading. If one of these is swung across the track it is an indication that a train is to stop; if raised and lowered vertically, to proceed; and if swung vertically in a circle across the track when a train is standing, it is a signal to back.

One short blast of the engine whistle indicates that the train is about to stop. One long blast is used when a train is approaching a station, junction or railroad crossing; two long and two short blasts when a train is approaching a public crossing at a grade. Eight long blasts of the whistle is the distress signal and is a call for assistance. Section men or others hearing this signal should go at once to the train making this call. A succession of short sounds of the whistle is an alarm for persons or stock on the track and to call the attention of trainmen to danger ahead.

Torpedoes are also used by trainmen, particularly in a fog. The explosion of one torpedo is a signal to stop. The explosion of two, not more than 200 feet apart, is a signal to reduce speed and look out for a stop signal.

It must be clearly understood that the signals and information given above with regard to trains must only be used in case of emergency and as a direct aid to the railroad companies in saving life and property.

#### MARINE SIGNALS\*

Marine signals include lighthouses, fog alarms, signal buoys, storm signals, signals exchanged between vessels for preventing collisions and in case of distress, and also signals exchanged between vessels and shore reporting stations.

Lighthouses are so arranged along the coast as to mark the principal headlands and dangers, and the apparatus in the principal lighthouses is designed to show one flash, two flashes, three flashes or four flashes, these signals being so arranged along the coast line that two similar signals do not occur within fifty or sixty miles of each other. The signals displayed at each station are advertised through the medium of a List of

\*Contributed by J. G. Macphail, Commissioner of Lights, Department of Marine, Ottawa.

Lights and Notices to Mariners. A mariner, therefore, approaching the coast at any point and picking up a signal will readily identify it and thereby determine his position. The larger lighthouses depend for their signals on a system of large lenses revolving around a central source of light, kerosene oil vapour burned under a mantle usually being employed. The larger lights vary from one-half million to a million candle power and have been seen upwards of forty miles.

The signals emitted from fog alarm stations are likewise distinctive in character, giving one, two or three blasts of a definite number of seconds each at definite intervals and recurring at definite periods of time, usually a single, double or triple blast each one-half minute or minute. The sound is produced by means of an instrument called a diaphone operated by air compressed either by steam engines or internal combustion engines, the latter using kerosene for motive power. The sound from a diaphone may be heard distances up to fifteen miles, depending upon atmospheric conditions.

Signal buoys include light buoys, whistling buoys, bell buoys and submarine bell buoys. Light buoys or gas buoys are maintained at the more prominent turning points and to mark dangers lying offshore. They are operated either by acetylene or oil gas. They vary in weight according to size from five to nineteen tons. Whistling and bell buoys are operated by the motion of the waves, as are likewise submarine bell buoys. In the case of the latter the bell is carried some fifteen feet under water and being struck by the clapper attached to the mechanism sets up vibrations in the water which radiate in all directions and which are picked up in the form of sound through the medium of telephone instruments aboard vessels. These telephone instruments electrically connect the skin of the vessel with the pilot house. The advantage of submarine signals over aerial signals is that the direction of the former can be more or less exactly determined while in the case of the latter this cannot be done. Furthermore, silent areas occur with respect to aerial signals while submarine signals are not so affected. In the case of an aerial signal it sometimes happens that the sound is not audible over its entire range and that while it may be heard several miles away zones or areas occur within that distance where it is not heard.

In Canada there are some 1,600 lights, 300 fog signals, 450 signal buoys and 25 submarine bells.

Storm signals are exhibited at upwards of one hundred harbours throughout the Dominion. Information as to meteorological conditions is received daily from over five hundred points, co-related and interpreted by the Meteorological Service by which weather forecasts are given and warnings as to storms. The signals are hoisted from the yard arm of a mast and are as follows:—



No.1



No.2



No.3



No.4

No. 1.—This signal indicates the probability of a gale, at first from an easterly direction.

No. 2.—This signal indicates the probability of a gale, at first from a westerly direction.

No. 3.—This signal indicates the probability of a heavy gale, at first from an easterly direction.

No. 4.—This signal indicates the probability of a heavy gale, at first from a westerly direction.

The night signal corresponding to Nos. 1 and 3, is a red light.

The night signal corresponding to Nos. 2 and 4, is a red light above a white light.

Signals exchanged between vessels for preventing collisions consist of whistle blasts, the code of signals being of international comprehension.

Signalling between vessels and shore reporting stations is usually done by means of an



No.1  
or 3



No.2  
or 4

international code of flag signals in which each letter of the alphabet is represented by a particular kind of flag. By the combination of several flags words may be spelt and sentences formed, but it is usual to employ the code. This code has been adopted by all the important maritime powers of

the world and the interpretation of the several thousand different signals composing the code is translated into the language of each nation. All ships, therefore, meeting at sea are able to communicate with one another no matter if one is a Frenchman and the other a Greek, or whether the commander of one vessel is able to understand the language of the other in a verbal conversation. In this code a combination of two or three flags does duty for a sentence. For instance, U E represents "Report me by telegraph to owners"; H C "Indicate nearest place I can get coal"; X P "Beware of torpedoes. Channel (or fairway) is mined," etc. The most largely employed means of communicating with vessels at sea is by wireless telegraphy, and all the larger vessels are equipped with this apparatus. Many vessels, however, continue to depend on the flag signals.

#### TELEGRAPHS

The electric telegraph plays an important part in the life of the nation. Communication by telegraph is carried on by means of the Morse system of dots and dashes. The code that is used by the telegraph companies in Canada and the United States is that known as the American Morse, which is somewhat different from that used by the British Army and which is known as the continental Morse. Both codes are illustrated on pages 408-409. The telegraph and telephone play the most important role of all methods in army signalling in the field.

#### Wireless Telegraphy

There are in all five systems of wireless telegraphy in use in different parts of the world. The interest of Canadian boys is, however, confined to the best known system which is named after its inventor Marconi. Canadians, indeed, have a special interest in the Marconi wireless since it was through the financial assistance of the Canadian Government that trans-atlantic wireless communication was established by Mr. Marconi in 1902. Since that time a belt of wireless stations have been established around the entire world, and the ships of the British navy are enabled to keep in constant touch with one another and with the Admiralty headquarters in Whitehall. The wireless is also a highly specialized branch of military signalling operations and is used not only between land stations, but also for the transmission of messages from aeroplanes in flight.

Simple wireless outfits are not hard to make and their operation is comparatively easy. For a list of works containing full instructions on the making of wireless sets and their operation, see p. 633.

THE TELEPHONE

The telephone is an instrument with which Boy Scouts throughout Canada are so generally familiar as to require no further directions than are contained in the telephone directories. The telephone is, indeed, a Canadian invention, its author, Alexander Graham Bell, having first demonstrated the practicability of his theory that the human voice could be carried over a wire by the construction of a telephone line at Brantford, Ontario. "The telephone," Dr. Bell has himself stated, "was invented in Canada, and the first actual use of telephone lines was in this country."

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## CHAPTER VI

### PREVENTION AND TREATMENT OF ACCIDENTS

Before receiving the Second Class badge, it is required of Scouts that they shall have a knowledge of elementary first aid and bandaging. Scouts qualifying for the First Class badge are required to describe the proper method of dealing with various specified accidents, also to bandage an injured patient and to revive an apparently drowned person. Simple directions on all of the first aid tests for both the Second and First Class Scout badges are contained in the present chapter.

There are no available statistics of the total number of cases in Canada each year of accidental death and injury. But if all the accidents occurring in employment, on the street, and in the home were reckoned together they would be found to number many thousands, with an accompaniment of money loss and human misery which is truly incalculable. Yet more than one-half of all the accidents that occur are due to carelessness. Happily, there has been within recent years a nationwide movement in the direction of greater safety, with results which are already apparent. It is an old saying that prevention is better than cure. A Scout's influence, therefore, should always be on the side of prevention whilst at the same time he should know what to do in any emergency that may arise.

#### THE AVOIDANCE OF ACCIDENTS

As Scouts you will have especial opportunities in this branch of the programme to train your powers of observation. To tell you of all the ways in which you would be able to be of service to your home, community, school, and later to your employer would require a book. The following suggestions are given as a help to you and are recommended by the National Safety Council as fundamentals which every boy should observe in his daily life. They are classified under the home, the street, and the school.

## AT HOME

### Safety Begins at Home

Pick up pins and needles; they cause the death of many babies.

Keep medicines out of the reach of small children.

A thoughtful Scout will not leave anything on the stairs that may cause others to trip, slip, or fall, thus preventing injury to himself and to others.

Scalding water tipped from the edge of the stove may cause a fatal accident to a small sister or brother.

Be on the "lookout" for sharp knives, etc. They should be kept out of reach of small children.

Rugs should lie flat. Serious falls come from tripping over rugs.

Keep your yard free from broken glass, rusty wire, and projecting nails.

To play with matches is dangerous.

Keep matches in a closed metal receptacle.

Break matches before throwing them away.

Let dad's gun alone.

A Scout sometimes does his good turn by warning others against the use of coal-oil and gasoline when lighting a fire.

Keep all combustible articles, other than fuel for immediate use, away from the stove.

Curtains or woodwork are sometimes ignited by gas jets.

See that the chimneys are examined twice a year to keep the flues clear.

Sixty per cent. of all fires start in closets, cellars, or attics. Keep them clean and free from rags and dry wood.

See that the fire escapes and halls are kept clear of obstructions.

A Scout will not carry a lighted match or candle into a closet.

Burn greasy or oily rags and paper immediately after using.

When emptying gasoline or benzine cans, pour the contents on the ground away from buildings, instead of into sinks or drains.

Handling the electric wiring of a house is dangerous and may cost considerable for repairs.

**IN THE STREET**

It is dangerous to play in the street. Be careful.

**Crossing**

Cross streets at the corners and at right angles, instead of diagonally.

A Scout does not cross the street in front of a moving vehicle.

Always look in both directions before crossing: it never pays to run; you may fall.

Be careful in crossing behind a vehicle; one may be coming in the opposite direction.

Wait for the policeman's signal at busy corners, that you may not interfere with traffic or run into danger.

Keep to the right in walking (or to the left in those parts of Canada in which this is the common usage), and in entering doorways.

When waiting for a car, stand on the curb, not in the middle of the street.

Get on with the right hand and left foot; get off with the left hand and right foot.

Get off face forward, retaining firm hold of the handle until both feet are on the ground. Watch for teams and autos when you get off. Look both ways.

Always wait until the car stops, getting on or off.

The signals for stopping and starting a street car are: one bell—stop; two bells—start; three bells—stop immediately (used for emergencies).

It is dangerous to let any part of your body project from the car window or platform.

A Scout is trustworthy; he rides in the car instead of on the bumpers.

**Wires**

To handle wires of any kind, hanging from poles or trees, or to tamper with them may cause a serious accident or death. They may be live wires.

Report broken wires to the police department by telephone immediately.

A Scout will not fly a kite near wires.

A Scout protects property; he will not stone or shoot at the glass insulators on the poles.

A Scout knows of better places to play than around arc light poles; he knows that it is dangerous.



A Scout knows that to throw a string or wire over a trolley or other wire carrying a current is dangerous, because it is likely to produce a shock.

### Fires

Know the location of fire alarms.

Know how to turn in a fire alarm. After turning in an alarm, stay at the box until the arrival of the department to tell them where the fire is.

When you hear a fire alarm, keep on the sidewalk.

A Scout will invade the fire lines at a fire only when permitted to do so by the authorities.

### Railroad Tracks and Yards

It is dangerous to play along railroad tracks or on railroad bridges. Trains may be expected at any time.

Keep out of railroad yards.

Keep off sidings and cars standing on tracks.

Riding on steps and platforms is dangerous, as is climbing through cars when standing or moving. Wait until the car stops to get on or off.

Before crossing railroad tracks stop and listen; look in both directions.

A bell ringing or a moving signal arm indicates that a train is approaching.

Notify the station agent, track foreman, or some other official of the railroad whenever you discover a fire on railroad property. As Scouts you should put out any fire you may discover, unless instructed differently by railroad employees or officials.

To walk around lowered gates or crawl under them is dangerous.

It is dangerous to let any part of your body project from the car window or platform.

Be careful. In crossing make sure that there is no danger from a train on another track. Wait! It is dangerous to cross in face of a moving car or close to the rear of a standing car.

A Scout plays safe as much for the other fellow's sake as for his own.

He does not jump off moving trains, cars, or engines, and Scouting activities are such that he does not care to loiter around railroad stations, or to play on or around turntables.

He reads cautionary signs and rules for safety posted at stations, crossings, etc. He obeys all danger signals and warnings.

#### General

Accidents due to hitching on vehicles are very common.

A Scout prefers to coast in the open field rather than across a much-traveled highway or across car tracks.

Sling shots, air guns, or "beebee" guns have no place in the Scout programme; he knows that they are dangerous.

Keep away from excavations and open manholes.

Let strange dogs alone.

A Scout knows that sand and stones are very dangerous when thrown.

Use your own sanitary drinking cup in public places.

Have your little scratches and bruises taken care of at once.

Pick up banana peelings and deposit them in proper receptacles.

#### AT SCHOOL

Assist your teacher or principal in organizing a safety patrol among the older boys of your school. The following are some duties of the safety patrol:—

Guard street intersections near school as children come to school.

Keep children out of street at dismissal.

Help smaller children over crossings.

Post bulletins of advice to pupils for co-operation in safety work.

Make reports of accidents with suggestions for prevention.

Give notice to principal of any dangerous conditions.

Report open manholes, blocked hallways and fire escapes, protruding nails, or injurious obstructions, broken wires of all kinds; report the building of fires or dangerous places; for example, in lanes or near fences or buildings.

Doors of all public buildings should open outward.

See that halldoors are not locked.

Doors should have panic bolts; care should be taken not to rush and cause a jam at the entrance way.

#### Panics and Their Prevention

Note all exits as you enter a building.

In case of a panic at an indoor assembly, Scouts if they live up to their motto, "Be Prepared," may be able to save hundreds of lives.

Distribute the crowd. Use all exits leading to safety.

There is usually time for people to get out of a building if the exits are not blocked by too many crowding them at once. One should, if possible, try to arrange to have the performance continue whilst others reassure the people and get them to go out quietly through the exits provided, which, according to law, must open outward and be marked by illuminated signs.

Keep the crowd moving after passing through an exit.

Scouts know how quickly and safely our school buildings are cleared by means of well-organized fire drills.

Keep cool.

### THE TREATMENT OF ACCIDENTS

#### The Knights of St. John

Some of the knights of olden days were called "Knights Hospitaller" because they had hospitals for the treatment of the sick poor, and those injured in accidents or in war. They used to save up their money and keep these hospitals going, and although they were brave fighting men they acted as nurses and doctors themselves.

The Knights Hospitaller of St. John of Jerusalem especially devoted themselves to this work eight hundred years ago as a religious and military order and attained a moral distinction and a practical utility which continued for centuries and spread throughout all Europe. Through changing conditions its militant service as a bulwark of Christianity was finally finished, or perhaps we should say passed into other hands. But the duty of caring for the sick and suffering and the poor is never ended and early in the nineteenth century this order was revived in England with the King as its sovereign head and with its titular Prior and sub-Prior, its Knights and Ladies of Justice, Knights of Grace and Ladies of Grace, Prelates, Bailiffs and Commanders and Serving Brothers and Sisters who took the honourable task of trying to alleviate the miseries of the sick and helpless. There followed the establishment of cottage hospitals and convalescent homes, the training of skilled nurses, and the formation of the St. John Ambulance Association for instruction in first aid, home nursing and hygiene. Both the Association and the St. John Ambulance Brigade consisting of certified pupils of the Association and the Brigade, have accomplished a splendid work throughout the British Empire and have proved invaluable allies of the Red Cross and Army Medical Services in the Great War.

**The Challenge of To-day**

Accidents are continually happening and Boy Scouts who are trained in first aid will have many opportunities of rendering useful assistance in this way. Numbers of soldiers who had been trained as Boy Scouts have during the war been able to save the lives of wounded comrades by knowing how to bind up their wounds.

We all think a great deal of any man who, at the risk of his own life, saves someone else's. He is a hero. Boys especially think him so, because he seems to them to be a being altogether different from themselves. But he isn't; every boy has just as much a chance of being a life-saving hero, if he chooses to prepare himself for it.

It is pretty certain that nearly every one of you Scouts will some day or another be present at an accident where, if you know what to do, and do it promptly, you may win for yourself the life-long satisfaction of having rescued or helped a fellow-creature.

Remember your motto, "Be Prepared." Be prepared for accidents by learning beforehand what you ought to do in the different happenings that are likely to occur. Be prepared to do that thing the moment the accident does occur. When an accident occurs remember always that as a Scout it is your business to be the first man to go to the rescue; don't let an outsider get there before you.

When there is a panic among those around you, you get a momentary inclination to do as the others are doing. Perhaps it is to run away, perhaps it is to stand still and cry out "Oh!" Well, you should check yourself when you have this feeling. Don't catch the panic, as you see others do; keep your head and think what is the right thing to do, and do it at once. Help your fellow-creature, if you can, especially if it be a woman.

Boys have an idea that they are too young and too small to take any but an outside part in saving life. But this is a great mistake.

**Life-Saving Awards**

Since the inception of Scouting many different cases have occurred of Boy Scouts plunging in and saving drowning people where the crowd was afraid to help, and several more of Scouts helping the police or stopping runaway horses when other people feared to do it.

Sixty-four cases in all of life-saving and attempted life-saving by Canadian Boy Scouts have been brought to the attention of the Chief Scout for Canada during the first seven years of the history of the Scout Movement in this country and the following awards have been made:—

- 27 Silver Crosses.
- 16 Gilt Medals of Merit.
- 12 Scrolls of Honour.
- 6 Letters of Commendation.
- 3 Silver Wolves.

The acts of heroism for which these awards were granted include a number of cases of life-saving from drowning, the removal of skin from a Scout's body for grafting on a victim of severe burning, stopping a runaway team, capturing a ruffian who had held up and robbed several persons, the recovery of stolen money, saving a child from strangulation under the weight of a fallen window sash, the rescue of a person lost in the mountains, and fighting fire.

Apart from the awards which are granted by the Boy Scouts Association to its membership for life-saving there are two other life-saving medals, known as the Albert Medal and the Edward Medal respectively, which were instituted by Her late Majesty Queen Victoria for the recognition of cases of special heroism.

The Albert Medal was instituted in 1866 for the recognition of life-saving at sea and is awarded only to those who, apart from warfare, have endangered their own lives, in endeavouring to save others. It is confined to cases of extreme and heroic daring. Its purpose was extended in 1877 to include the recognition of deeds of extreme and heroic daring on land.

The Edward Medal was authorized in 1907 to reward acts of courage in saving life in mines. In 1909 its purpose was extended to include cases of persons who in any line of industrial employment endanger their own lives in saving, or endeavouring to save, the lives of others from perils incurred in connection with their employment.

The Royal Canadian Humane Association was instituted in 1894 for the purpose of rewarding persons, who, with promptitude and bravery, and at personal risk, or hazard of their own lives, save, or make strenuous effort to save the lives of others in any of the following cases: drowning, steamer or other accidents, railway accidents, accidents at fires, ice accidents,

freezing exposure, asphyxia in mines or wells, asphyxia from escaping gas, accidents from lightning and dynamic electricity and other unenumerated cases.

A fund has also been established by Mr. Andrew Carnegie for the recognition of heroism through the granting of medals and also of money rewards in especially deserving cases in which the rescuer has sustained injuries affecting his earning power. Mr. Carnegie in the establishment of this fund wrote as follows:

"I do not expect to stimulate or create heroism by this fund, knowing well that heroic action is impulse; but I do believe that if the hero is injured in his bold attempt to serve or save his fellows he and those dependent upon him should not suffer pecuniarily thereby."

So let every Canadian Boy Scout prepare himself to win one of these decorations. Some day, most probably, an accident will happen before you to give you your chance. If you have learned beforehand what to do, you can step forward at once, do the right thing, and perhaps later find yourself decorated with a life-saving medal. In any case, you will have what is far greater than a mere medal; you will have the satisfaction of having helped a fellow-creature at the risk of your own life.

#### **FIRES AND THEIR PREVENTION**

It is stated on the authority of the Chairman of the Canadian Conservation Commission that the Dominion of Canada has an abnormally large fire loss in proportion to its population. This is, however, a reproach which must be removed.

The destruction of standing timber alone in Canada by fire in the last fifty years has amounted to \$350,000,000. The annual property loss through all kinds of fires between 1912 and 1915 averaged \$21,000,000, or \$2.70 per head of the population, and if the cost of fire protection be added thereto the economic waste is much greater again.

Every year many persons are burned to death and others suffer serious injury.

Yet it is said that ninety per cent. of all fires are preventable. The commonest causes of so-called accidental fires are carelessness and neglect. Consequently, special care should be taken by all possible means to prevent fires from starting and Scouts everywhere should by their influence and their own example do all they can to prevent the continuance of this enormous waste.

If a few wise precautions are heeded many a life may be saved, and many a home successfully guarded against destruction.

#### Matches

Matches are useful little articles in their way, but carelessly handled cause much trouble and destruction. Never throw a burned match away unless you are sure it is thoroughly out. One often hears of fires being started by rats gnawing at matches, but this is pure myth. To prove it so, a number of rats were confined without food and provided with matches of every type and make. The outcome was that after the rats had eaten one another and the last rat had died of starvation, the matches were still left intact. This showed conclusively that the old accustomed cause for puzzling fires "rats eating matches" will no longer pass current.

#### Lighting Hazards.—Electricity

Electricity is a hidden danger. Do not destroy the insulation on electric light, fan, or heater wires by hanging them on hooks, nails, etc., and always remember that the fuse is the safety valve of every electric system, and should never be replaced by one of larger size, or any other material such as a hairpin, piece of wire, or nail, which is a very common practise. Before attaching electric fans, vacuum cleaners, cooking utensils, or any other electrical device to your lighting systems, you should consult an electrician as to the ability of your wiring to stand the extra load. Wiring systems are designed to carry only a certain current and if overloaded will cause fires.

#### What To Do in Case of Fire.

The first thing to do in case of fire is to notify the inhabitants of the house. Use any and every means to accomplish this; also warn the people next door; then either go yourself or send someone to the nearest fire alarm box and turn in an alarm.

After the arrival of the brigade there is little to be done, as firemen who are trained to do the work will probably be there in sufficient numbers to do all that is required. In places where there are no fire alarms, or where it takes a brigade a long time to reach a fire, much can be done by a properly organized patrol of Scouts. A Scout should, when he gets the opportunity, attend as many fires as possible, day or night, for experience.

Familiarize yourself with the operation and location of the nearest fire alarm box to your home, and whenever a fire occurs notify the fire department by sending in an alarm at once. Realize that the fire department is ready at all times, day and night, and remember that the most efficient service is rendered if the department is promptly notified.

Don't fail to notify the nearest fire station, or any fireman, of anything you see that is dangerous or liable to cause a fire.

Speak distinctly when calling the fire department by phone. As soon as you enter a theatre, hall or public building look for the exits and make up your mind which way you will take to the nearest exit if anything unusual should happen, and get up quietly and walk, not run, to that exit. Don't try to beat your neighbour to the street.

Own a fire extinguisher if you can, and have it situated where it will always be handy to get at. Keep on the sidewalk when apparatus is responding to a fire.

Always give the right of way to the fire department when it is responding to an alarm.

Ask any fireman for instructions or information and he will be only too pleased to advise.

#### How Scouts May Help

Scouts can do good work, if in numbers, to prevent the spread of flames. A fire, after it has gained sufficient headway, will carry sparks and burning embers a long way and endanger the surrounding property. The very best assistance Scouts can give under these circumstances is to organize and get around in yards and among sheds and watch the surrounding property, putting out sparks and burning embers which are liable to rekindle and start another fire. Work in the direction the wind is carrying the sparks. In case of a very large fire it may be necessary to even go a mile or two. If there are a number of Scouts together let the senior Scout inform the fire chief as soon as possible of the work he and his fellow workers are doing. Short ladders may be used from the fire trucks but must be returned as soon as possible.

Valuable assistance may also be rendered to the fire brigade if Scouts will take particular notice of the fire horses. Very often circumstances arise where a driver has not time to tie up his horses or put on their blankets in cold weather. A Scout should, if necessary, go and stand at their heads until



the fireman comes to tie and blanket them up, and if their blankets become untied or pulled over to one side politely ask the first man that comes along to straighten them on the horses' backs. Fire horses as a rule are very quiet and delight to be made much of and a Scout need not be afraid to stand at their heads.

Scouts must not under any consideration attempt to jump on fire apparatus either going to or returning from a fire. Try too and avoid getting in the way of the firemen while at work. Don't stand or sit on any fire apparatus in order to get a better view of the fire or climb poles. Don't get in the way of the police but rather assist them in keeping the crowd back and preventing people from driving rigs over lines of hose.

#### **How to Enter a Burning Building**

Care must be taken when entering a burning building. If it is necessary to go into a house to search for feeble or insensible people when the smoke is dense, take time to place a wet handkerchief, towel or stocking over your nose or mouth, fastened in such a way as to leave your hands free. A wet sponge is excellent as you will then get a little air from the water. Remember the air within six inches of the floor is free from smoke so if you find it difficult to breathe in an upright position, bend low or crawl along the floor. Also for passing through fire and sparks if you can get hold of a blanket wet it and cut a hole in the middle through which to put your head. This forms a kind of fire-proof mantle with which you can push through flames and sparks.

#### **How to Improvise Ropes**

Tear blankets or sheets along the warp in strips about twelve inches wide and tie the ends together with a reef knot. To lower a person from a window to the ground use the fireman's chair knot.

#### **Chutes and Fire Escapes**

Chutes are sometimes provided for the rapid exit of people from the upper floors of buildings in case of fire. These may be of stationary form in connection with schools, convents, colleges and public buildings. Canvas chutes through which people may slide to safety are detachable and portable, being made of canvas in the form of a tube, one end to be connected to the window sill. To prevent jamming at the bottom, never use a chute that is too long for the descent and in

descending use the elbows as a brake to prevent too rapid a drop. Take off boots, if time permits, in order that the canvas of the chute may not be ripped.

Ropes may also be used as fire escapes, after first being secured to heavy pieces of furniture, pipes or hooked to the sill. Special care should, however, be taken in the use of rope fire escapes in order to avoid accident. The legs need to be twisted around the rope to prevent slipping and it is better to have a corner of your coat or some other clothing in either hand to avoid skinning or burning your hands on the rope.

#### **Jumping Sheets**

Jumping sheets are carried by all efficient fire brigades but in smaller centres and in the country places occasions may arise where a proper jumping sheet is not available and rescues must be effected. Two or three blankets held taut by a number of people will be sufficient to break the fall, at least, of anyone jumping from the windows of burning buildings. Hay, straw or some other soft material should be placed on the ground immediately under the net.

#### **Fire Extinguishers**

Fire extinguishers are found in many public buildings, factories and schools and it is a Scout's duty to become familiar with the manner of working them in case of fire. The most commonly used fire extinguisher is one containing water, bicarbonate of soda and acid. This is used by turning upside down, causing the acid and alkaline liquid to mix and flow at high pressure. Care should be taken in storing this kind of extinguisher for use. It should not be placed near a radiator or stove or the heat causes the water to evaporate. It should be inspected at intervals and re-charged every six months.

#### **Bucket Brigades**

Where there is no fire brigade it then becomes necessary to form a bucket brigade. This should be made up of two lines of people, one line for passing buckets of water from a well, river, stream, creek, etc., to the fire and the other for returning empty buckets for more water.

#### **Rescuing Animals**

Animals, as a rule, particularly horses, get so overcome with terror in a burning building that they will do nothing to save themselves. If a horse is struggling to get loose it is best to

watch your chance and rush past him in his stall to his head. There you have a fairly good chance to handle him. Untie or cut his halter strap close to the manger, then back him out. Throwing your coat or a horse blanket over his head so as to blindfold him, may make it easier to get him out.

### How to Extinguish Oil, Tar, or Gasoline on Fire

Don't use water because instead of putting it out it will spread it. Use sand, earth, ashes or anything to smother it out.

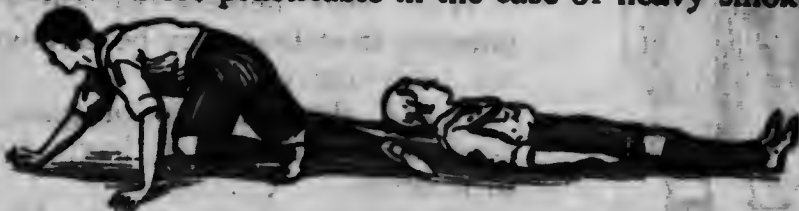
### Clothing on Fire

If your own clothing should catch fire do not run for help, as this will fan the flames, but call for assistance to anyone within reach of your voice. Lie down at once and crawl to the nearest rug, blanket or other covering in which to wrap yourself and smother the flames. If no covering is at hand roll over slowly on the ground and beat the fire with your hands.

If you find a person with his clothes on fire you should throw him flat on the floor, because flames only burn upwards, and then cover him up in a rug, blanket or coat, taking care in doing so that you don't catch fire yourself. Remember that woollen material is much less inflammable than cotton and that flannelette, in particular, is highly inflammable.

### Rescue of Insensible Persons

When you find an insensible person (and sometimes in their fright they will have hidden themselves under beds and tables, etc.) you should either carry him out on your shoulder, or, what is often more practicable in the case of heavy smoke, gas



How to haul an insensible person out of danger.

fumes, or in battle when under heavy fire, etc., harness yourself to him with sheets or cords and drag him out of the room along the floor, crawling on all fours yourself.

To do this you make a bowline (see p. 140) at each end of your rope, put one over the patient's chest and under his arms and the other over your own neck; then with your back to his

head start on all fours to pull him along, head first. The bow-line should be made the right length so that it will keep his head up off the ground, as shown in the accompanying illustration:

### The Fireman's Lift

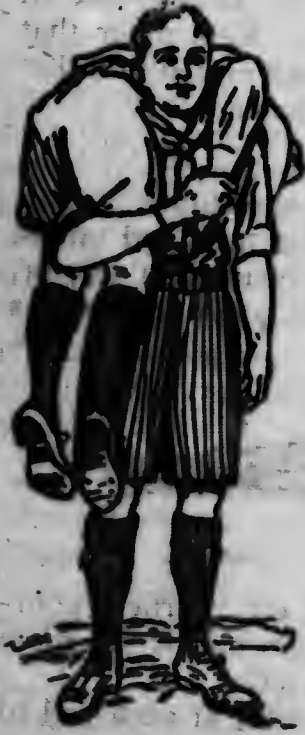
Also practise the "fireman's lift" for getting an insensible person on your shoulders. To do so turn the patient on his face, raising him into a kneeling posture. Kneel and place yourself across and under him, so that his stomach rests on your right shoulder. Pass your right arm between his legs and behind his right thigh.



The Fireman's Lift, Fig. 1.

—By Courtesy of the Boy Scouts of America.

With your left arm draw his right hand forward under your left, and grasp the wrist with your right hand, then raising yourself to an erect position. This is called the "fireman's lift."



The Fireman's Lift,  
Fig. 2.

### Improvised Stretchers

With two helpers to carry the patients stretchers may be arranged in the following ways:

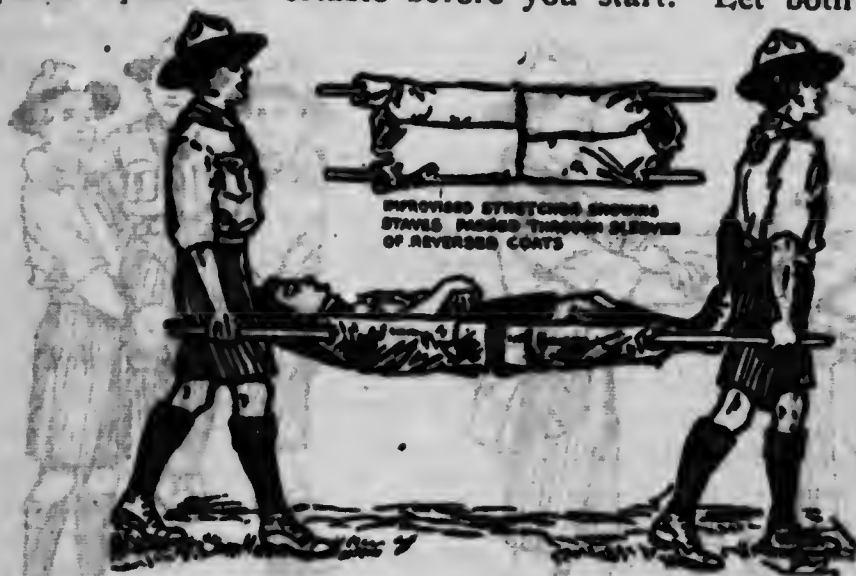
(a) A shutter, door or gate, covered well with straw, hay, clothing or packing.

(b) A piece of carpet, blanket, sacking, tarpaulin, spread out, and two stout poles rolled up in the sides; use clothes for a pillow.

(c) Two coats, with the sleeves turned inside out; pass two poles through the sleeves and button the coats over them.

(d) Two poles passed through a couple of sacks, through holes at the bottom corners of each.

In carrying a patient on a stretcher be careful that he is made quite comfortable before you start. Let both bearers



Improvised Stretcher

—By Courtesy of the Boy Scouts of America.

rise together; they should walk out of step, and take short paces. It should be the duty of the rear bearer to keep a careful watch on the patient. If the poles are short four bearers will be necessary, one at each corner of the stretcher.

Another method of carrying a patient by two bearers, known as the chair carry, is shown in the opposite illustration.

#### WATER ACCIDENTS

Drowning is said to be the commonest single cause of accidental death. In the Province of Ontario alone 347 of the 1,896 deaths which occurred in 1914 from accidental causes were due to drowning. It is, therefore, most important that every Scout should become a good swimmer and also learn how to save others from drowning. In water accidents, as in so many other cases, the old precept holds good that "prevention is better than cure."

Scoutmasters before attempting to give instruction in swimming or rescue work should post themselves fully on these subjects. Several books and booklets containing these directions are listed on page 631.

Canoes and light boats are not intended for heavy seas. Be careful not to change seats except in a wide and steady boat. Above all, do not make an idiot of yourself by rocking the boat.



Fig. 1.

The Chair Carry.



Fig. 2.

Fig. 1. illustrates the position of the hands; Fig. 2. the chair in use.

Every Scout should endeavour to become acquainted with the capacity of boats and launches, the colours and use of lights and the drills that are practised on steamships.

#### Life Lines

In many cases, where someone has fallen into the water, a life preserver or line may be used to advantage without endangering others' lives and it is a wise precaution to have a life preserver and rope available for instant use in emergencies in camps and other localities where water accidents are liable to happen. If there is no life line at hand and you are yourself unable to swim you may at least be able to throw something to the drowning person to support himself on until further aid is procured.

Life lines should be properly cared for, as often valuable time is lost through a line being badly coiled, or too tightly tied. A life preserver is attached to one end of a prepared life line.

The line should be coiled, with one coil on top of the other and in case of use capsized; that is to say, the whole coil is turned over with the running part underneath. When throwing the line, the rope should be thrown over the person to be rescued, and if any hard object is attached to the end care must be exercised that the person in the water is not hit. If the shore end of the line is not fastened to a post or other object, it is better to tie it around your wrist or body to guard against the possibility of its slipping away from you. If there is a current at the point where the rescue is being attempted, throw the line above the person, allowing it to float down to him. Scouts should practise throwing the line over a dummy, till they are sure of their aim.

Swimming is one of the very best of sports and exercises. Every boy, indeed, should be taught how to swim. It is no more difficult to learn swimming than to learn bicycling. There are various methods of instruction. But if you have no one to help you one of the easiest ways to learn is to paddle along dog fashion before attempting the ordinary breast or other stroke.

#### Avoidance of Unnecessary Risks

Remember that the sudden application of cold to the heated body is apt to induce cramps in the feet, legs, thighs, abdomen or arms and that cramps may also come from contact with cold spring water or from remaining in the water too long. Unless you are a strong swimmer do not go outside the life line at the sea shore and when the undertow is strong be careful not to walk out into water so deep that it may carry you off your feet. When you are out with your patrol be scrupulously particular in conforming to your officer's directions.

Discretion in methods of rescue is more worthy of recognition than needless risking of one's own life. Use a boat whenever possible. Any of you who cannot swim and who fall into water beyond your depth, remember that you need not sink if you take care to do the following things: first, keep your mouth upwards by throwing the head well back; second, keep your lungs full of air by taking long breaths and breathing out very little; third, keep your arms under water. To do this you should not shout unnecessarily which will quickly empty your lungs, and you should not throw your arms above your head, else you will sink.

If there are floating logs in the water where an accident

occurs good use can often be made of these in helping oneself or another person to shore. Round logs have a tendency to roll in the water if they are grasped only from one side, so a good plan is for the rescuer to keep on the other side of the log from the person whom he is helping and, if possible, to clasp the latter's hand over the top of the log.

One often hears it said that a drowning person must rise to the surface three times before finally sinking to the bottom. This is incorrect. It depends on circumstances whether the victim comes to the surface at all after once going down. Ordinarily a drowning person struggles until insensibility occurs, when the body sinks on account of the loss of air and the filling of the stomach with water. In attempting a rescue, therefore, it is most important to act promptly or the victim may sink before you can reach him.

#### Training for Life Saving

A moderate swimmer can save a drowning man if he knows how and training will enable a small boy to rescue a grown-up person. Understand, though, that this cannot be done without practise. The secret of life-saving is to make the water carry the weight as far as possible. A very slight effort in the water will suffice to keep either yourself or another afloat and the body of an unconscious person can often be brought up from the bottom in reasonable depths with comparatively little effort and consciousness restored through well directed efforts on shore. In salt water the human body weighs less than it does in fresh water.

An important point is not to let the drowning one catch hold of you or he will probably drag you down with him. The best way in helping a drowning person is to keep behind and hold him up by the elbows or by the back of the neck or by placing both of your arms under his armpits and across his chest. Tell him to keep quiet and not to struggle. If he obeys you can easily keep him afloat; otherwise, be careful that in his terror he does not turn over and catch hold of you.

If there is no current where the accident has occurred, bubbles on the surface will indicate the exact location of the body beneath. If there is a tide or current the rescuer must go down from the spot where the person disappeared and look along the bottom, swimming with the current. From the foregoing it will be seen that the rescuing of drowning persons is



apt to be attended with grave danger to the rescuer, unless the latter has had previous instruction and practice in life-saving.

In attempting a rescue it is most important to keep the face of the one who is being helped above water. Avoid all jerking, struggling or tugging, but swim with a regular, well timed kick of the legs, husbanding strength for continued effort.

In carrying a person through the water it will be of much advantage to keep his elbows well out from the sides, as this expands the chest, inflates the lungs and adds to his buoyancy. The legs should be kept well up to the surface, the whole body being as horizontal as possible. Rescuers should at all times be governed by circumstances, using their judgment as to which method they shall adopt in conveying the drowning one to shore, taking care to avoid wasting their own strength needlessly against an adverse tide or stream, but rather floating with it and gradually making for shore; or else waiting until a boat or other aid may arrive.

#### Methods of Rescue from Drowning

The following methods of rescuing drowning persons are recommended by the Royal Canadian Humane Association:

**FIRST METHOD:** Provided the drowning person is not struggling, turn him on his back, and place your hands on either side of his face. Then turn on your back, hold him in front of you and swim backward using your feet, taking care to keep his face above the water.

**SECOND METHOD:** In the event of much struggling rendering the drowning person difficult to manage, turn him on his back and take a firm hold of his arms just above the elbows. Draw the arms upward at right angles to the body and swim with the back stroke. This hold will put the drowning person under the control of the rescuer, who can thus prevent him from turning round or clutching.

**THIRD METHOD:** If the arms be difficult to grasp or the struggling so violent as to prevent a firm hold, slip your hands under the armpits of the drowning person and place them on his chest or round his arms. Raise them at right angles to the body, thus placing the drowning person completely in your power. Then turn on your back and swim with the back stroke.

**FOURTH METHOD:** This method may be used in rendering assistance to a swimmer attacked by a cramp or exhausted, who will be obedient and remain quiet. The person to be

assisted must lie quietly upon his back, face upwards, perfectly still, and place his hands on the shoulders of the rescuer, close to his neck, with the arms at full length and the head



First Method.



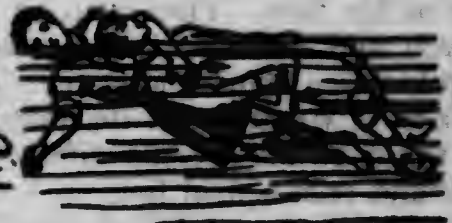
Second Method.



Third Method.



Fourth Method.



Fifth Method.

—By Courtesy of the Boy Scouts of America.

Methods of life saving in the water—showing different holds and positions.

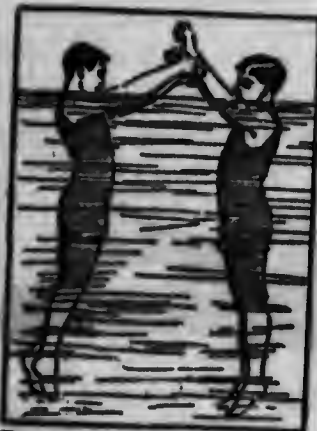
thrown well back, the rescuer being uppermost and having his arms and legs free, swimming the breast stroke. This is the easiest known method of rescuing, as the rescuer can, without undue exertion, carry a person a much longer distance than by any other method.

**FIFTH METHOD:** This method enables the rescuer to use one arm in addition to his feet. The rescuer passes his left arm

over the shoulder of the one to be rescued, after approaching from behind, then gets a hold under the other's right arm. The drowning person is rendered helpless and the rescuer's right arm left free for swimming.

### Breaking "Death Grips"

Anyone attempting the rescue of another from drowning should know how to save himself from the "death grips" of the drowning man.



Break for wrist hold.



Breaks for strangle hold.

—By Courtesy of the Boy Scouts of America.

**FIRST METHOD:** If the rescuer be held by the wrists, turn both arms simultaneously against the drowning person's thumbs, outwards, and bring the arms at right angles to the body, thus dislocating the thumbs of the drowning person if he does not let go.

**SECOND METHOD:** If clutched round the neck, take a deep breath, lean well over the drowning one, immediately place the left hand in the small of his back and pass the right hand over his face, and with the thumb and forefinger pinch the nostrils close. At the same time place the palm of the hand on the chin and push it away with all force possible.

**THIRD METHOD:** If clutched round the body, lean well over and proceed as in the case of the second method, at the same time lifting the right knee and placing it as high as possible against the abdomen. Then, by means of a strong and sudden push, stretch the arm and leg straight out, throwing the whole weight of your body backwards. This sudden motion will break the clutch and leave the rescuer free.

**To Revive the Apparently Drowned**

1. When the body is recovered from the water do not attempt to loosen or remove clothing, but immediately proceed to perform Professor Schafer's method of artificial respiration.



Schafer method—first position

2. Lay the patient in a prone position (*i.e.*, back upwards) with head turned to one side, so as to keep his nose and mouth away from the ground. No pad is to be placed under the patient, nor need the tongue be drawn out, as it will fall naturally.



Schafer method—second position

3. Kneel astride the patient, and place the palms of your hands on his lowest ribs, one at each side, the thumbs nearly touching one another in the small of the back. Lean your body forward, slowly apply firm but not violent pressure twelve times per minute straight downwards upon the back and lower part of the chest, thus driving air out and producing expiration. Draw back your body somewhat more rapidly and relax the pressure, but do not remove your hands; this produces inspiration.

4. Alternate these movements by a rhythmic swaying backwards and forwards of your body, twelve to fifteen times a minute, persevering until respiration is restored, or a doctor pronounces life to be extinct.

5. Induce circulation and warmth after natural breathing has been restored. Wrap the patient in dry blankets or other covering and rub the limbs energetically towards the heart. Promote warmth by hot flannels, hot water bottles, or hot bricks (wrapped in flannel) applied to the feet, to the limbs and body. No liquid should be given to the patient while he continues in an unconscious state as unconscious persons are unable to swallow. When the power of swallowing has returned hot tea or coffee may, however, be given or meat extract. The patient should be kept in bed and encouraged to go to sleep. Large poultices or fomentations, that is to say cloths dipped in hot water, applied to the front and back of the chest will serve to assist breathing.

6. Watch the patient carefully for some time to see that the breathing does not fail; should any signs of failure reappear, at once begin artificial respiration.

#### ICE ACCIDENTS

If the case be one of a mid-winter accident, in which someone has broken through the ice, it is important to remember that ice which gives way under one person's weight is not likely to support another's. If you should yourself break through you are apt to find that the surrounding ice will likely sink under you as you attempt to climb out. When rescuers are close at hand it is safer to support yourself on the edge of the ice and wait for them to assist you.

The Royal Canadian Humane Association recommends an appliance in the form of a line with a large wooden ball attached (shown in the accompanying illustration), which is

thrown along the ice to any person who has broken through.



Life line  
for ice accidents.

A rope alone will, however, often serve the purpose required. Anyone attempting to reach a person who has broken through the ice should have a rope around his body in order to ensure his own safety and the other end tied or held on the shore. If he can, let him lay hold of a long board or limb of a tree to support his weight and in any case, lie down flat upon his face and crawl out, whether on the board or otherwise, as by so doing there is less weight bearing on the ice

at any one point than in walking.

#### RUNAWAY HORSES

Accidents are of frequent occurrence from runaway horses knocking down or running over people. It is well, therefore, that Scouts should know how to stop a runaway and thus save numerous cases of injury. Several awards have already been made to Canadian Scouts for gallantry in bringing runaway horses to a stop.

The most effective way of checking a runaway is to run alongside, catch hold of the shaft to keep yourself from falling, and seize the reins with the other hand and drag the horse's head round towards you, so turning him until you can either bring him up against a wall or fence, or otherwise compel him to stop. As a rule it is of little use rushing out into the road and swinging your arms if the case is one of a dangerous runaway. Sometimes, indeed, this only makes matters worse. If the case is one of a runaway team it is necessary to get into the vehicle and grasp the reins. But, of course, either of these methods of checking runaway horses is not without risk to the rescuer and should not be attempted by inexperienced small boys.

#### FIRST AID DIRECTIONS FOR VARIOUS EMERGENCIES

##### General

It is not the purpose of the Scout training to make boys into amateur doctors, but rather to teach them what to do for themselves and others in connection with the simple accidents and ailments which are so commonly encountered, and how to administer, if necessary, first aid in connection with more

serious occurrences whilst waiting for the doctor to arrive. Young Scouts should first be taught what to do in everyday simple accidents, such as small burns, cuts, bruises, grit in the eye, fainting, choking, stings, blisters, sunstroke, etc., before taking up the more advanced features of the first aid training.

The very first thing to be done in any serious accident is to telephone or send a messenger for a doctor, stating the nature of the case. Don't wait, however, until he arrives to do anything you can for the injured person. If the patient is unconscious, lay him on his back so that he does not choke, and with his head a little on one side so that any vomit or water, etc., can run out of his mouth. If the patient's face is flushed raise the head slightly on a pillow. A folded coat will do for the purpose. If the face is pale it is better to keep the patient on his back with his head low. A restful position assists recovery. Loosen the clothing about the neck and chest. See where the patient is injured, and treat him according to the directions contained in this chapter.

If you have found a person lying insensible you should carefully examine the ground round about for any "sign" and take note of it and the position of the body, etc., in case it should afterwards appear that he had been attacked by others.

If you are out with a patrol and an accident happens, or you find an injured man, the Patrol Leader should direct one Scout to go for a doctor whilst he himself attends to the patient with another Scout to help him. The Second will, if necessary, use the other Scouts in assisting by getting water or blankets or making a stretcher; or, if it be in the street, by keeping the crowd back so that the sufferer may have plenty of fresh air. If breathing ceases, prompt measures should be taken to restore it. (See directions for artificial respiration, p. 438.)

As a rule it is best to keep the patient quite quiet at first. Unless it is necessary, do not move him or bother him with too many questions. If the nature of the accident or injury is not quite clear take time to find out, if you can, exactly what is the matter in order that your first aid measures and the doctor's subsequent treatment may be intelligent.

Whenever the case is one of poisoning or of severe bleeding, common sense will itself suggest the need of prompt action.

The cause of the injury should at once be removed, whenever this is possible.

Poisons swallowed should be got rid of, or, if this is inexpedient, neutralized. (See treatment for poisoning, p. 459.)

Severe bleeding should receive the first attention, no matter what the other injuries may be.

Clothes should not be taken off unnecessarily as it is important to keep a patient warm after the occurrence of an accident.

It is safer to defer the administration of an alcoholic stimulant until the arrival of a doctor. If the patient is able to swallow, strong tea or coffee, or milk, as hot as can be drunk, may be safely given or a little sal volatile (aromatic spirits of ammonia) in water. Smelling salts may also be held to the nose. Sprinkling the face with cold and hot water alternately, warmth applied to the pit of the stomach and over the heart, and vigorous rubbing of the limbs upwards have a stimulating effect. Do not give an unconscious person anything to drink as one is unable in this state to swallow and the drink may cause choking.

It is, of course, impossible in the space at our disposal to give here complete directions in first aid. This would require a book for itself. Scouts or patrols who are desirous of specializing in this work will find on page 622 a list of books which will be helpful to this end.

The following notes, alphabetically arranged, cover briefly the requirements for the Second and First Class Scout badges.

### **Bandaging**

Triangular bandages, of the forms shown in the accompanying illustrations, are the ones generally used for first aid purposes on a wound, burn or scald on any part of the body, or for an injury of a joint. If other materials are not available the Scout neckerchief, folded diagonally, will serve, but care must be taken to see that the neckerchief does not come in contact with a wound as the dye might cause blood poisoning. In emergencies, bandages may also be made from handkerchiefs, belts, straps, braces, neckties, or from any piece of linen, cotton, string or cord that comes to hand. Where the bandage is being applied directly to a wound it is most important that whatever material is used should be perfectly clean. Reef knots, in the form shown in the accompanying illustration, are always used when fastening bandages. Avoid granny knots.





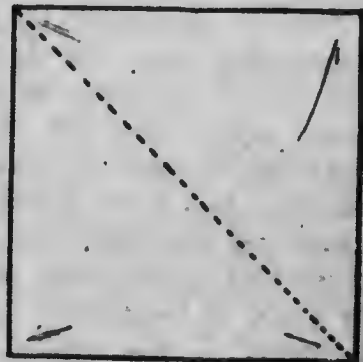
Granny knot



Reef knot

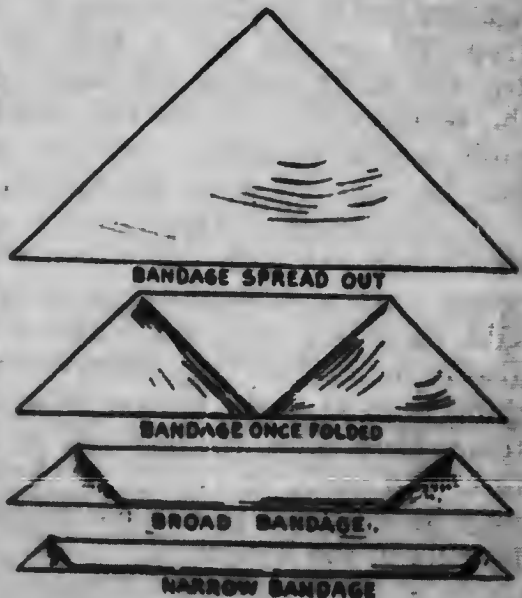
The triangular bandage is made by cutting a piece of cotton or linen, forty inches square, into two pieces crosswise. This will form two bandages.

It is used open, or as a broad bandage or a narrow bandage. To make a broad one spread out the bandage, bring the point over to the base, then double it over again. By again doubling over a narrow bandage is formed. The bandage should be carried folded narrow.



Bites

**MAD DOGS.** — Scouts should know how to tell mad dogs by their behaviour and what to do when there is one about. Dogs, like other creatures, sometimes take convulsions and fits. These are, however, very different things from the contagious and incurable disease known as rabies or madness. Dogs affected with rabies become surly and inclined to wan-



der. Their accustomed bark changes into a half howl. Instead of eating their usual food they will eat filth or gnaw at wood work. The common belief that they are afraid of water is apparently without foundation, as is also the belief that they are always frothing at the mouth. We are informed, on reliable authority, that this dread disease never arises spontaneously, or from thirst, lack of proper food or cruelty. Nor is its occurrence limited to any particular season of the year, being as common in the winter as in the so-called "dog days" of midsummer.

The only thing to do with mad dogs is to destroy them as soon as the disease is discovered. They have a perfect mania for biting and, although some dogs and persons suffer no evil effect from being bitten, the bite is liable to produce a violent and horrible death, either in man or beast.

**Treatment.**—Fortunately there is a specific treatment known as the Pasteur treatment by which the evil effects of the bite of a mad dog may be prevented. In all cases of bite pressure should at once be applied to the part affected, between the wound and the heart, so as to prevent the poison being carried through the system. That is to say, if a finger for instance, has been bitten it should be encircled between the thumb and first finger of the other hand on the side of the wound nearest to the heart and held until a ligature (a string, tape or piece of handkerchief) is tied tightly around the root of the finger. If the wound is in the face or chest, where no ligature can be applied, it may be sucked. Encourage bleeding from the wound for a time by keeping the injured part low and bathe with warm water. If it is impossible to obtain the services of a doctor the wound should be burned with a fluid caustic or with a red hot wire or fusee. The ligature may be removed when the caustic has been applied.

**SNAKE BITES.**—Happily the snakes found in different parts of Canada are with one exception, the rattle-snake, which is found only in certain parts, quite harmless. What has been said regarding first aid treatment for rabid animals applies also to the case of bites from venomous snakes. The important thing is to keep the poison from being absorbed into the system. Most bites are received in the legs or arms where ligatures can easily be applied to check the circulation. The bites may be squeezed to extract the poison, or sucked if there are no cuts in the mouth.

**Bleeding**

Some people turn sick at the very sight of blood. Scouts, however, must learn to keep their wits about them in order that they may act promptly and with good judgment.

There are three kinds of external bleeding or hemorrhage, viz.: arterial bleeding (from an artery), venous bleeding (from a vein), and capillary bleeding (from the capillaries). Arteries are vessels which convey blood from the heart. Veins carry blood back to the heart. The capillaries are smaller vessels connecting the arteries and veins.

In most cuts the bleeding is from a capillary and is easily controlled by the pressure of a bandage. The blood may flow briskly from a capillary in a continuous stream or merely ooze from the wound. It is red in colour.

Any foreign bodies seen in a wound such as broken glass, bits of clothing, hair, etc., should be removed. Do not, however, search for foreign bodies you cannot see.

Bleeding from an artery or vein is more dangerous than capillary bleeding and more difficult to check.

**BLEEDING FROM A VEIN.**—If the bleeding proceeds from a wounded vein the blood is of a dark red colour and flows in a slow, continuous stream from the side of the wound further from the heart. For bleeding from a vein the part should be elevated as thereby less blood finds its way into it. Any tight fitting article of clothing such as a collar or garter on the heart side of the wound should be removed. Pressure should then be applied to the wound with the thumb and fingers until you can apply a pad and tight bandage. If this does not stop the flow of blood, pressure should be applied near the wound on the side away from the heart.

**ARTERIAL BLEEDING.**—If it is an artery that has been cut the blood is bright scarlet in colour and if the wounded artery is near the skin the blood spurts out in jets corresponding to the pulsation of the heart.

The Scout training for the Second Class badge comprises instruction in the checking of severe bleeding and how to dress a wound.

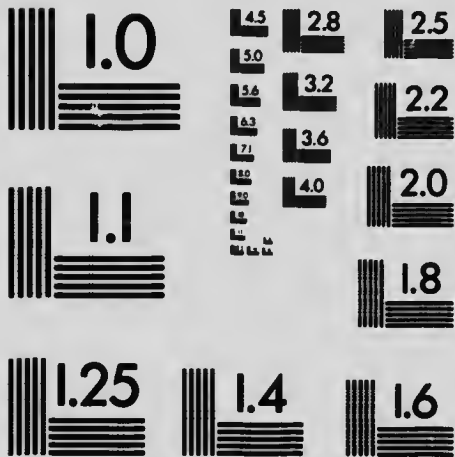
Pressure is employed in the case of all external wounds to stop loss of blood. Sometimes the only pressure required is that of a bandage or of a bandage and pad underneath.

If at all possible one's fingers should be kept out of the wound on account of the risk of infection.



# MICROCOPY RESOLUTION TEST CHART

(ANSI and ISO TEST CHART No. 2)



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BONES.

ARTERIES.

The numbered dots show pressure points for the arteries. Compare numbers in text

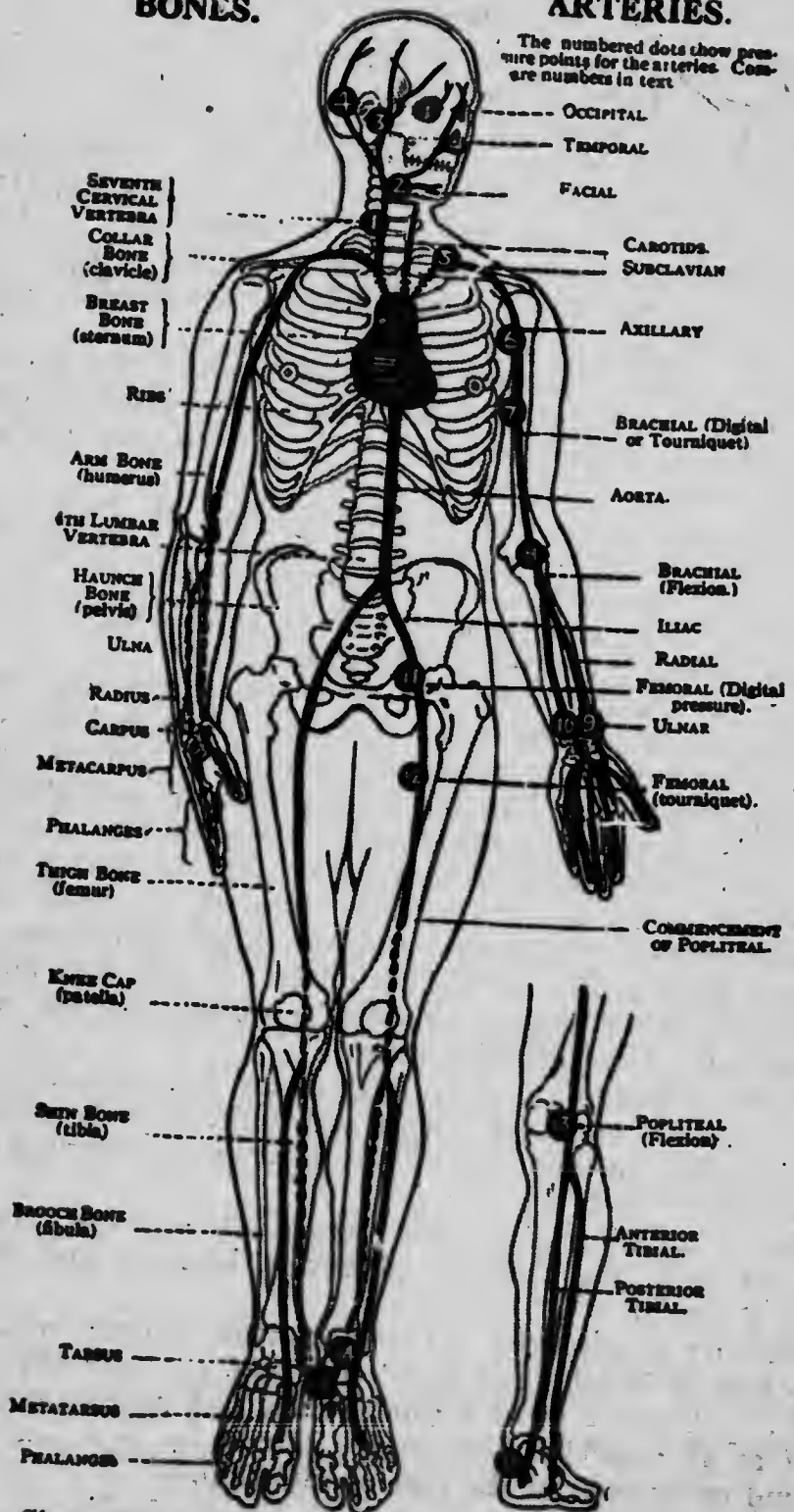
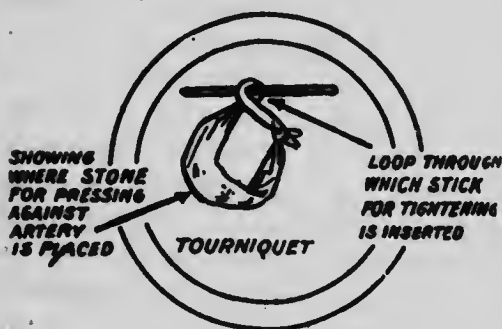


Chart illustrating bones, arteries and pressure points.

In arterial bleeding it is often necessary to apply pressure on the side of the wound nearer the heart over a pressure point. The clothing should be loosened. It will also help matters to raise the part affected as high as possible above the level of the heart. You can often feel an artery beat under your fingers and the bleeding below will stop when the pressure is properly applied.



age on the side of the wound the flow comes from a vein.

Always raise a bleeding limb.

A tourniquet can be applied to the arm or leg. In order to stop arterial bleeding from wounds elsewhere in the body one must apply the direct pressure of the thumb and fingers or of a pad on the injured artery, if it can be reached.

If you are not alone on the job another fellow can prepare the tourniquet by tying a handkerchief loosely around the patient's arm or leg at the point shown in the accompanying illustrations. A pad or smooth pebble should be placed on the artery. When this is done a stick is slipped under the handkerchief and twisted until the bandage tightens sufficiently to stop the flow of blood through the artery. The stick may be secured to the limb to keep it from untwisting. The pad of the tourniquet should be accurately placed on the pressure

**THE TOURNIQUET.** — If the bleeding cannot be stopped by firm pressure with the thumb and finger a tourniquet, (which is a pad and bandage applied over a pressure point) must be applied, above the wound over a pressure point, in a case of arterial bleeding, or by circular compression with a firmly applied band farther from the heart if



Tourniquet applied to leg

point so as to completely compress the artery; otherwise arterial blood will be allowed to pass along the limb and the being compressed will not allow the return of the blood to the heart with the result that dangerous swelling and congestion may occur.

*Warning.*—A tourniquet should not be allowed to remain tight longer than twenty minutes. If the doctor has not arrived by that time it should be loosened, but left on in a way that it can be re-tightened if the bleeding starts again.

Scouts need to know the course of the larger arteries in order to know where to press on them. The illustration appearing on page 446 shows the various arteries of the human body and the points known as pressure points at which pressure may be effectively applied. In the leg the artery descends about in line with the inseam of the trousers from a point midway between the hip and the crotch. The point in the leg at which to apply a tourniquet or other pressure is situated about three inches below the crotch, as shown in the illustration on page 446. The course of the large artery in the arm is down the inside of the large muscle of the upper arm, about a line with the seam of the coat sleeve. The point in the arm at which to apply a tourniquet is marked "seven" in the illustration appearing on page 446.

**INTERNAL BLEEDING.**—Wounds of the blood vessels within the body cause bleeding into the cavity of the chest or of the abdomen.

An internal hemorrhage is easily recognized by rapid loss of strength, giddiness and faintness (especially when the patient is in an upright position); by hurried and laboured breathing; by the face and lips becoming very pale, and by the gradual failure of the pulse until the patient becomes unconscious.

In the treatment of internal hemorrhage keep the patient lying down and undo all tight clothing around the neck. See that there is a free circulation of air, if necessary by fanning the patient; sprinkle cold water on the face; hold smelling salts to the nostrils, and avoid stimulants until the hemorrhage has been controlled. Give ice to suck or cold water to drink, and, if the seat of the hemorrhage is known, apply an ice bag over the region. Inspire confidence in the patient. Do not show alarm.

Hemorrhages of the lungs and stomach are treated as internal hemorrhages. In stomach hemorrhage nothing is to be given, however, by the mouth.



*Note.*—Always send for a doctor, remembering that first aid is only an emergency helping of matters.

**NOSE BLEEDING.**—For bleeding from the nose place the patient in a sitting position before an open window, with the head thrown slightly back and the hands raised above the head. Undo all tight clothing around the neck and chest and apply cold applications of ice, a cold sponge or bunch of keys over the nose and back of the neck. If necessary, place the feet in hot water. Cause the patient to keep his mouth open and so avoid breathing through the nose.

### Bruises

A bruise is caused by a blow anywhere on the surface of the body, which may cause bleeding beneath the skin, without breaking it—a “black eye” is an instance. The injury caused by a bruise is accompanied by discolouration and swelling.

*Treatment.*—Apply ice or cold water dressings. A piece of lint soaked in extract of witch hazel may be placed on the affected part.

### Burns and Scalds

Burns may be caused by fire or touching a hot iron, by touching a “live” electric wire, by friction through contact, for example, with a revolving wheel, or by touching certain chemicals. Scalds are caused by moist heat, such as boiling water, hot oil or tar. The effect may be a slight reddening or blistering of the skin, or the affected parts may be burned and blackened. The great danger in connection both with burns and scalds is often that of shock (see p. 461.)

*Treatment.*—If there is anything over the injured part it should be carefully removed. If stuck to the skin it should be cut around with scissors, soaked with sweet oil and left to come away later. Blisters should not be broken. The injured part should not be left exposed to the air, but should be covered up at once by a linen or cotton dressing soaked in or smeared with sweet oil, vaseline, lanoline or cold cream. A small quantity of boracic powder sprinkled on the dressing will also be found helpful. The inside of a raw potato scraped out and spread on the dressing has a soothing effect and may be used in emergency. If it is possible the injured part should be bathed in water of blood heat until the dressings have been prepared. A dessertspoonful of baking soda in the water adds to the soothing effect.

Burns on the face are treated by applying a cotton mask in which holes are cut for the eyes, nose and mouth.

If the burn is caused by a corrosive acid the injured part should be bathed with a weak alkaline solution, such as made by dissolving washing soda, baking soda or slaked lime in water.

If the burn is caused by a corrosive alkali, such as lye, it is helpful to bathe the injured part with a weak acid solution, such as vinegar or lemon juice, diluted with an equal quantity of water. If the skin is broken over a large surface cover it with one large dressing but cut up the dressing into strips about the width of one's hand. When the oily dressing has been applied it should be bandaged firmly but not too tightly to keep it in place.

#### Choking

Choking is something which requires quick treatment, and in every case be one of a serious nature. Usually the sufferer tries to dislodge the obstruction from the throat by coughing or gagging to reach it with a finger. If the obstruction is large enough to block the wind-pipe and is not removed the patient becomes unconscious and black in the face and quickly loses consciousness.

*Treatment.*—Loosen the collar, try to pull out the obstruction with forefinger, handle of spoon, or other object. Sometimes two or three hard blows on the back will dislodge the obstruction. For bone in the throat, eat doughy bread. If a sharp object has been swallowed, give castor oil; if sharp objects are present, give crusty bread to eat. If the substance is in the wind-pipe send for a doctor at once. Hold the patient upside down and this may dislodge it. If breathing ceases before the obstruction is removed artificial respiration should be applied. (p. 438.)

#### To Promote Circulation

After rescue from drowning promote warmth and circulation by means of friction with flannels, handkerchiefs, etc. This causes the blood to flow along the veins towards the heart. Gently rub the patient's face, neck and arms. Friction along the legs, arms, and body should be towards the heart, and continued after the patient has been wrapped in blankets or dry clothing. Whenever possible, get assistance and give your directions carefully. As soon as possible, remove the patient to the nearest house, and apply

hot flannels to the stomach and heated bricks or bottles of hot water to the armpits, between the thighs, and to the soles of the feet. Warmth *must* be promoted. If the breathing is difficult or painful, apply a hot linseed-meal poultice to the chest. When breathing is restored, give a teaspoonful of warm water. If the patient is able to swallow properly, give very small quantities of warm brandy-and-water, beef-tea or coffee; keep him in bed, and encourage him to sleep. Watch him well and should it be noticed that the natural breathing is failing, at once resume artificial respiration. Let the air circulate freely about the room, and do not allow crowding around the patient.

#### Concussion

Concussion of the brain follows a violent blow on the head, direct or transmitted. (See Unconsciousness, page 462.) Keep the patient quiet. Do not attempt to arouse.

#### Convulsions

Teething and stomach trouble sometimes produce what are known as convulsions among children, which are marked by spasms of the muscles of the limbs and body, blueness of the face, insensibility and occasionally by squinting, suspended breathing and froth at the mouth.

*Treatment.*—The treatment for this ailment is to place the child in water slightly above blood heat so that the water will come up to the middle of the body. At the same time a sponge or cloth dipped in cold water should be applied to the head. Care needs to be taken to avoid scalding the child's body with too hot water in the bath.

#### Cramps or Stomach Ache

This is ordinarily caused by irritation through the presence of undigested food, although it is occasionally due to a more serious cause. The undigested matter should be got rid of by vomiting or physic. Rubbing the affected part or placing a hot water bottle against it will often relieve the pain. Peppermint in hot water and ginger-tea are other common remedies. If the pain continues for some time it is better to send for a doctor.

#### Dislocations

In a dislocation there is a displacement of one or more of the bones at a joint such as the shoulder, elbow, finger, knee or jaw. When a joint is dislocated there is severe swelling, pain and inability to move the joint.

*Treatment.*—Cold water should be applied to the injured joint and when this ceases to give comfort resort should be had to cloths wrung out in hot water. The dislocated joint should be supported in whatever position gives the most comfort and the doctor summoned to set it. It is not wise for anyone but a doctor to set a joint.

#### Ear-Ache

Hot cloths, a hot-water bottle or a bag of heated salt applied to the ear will often cure ear-ache. The fumes from a few drops of alcohol on a hot cloth held close to the ear will sometimes give relief. If the aching continues put a few drops of sweet oil, as hot as you can stand it, into the ear and plug the ear with cotton. Be careful not to have the oil too hot. Ear-ache is liable to prove serious and a doctor should be consulted in order to avoid risk of possible loss of hearing.

#### Object in the Ear

Don't push anything down the ear to poke the object out. This is very dangerous. To get an insect out, lay the patient on his side, the affected ear uppermost, and pour in slightly warmed water, which will bring the insect up to the top. To get out an object, such as a pea, hold the affected ear downwards and shake the head. If this does not bring it out, send for a doctor. It is dangerous to attempt to syringe the ear unless you have had experience. If the sufferer is a child the hands should, if necessary, be tied to prevent the fingers being thrust into the ear passage.

#### Epilepsy. (See Fits).

#### Object in the Eye

One is always tempted to rub the affected eye. To do so, however, will only make things worse. Sometimes rubbing the other eye will cause the tears to wash the object out. Pull down the lower lid and if the foreign body is seen it can easily be removed with the corner of a wet handkerchief. If the trouble is lodged under the upper eyelid, the lid should be lifted forward, whilst the lower lid is at the same time pushed up beneath it and then let go. The hair of the lower lid will usually dislodge the obstruction. Repeat this attempt if necessary. If the foreign body is not dislodged it is better to summon a doctor immediately. Close the eyelid and apply an unfolded handkerchief very gently thereto until the doctor arrives. It will have a soothing effect to drop one or two drops

of any vegetable oil, *e.g.*, castor oil, into the eye. If a doctor's help cannot be obtained the upper eyelid should be rolled back over a match or bodkin, when the foreign body may be found and removed.

#### Fainting

In a case of fainting the victim becomes pale and the skin clammy and cold. The pulse is feeble, the breathing shallow and the victim often falls insensible.

*Treatment.*—Lay the patient on his back with the head low, and raise the legs. Provide for a full circulation of fresh air, if necessary by fanning. Smelling salts may be held to the patient's nostrils or water may be given if he can swallow. Bathe the face and hands with cold water. When consciousness returns give tea or coffee.

#### Fishhook Embedded in the Skin

If a fishhook should become firmly embedded in the skin one may find it difficult to withdraw it by the way it went in. In this case the hook should be cut from the line and pressed through the flesh until it can be pulled out point first.

#### Fits

In an epileptic fit the victim falls unconscious to the ground, sometimes with a piercing scream. The legs and arms twitch and jerk in violent convulsions. The hands are tightly clenched. The face is contorted. Froth, sometimes blood-stained, appears at the mouth. After a few minutes of violent convulsions the patient falls asleep, or recovers consciousness, but may be for a time in a dazed condition.

*Treatment.*—Do not give stimulants, or anything to drink. Undo the collar and tie. Roll a small piece of wood or pencil in a handkerchief, and place it between the back teeth, to prevent the tongue being bitten. Do not attempt to restrain the sufferer's movements, but let him sleep. Prevent him from doing himself bodily harm by removing obstacles, such as chairs, from his vicinity.

#### Fractures

It is required of Second Class Scouts that they shall understand the first aid treatment for a fractured (that is broken) arm bone, forearm, jaw, collar bone or leg. First Class Scouts are required also to understand first aid treatment for fracture of the thigh.

The first thing Scouts must learn in this connection is to distinguish between a fracture, that is a broken bone, and a sprain

or strain. If the case be one of a broken arm or leg the injured member becomes limp and helpless. Pain and swelling occur at the spot where the injury has occurred, but both of these occur also in connection with any severe sprain. Sometimes the position of the arm or leg will be such as to make it quite clear what has happened, or by moving or feeling the bone at the injured point it may be possible to determine whether it is really broken. A grating sensation is felt when the broken ends of the bone are rubbed against each other. Scouts should not, however, attempt to rub the ends of fractured bones together as by so doing they may do further injury. Sometimes the broken limb will show shorter than the other.

When the bone is broken with but slight injury to the surrounding parts it is known as a simple fracture. When the bone has broken through the flesh and skin or when the skin is broken without the bone protruding it is known as a compound fracture. The object of the first aid treatment of fractures is to guard against further mischief and especially to prevent a simple fracture from becoming compound. A fracture should in all cases be attended to on the spot, no matter how crowded the thoroughfare may be where the accident has happened, or how short the distance to a more convenient place. If the case is of a compound fracture accompanied by bleeding, attention should first be given to stop the bleeding and dress the wound. Clothing should only be removed when

there is a wound that cannot otherwise be attended to. In all cases of fracture it is necessary to cover the patient to keep him warm and so lessen the effects of the shock of the accident.



Forearm in splints.

SPLINTS.—If the doctor is not expected at once the injured limb may be drawn into a position corresponding to the sound one and held in position by splints. These may be made of anything stiff and straight. Split shingles make excellent splints. But the Scout staff, limbs off a tree, or even a newspaper rolled up tightly will do. One splint should be put on either side of the limb. A splint should be long enough to go beyond the joints both above and below

the fracture. Something soft, such as folded bandages, cotton, wool, or neckerchiefs should be placed between the limb and the splints.

#### Fracture of Forearm

*Treatment.*—Bend the forearm at right angles to the arm, keeping the thumb upwards and the palm of the hand towards the body. Apply broad splints on the inner and outer sides from the elbows to the finger tips. Apply narrow bandages embracing both splints immediately below and above the fracture and round the hand. Apply a large arm sling.

*To Make a Large Arm Sling* spread out the bandage on the front of the patient's body. Carry the end over the shoulder on the sound side and bring it round behind the neck so that the end just hangs over in front of the shoulder on the injured side. Carefully place the point behind the elbow of the injured limb, then gently bend the limb across the centre of the bandage. Bring up the second end and tie it to the end that hangs in front of the patient's shoulder. The sling thus formed should support the arm so that the little finger is slightly above the level of the elbow. Then bring the point forward and pin it to the front of the bandage.



Large Arm Sling

#### Fractured Arm Bone

*Treatment.* — Carefully place two splints along the injured limb, one inside the arm, the other on the outside. Others may be added in front and behind, care being taken that the end of the splint will not press into the bend of the elbow when the arm is bent.

Secure the splints in position by carrying a narrow bandage around them above the fracture and tying securely. Then carry another bandage round them below the fracture. When this is done apply a small arm sling.



Fractured Arm Bone

*To Make a Small Arm Sling* carry the end of a broad bandage over the shoulder on the sound side round behind the neck and let it just hang over on the injured side. Gently bend the arm and bring up the second end and tie it to the end in front of the shoulder. This sling should support the forearm at the wrist, which should lie in the centre of the bandage. The sling should carry the forearm at a little greater angle than a right angle so that the weight of the forearm is carried by the lower part of the broken arm bone.



Small Arm Sling

#### Fractured Jaw

A fractured jaw gives considerable pain, and can be readily recognized by observing that the patient will probably be supporting his chin in his hand, by the teeth being uneven, by the speech being indistinct, and by a little blood issuing from the mouth.



Fractured Jaw

*Treatment.*—Take a handkerchief and fold it like you would a muffler for the neck, making it about three inches wide. Next tie a knot about four inches from each end, the space between the knots not to be more than nine inches, or less than six inches. Open the fold between the knots and you will find that it forms a pocket. Join it to another handkerchief to give additional length to the first, and place the point of the patient's chin in the prepared pocket. Pass the second handkerchief over the top of the head. In applying the handkerchief, see that the knot of the pocket on the injured side of the face does not come near the fracture, otherwise the hard surface will cause unnecessary pain. In the event of only one handkerchief being available, a boot-lace or two chin-straps can be attached to the handkerchief, and tied over the top of the head, and a second



time across the back of the head, one acting as a check to the other. No better support for the jaw has yet been devised. It will prevent movement, and cannot possibly slip if at all reasonably applied.

### Fractured Collar Bone

Fracture of the collar bone is frequently caused by a fall on the hand or shoulder.

*Treatment.*—Place a pad about two inches thick under the armpit and gently bend the forearm up. Secure tightly the arm to the side by a broad bandage passed around the elbow and body and support the arm in a sling made in the manner shown in the accompanying illustration. Great care should be taken not to move the arm about more than is absolutely necessary.



Fractured  
Collar Bone

### Fractured Leg

*Treatment.*—Lay the patient on his back. Steady the limb by holding the ankle and foot. Draw the foot into its natural position and do not let go until the splints have been fixed.



Fractured Leg

Apply splints on the outer and inner sides of the leg, reaching from above the knee to the bottom of the foot. Fasten the splints with bandages above and below the break, around the ankles and above the knee, also apply a broad bandage around both knees. All knots are to be tied over the splint.

### Fractured Thigh

The thigh bone may be broken at its neck, anywhere in the shaft, or close to the knee. It is often difficult to distinguish from a severe bruise of the hip, but if the patient cannot, when lying on the back, raise the heel from the ground, the bone is

broken. A prominent sign is the position of the foot, which, as a rule lies on its outer side.

*Treatment.*—First, gently draw down the injured limb to its normal position, the toes of both limbs pointing upwards. Having done this, on no account let go or relax your tension until you have got a bystander to hold the limb firmly in that position. If no bystanders are present, then, without letting go of the injured limb, tie the ankles firmly together by passing a bandage underneath, bringing it around, crossing over the insteps and tying off under the feet.

Second, apply a splint outside the limb; this splint must be long enough to reach from the armpit to beyond the foot. Then apply another splint on the inside of the limb, reaching from the fork to the same distance below the foot as the other.

Third, secure the splints by bandages applied as follows:

1. Around the body close up under the armpits, securing the top of the outside splint.
2. Around the loins securing the outside splint.
3. Around the injured limb below the seat of the fracture secure both splints.
4. Around the injured limb below the seat of the fracture securing both splints.
5. Around the injured limb at the centre of the leg securing both splints.
6. Around both limbs at the knee joint.
7. Now secure the bottom part of the outside splint firmly to the bandage which is tied round the ankles, if that has been applied at first. If, however, a bystander has been holding the limb, the bandage round the ankles is now applied, taking in the outside splint; when this is secured the hold can be released.

All knots must be tied on the outside splint.

Fracture of the Thigh



**To Carry a Patient**

(For directions how to carry a patient suffering from fracture, see p. 430.)

**Frostbite**

In frostbite the part of the body affected becomes of a greyish white or tallow colour. No sensation of cold or pain is, however, felt after the blood ceases to circulate and often it is only by the remark of a bystander or passerby that the frost-bitten person becomes aware that his own nose, or cheek, or ear has been frozen.

*Treatment.*—The victim should not be brought into a warm room until feeling and circulation have been restored in the affected part by rubbing with the hand or bathing in cold water or holding snow against it. Care needs to be taken to avoid breaking the skin by too vigorous rubbing.

**Escape of Gas**

The most common gas accidents are caused by escapes of illuminating gas, very often brought about by persons going to sleep and leaving a small jet burning, which either blows out, or through fluctuation of pressure, goes out, the pressure afterwards coming on again and causing the gas to escape into the room.

Then we have sewer gas and coal gas from stoves.

To rescue a person from a gas-filled room, you must move quickly and breathe as little as you can. Take a few deep breaths before entering and then hold your breath as long as possible. Crawl along the floor and place a wet handkerchief over your nose and mouth before entering the room.

*Treatment.*—To revive a gas poisoned patient, apply artificial respiration as for drowning.

**Hemorrhage. (See Bleeding.)****Hiccough**

Hiccough is caused by indigestion and can usually be controlled by holding the breath or drinking a glass of water in small sips without taking a breath. If these expedients fail vomiting is an almost certain cure.

**Poisoning**

*Treatment.*—Poisons are grouped for purposes of treatment under two headings, viz.: (1) those which do not stain the mouth, which are treated by giving an emetic to induce vomit-

ing; and (2) those which burn or stain the mouth, in which no emetic is to be given. The latter are confined to corrosive acids and alkalies. In all cases of poisoning it is best to send at once for a doctor telling him, if possible, exactly what has occurred. Except when the lips and mouth have been stained or burned the victim should be induced to vomit by tickling the back of the throat with the finger or with a feather or by drinking either a dessertspoonful of mustard dissolved in a tumblerful of luke-warm water, a tablespoonful of salt dissolved in a tumblerful of luke-warm water or in the case of a young child, a teaspoonful of Ipecacuanha wine. If the patient has not become insensible, milk should be given, raw eggs beaten up in milk or water, cream and flour beaten up together, animal or vegetable oil (except in phosphorus poisoning) and tea. If the patient is disposed to go to sleep keep him awake by walking him about or otherwise, or by giving strong black coffee to drink. If the throat is swollen to the extent of obstructing the windpipe it is desirable to apply hot flannels or poultices to the neck and to give the patient frequent sips of cold drinks. If breathing ceases apply artificial respiration. Preserve any vomited matter suspected of being the poison.

If the lips and mouth are stained or burned give no emetic, but if the poison is known to have been an acid give an alkali at once, such as soda, chalk and even wall plaster.

If the poison was itself a corrosive alkali wash the mouth out with lemon juice or vinegar diluted in an equal quantity of water and afterwards let the patient sip the same.

In either case give oil.

If the victim of poisoning is unconscious when found, and it is not otherwise clear what form of poison has been taken, this can sometimes be ascertained from the smell of the breath.

#### Alcoholic Poisoning

Alcoholic poisoning is not simply drunkenness but the collapse which follows excess, often ending in death. The victim may become speechless and motionless, the pulse quick and feeble with snoring breathing, the eyes bloodshot, the face pale (flushed at first). The breath smells of alcohol.

*Caution.*—These symptoms may resemble apoplexy, narcotic poisoning and injury of the brain. Drunk or dying is often a difficult question to answer. Drunken men fall and sometimes fracture their skulls. An unconscious man smelling strongly of alcohol is by no means necessarily dead drunk.

*Treatment.*—If the circumstances indicate alcoholism tickle the back of the throat with a finger and keep doing so until the patient vomits. Keep the patient warm, and when he is conscious give him hot drinks of milk. Encourage sleep.

#### Poison Ivy

Poison ivy causes a very intense inflammation of the skin. It is better to avoid contact with this plant, even though it has not harmed you before. Baking soda, made into a thick paste with water, or carbolized vaseline, are good remedies. In severe cases a doctor should be consulted.

#### Shock

In cases of shock, or collapse, the face is pale, and the surface of the body cold. The patient shivers. The pulse is feeble and irregular, the breathing feeble and shallow, the patient sighs and is only partly conscious.

*Treatment.*—Arrest any bleeding. Keep the patient lying down and the head low. Apply hot water bottles, and extra clothing. Rub the arms and legs. Speak encouragingly and make light of the injury. If the patient is conscious and there is no bleeding, give some mild stimulant such as smelling salts, tea or coffee.

#### Sprains

A joint is said to be sprained when by any sudden wrench or twist the muscles around it have been unduly stretched and torn. Going over on one's ankle is a sprain of a simple kind.

*Treatment.*—The injured member should be placed in the most comfortable position and treated with cold or hot applications as in the case of a dislocation (see p. 451.) Then bandage tightly. When the ankle is sprained do not remove the boot until the patient is indoors. Instead bandage firmly over the boot.

#### Strangulation

*Treatment.*—Remove whatever may be gripping the throat. Loosen the clothes. Dash hot and cold water alternately over the patient. Apply artificial respiration if the patient is not breathing.

#### Sunstroke or Heatstroke

Exposure to the sun in very hot weather or to excessive heat in an overcrowded or confined place is apt to induce a feeling of sickness, giddiness and difficulty in breathing which, if proper measures are not taken, may develop into insensibility.

The patient complains of thirst, the skin becomes dry and burning, the face flushed and the pulse quick and bounding. Sometimes vomiting occurs.

*Treatment.*—Any tight clothing should be undone and the sufferer removed to a cool shady spot, stripped to the waist and laid down with the head and body well raised. Fanning vigorously will usually assist in obtaining a free circulation of air. Cold water or ice should be applied to the head, neck and spine until the symptoms subside. On regaining consciousness the patient may also be given water to drink.

#### Toothache

*Treatment.*—Hot applications will help in the relief of toothache much in the same way as in earache but the aching of a tooth indicates the existence of trouble which can only be permanently cured by a dentist. If there is a cavity it will sometimes afford relief to clear it out with a small piece of cotton or tooth pick and afterwards plug the hole with cotton, containing a drop of oil of cloves.

#### Unconsciousness

*Treatment.*—In cases of unconsciousness loosen all tight clothing, and keep the patient in a reclining position. If pale lay flat (no head rest); if the face is flushed raise the head on pillow. If the patient becomes sick turn on the side. Give nothing by the mouth. Keep the body warm and give plenty of fresh air. (See Fainting, Fits, Bleeding and Concussion.)

#### Wounds

*Treatment.*—Even small cuts should be thoroughly cleansed, either with water or with an antiseptic solution such as may readily be made with boracic acid. Any foreign substance which may be lodged in the wound, such as glass, or gravel, etc., should be removed and a dry clean dressing applied to bring the edges of the wound together. In many cases it will be necessary to secure the dressing with a bandage.

## CHAPTER VII

### HEALTH AND ENDURANCE

The training of Boy Scouts would be incomplete if it neglected to lay strong emphasis on the importance of physical health. Out of the first three million men examined in Great Britain for military service in the European war, it was reported that nearly one million were rejected as physically unfit. Sad to say, the statistics of enlistments in Canada for overseas service are equally disappointing, because of the number of those rejected for various ailments—most of them the result of neglect. During the first three years of the war, the proportion of rejections among young men throughout Canada between the ages of twenty and thirty-five years was about thirty-five per cent. Of those within the same age limits, examined under the provisions of the Military Service Act during the late fall and early winter of 1917, the proportion passed by the doctors as coming within class A was only fifty per cent. Heart and lung troubles, very many of them due to lack of proper exercise and care, led the long list of disabilities as the commonest defects of all. Flat feet, often aggravated by neglect, came next in the list and was the largest single cause of all. Other common causes of rejections were defective veins, physical deformities, bad eyesight, rheumatism, ear trouble, venereal diseases, defective teeth, and mental deficiencies, about in the order named. A lesson this, and warning surely to the rising generation as to the necessity of taking greater care in matters of health than has been shown heretofore; for upon this, after all, depends not only our personal success and happiness, but even life itself.

The Scout training suggests the importance of boys becoming *personally responsible* for their own strength, health, and sanitary surroundings.

A Scout's motto is, "Never say die till you're dead," and if he acts up to this, it will pull him out of many a bad place when everything seems to be going wrong for him. It means a mixture of pluck, patience and strength, which we call "endurance." But endurance is impossible in the case of anyone who has not been trained to be healthy, strong and active as

a lad. The North American Indians, perhaps the finest type of physical manhood the world has ever produced, recognize this fact in the upbringing of their youth; and though some features of their training would, nowadays, be regarded as extreme, there is no doubt whatever but that they were thereby inured to exertion which very few men of other races could endure. Early rising was obligatory among the Indians and for the boys the day's activities began with a morning plunge in the cold water of the river, lake or sea at daybreak.

Mr. Hill-Tout writes as follows of the custom of the British Columbia coast Indians in this respect: "As the boy advances in years he is subject to various forms of discipline, which increase in severity as he approaches manhood. The object of this discipline is to harden his body and to inure it to the fatigues and privations of the chase. Every night and morning, from about his fourth year, he is made to take a cold bath in the lake or river, summer and winter alike. In some camps it was customary for the old people to whip the naked bodies of the boys with light rods or small branches before they were sent to take their plunge. This was to make the skin tingle and burn so that it could better withstand the chilly effects of the snow-fed waters. Some of the old people used to pass the rods or branches through the flames of the house fire before they applied them to the boys' bodies. Being whipped daily with rods thus treated would save a boy, it was thought, from becoming lazy and indolent when he reached manhood." After he had entered the teens, he was often made to lie out all night without any clothing, till his body became so inured to the cold that he could go without clothing at any time without discomfort."

All the great peace scouts who have succeeded in exploring or hunting expeditions in wild countries have been able to get on only by being pretty good doctors themselves; because diseases, accidents, and wounds are always being suffered by them or their men, and they don't find doctors and druggists in the jungles to cure them. So that a Scout who does not know something about doctoring would never get on at all. He might just as well stay at home for all the good he will be able to do. Therefore, practise keeping healthy yourself, and then you will be able to show others how to keep themselves healthy too. In this way you can do many good turns; also, if you know how to look after yourself you need never have to pay for medicine.



### Keep Yourself Clean

If you cut your hand when it is dirty, it is very likely to fester, and to become very sore; but if your hand is quite clean and freshly washed, no harm will come of it; it heals up at once. Cleaning your skin helps to clean your blood. The Japs say that half the good of exercise is lost if you do not have a bath immediately after it.

It may not be always possible for you to get a bath every day, but you can at any rate rub yourself over with a wet towel or scrub yourself with a dry one, and you ought not to miss a single day in doing this if you want to keep fit and well. You should also keep your clothing clean, both your underclothing as well as that which shows. Beat it out with a stick every day before putting it on.

To be healthy and strong, you must keep your blood pure and clean. This is done by deep breathing, drawing in plenty of pure, fresh air and clearing out all dirty matter from your inside, which is done by having a movement of the bowels daily, without fail. Many people, indeed, are the better for having it twice a day. If there is any difficulty about it one day, drink plenty of good water, especially before and just after breakfast, and practise body-twisting exercises, and all should be well. Persons whose bowels do not move as freely and regularly as they should will find it helpful to eat brown bread rather than white, or muffins containing as much as one-half bran.

### Exercises and Their Object

There is a great deal of nonsense done in the way of bodily exercises; so many people seem to think that their only object is to make huge muscle. But to make yourself strong and healthy it is necessary to begin with your inside and to get the blood into good order and the heart to work well; that is the secret of the whole thing, and exercises of the body do it for you. This is the way:—

(a) **MAKE THE HEART STRONG** in order to pump the blood properly to every part of the body, and so to build up flesh, bone, and muscle.

*Exercise:* The "Struggle" and "Wrist Pushing."

(b) **MAKE THE LUNGS STRONG** in order to provide the blood with fresh air.

*Exercise:* "Deep breathing." See page 477.

(c) **MAKE THE SKIN PERSPIRE** to get rid of the dirt from the blood.

*Exercise:* Bath, or rub with a damp towel every day.

(d) **MAKE THE STOMACH WORK** to feed the blood.

*Exercise:* "Conc," or "Body Bending," and "Twisting."

(e) **MAKE THE BOWELS ACTIVE** to remove the remains of food and dirt from the body.

*Exercise:* "Body Bending" and "Kneading the Abdomen." Drink plenty of good water. Regular daily movements of the bowels.

(f) **WORK MUSCLES IN EACH PART OF THE BODY** to make the blood circulate to that part, and so increase your strength.

*Exercise:* Running and Walking; and special exercises of special muscles, such as "Wrist Pushing."

The secret of keeping well and healthy is to keep your blood clean and active. These different exercises will do that if you will use them every day. Someone has said, "If you practice body exercises every morning, you will never be ill; and if you also drink a pint of warm water every night, you will never die."

Care needs to be taken, however, not to get into the habit of drinking water, or anything else, too hot as this is injurious.

The blood thrives on good simple food, plenty of exercise, plenty of fresh air, cleanliness of the body both *inside* and *out*, and proper rest of body and mind at intervals.

The Japanese are very strong and healthy, as was shown during the war with Russia. There was very little sickness among them, and those who were wounded generally recovered quickly because their skin was clean and their blood was in healthy, sound condition. They are the best example that we can copy. They keep themselves very clean by having two or three baths every day.

They eat plain food, chiefly rice and fruit, and not much of it. They drink plenty of water, but no spirits. They take lots of exercise. They make themselves good-tempered and do not worry their brain. They live in fresh air, as much as possible, day and night. Their particular exercise is "Ju-Jitsu" which is more of a game than a drill, and is generally played in pairs. Pupils get to like this game so much that they generally go on with it after their course of instruction has finished.

By Ju-Jitsu, the muscles and body are developed in a natural way, in the open air as a rule. It requires no apparatus, and once the muscles have been formed by it, they do not disappear again when you cease the practices, as is the case in ordinary gymnastics.

Admiral Kamimura, the great Admiral of our friends the Japanese, strongly recommends all young men and lads to practise Ju-Jitsu, as it not only makes them strong, but also quick in the mind.

### The Eyes

A Scout, of course, must have particularly good eyesight; he must be able to see anything very quickly and to see it a long way off. Sight is the most important and most highly prized of our senses and blindness one of life's saddest fates. To be shut off from any view of the great world about us, from the faces of loved ones; what a calamity? Let us then who can see take the utmost care of this priceless gift, saving our eyesight from neglect and abuse in our youth that we may be able to see well in later years. As a matter of fact few of us have perfect sight at any stage; perfectly formed eyes are few and far between.

In all cases of eye trouble, it is safest to consult a competent oculist and if you have to wear glasses or spectacles to follow the directions of an expert rather than a dealer.

Most of our defective sight results from eye-strain. Avoid, therefore, reading by artificial light as much as possible and also sit with your back or side to the light when doing any close work. It is best to have the light come from the rear and over the left shoulder. Reading by a fire place or lying down are alike trying to the sight. Sit erect and hold the book well up and not too close.

Blood-shot eyes, styes, squinting, red eyelids, twitching of the lid muscles, wrinkled eyebrows and a tired or drowsy feeling about the eyes are all indications of eye-strain; headache also, in many instances. Defective sight is, in fact, responsible for more headaches of the recurring kind than all other causes combined. Usually the headache caused by eye-strain follows some continued use of the sight, as in reading or writing or sight-seeing. Occasionally it follows hours afterward. Train-sickness is in many cases due to the straining of the sight in looking out of the car window.

Eye-strain, if neglected, is apt to injure other organs; cases

have occurred in which indigestion, nervous breakdown and epilepsy have been traced to this cause and cured by eye treatment. Of course it is not suggested that these troubles are due in all instances to this single cause.

There are a few diseases of a very serious nature affecting the eyes and eyelids, such as trachoma and "pink-eye," which are at once infectious and dangerous. The former is happily seldom encountered among people of cleanly habits.

Cataract is the term applied to a growth on the lens of the eye which causes it to lose its transparency. This trouble can be overcome by the removal of the cataract through surgical operation.

"Short-sight" and "far-sight" are terms applied to peculiarities of sight caused by imperfect forms of eye-balls. The human eye is spherical in form but perfectly formed eyes are as we have already observed, comparatively rare. The "short-sighted" fellow's eye is elongated with the result that he is unable to focus on objects at a distance and is limited in his range of vision to things close up. The really "short-sighted" fellow wouldn't recognize his own father across the street—without glasses.

The "far-sighted" eye is on the contrary somewhat flattened. The term "far-sight," although in common use, is rather misleading since such a one does not see any farther than the person with normal vision. Indeed in many cases he cannot see as far and besides is unable to use his eyes at any range without exerting excessive muscular effort to focus.

The retina of the eye, which receives the image of things seen, is one of the most marvellous tissues of our body since in conjunction with the optic nerve it not only records the images of everything we see but carries the impression to our brain where sight merges into thought by a process which the human mind has not yet fathomed.

One sometimes hears it said that cases of "squint" or "cross-eye" have been caused by fright or imitation of some other person similarly afflicted. Eye specialists tell us, however that this is not so, but that the common form of "squint" occurs usually in "far-sighted" eyes as a result of strain of the eye muscles. It usually makes its appearance between the third and fifth years of age when children begin using their eyes for close work. In cases of pronounced "far-sight" an excessive muscular effort is required to focus objects close by

with both eyes together and what happens is that nature sometimes gives up the attempt and, having selected the better one for seeing purposes, turns the other in towards the nose and thus out of commission.

In youth crossed eyes can often be straightened by the use of glasses; but, if the deformity is neglected, an operation must be performed to set things right and glasses worn afterward to keep the eye in position. However, crossed eyes can happily be righted, even though of many years standing, and considering the betterment which is thereby made in one's personal appearance it is a pity to find so many still suffering from this affliction.

For a simple test to determine whether you are possessed of normal vision, place this book in an upright position and unless you cannot read clearly with both eyes together, and with each eye separately, the first line following at twenty feet distance, the second line at fifteen feet, and the third line at ten feet, it is desirable that you should consult a competent oculist.

C L V F O T

E A C F D L O T

D V C L A E O T F

There is no foundation for the popular impression that dark eyes are stronger than light ones. Dark complexioned people ordinarily have dark eyes and fair people ones of lighter shade. It is all a matter of the amount of pigment or colouring matter in the inner surface of the iris. The pink eye of the albino, whether in man, or bird, or beast, is due to there being practically no colour in the iris, thus allowing the minute blood vessels to show through. The races inhabiting the tropics are gifted with dark eyes, by which means they are the better protected from strong sunlight.

A Scout, besides having good eyesight, must be able to tell

the colour of things which he sees. Colour blindness is a great affliction from which some people suffer. It takes away a pleasure from them, and it also makes them useless for certain trades and professions.

#### The Nose and Throat

The nose has a three-fold function. By it we exercise the sense of smell. Through it we breathe air and prepare the air for admission to the lungs. It is besides a drainage canal for the nearby cavities and structures of the head.

The throat, apart from the satisfying use we make of it at meal times, contains also the breathing passage leading to the lungs. In the throat and mouth is, moreover, lodged the sense of taste.

Taste and smell, although of secondary importance to hearing and sight, are powers which none of us would like to have to do without. Our most important uses of the nose and throat are, however, as nature's passage for the admission of air to the lungs and food to the stomach.

A Scout must be able to smell well, in order to find his enemy by night. If he always breathes through the nose, and not through the mouth, this helps him considerably, but there are other reasons more important than that for always breathing through the nose.

If you cannot breathe freely through the nose, it is better to have an examination made; growths known as adenoids frequently occur in the upper part of the throat behind the nose and interfere with nose breathing and retard both physical and mental development. Adenoids produce "snore"; they keep their victim in an almost constant state of cold in the head; they also interfere with one's hearing and should be removed by surgical operation.

So-called cold in the head results from germs fastening on the lining of the nose. Unusual exposure to cold is apt to reduce one's resisting power against infection and disease in any weak part. Thus the part played by cold is really a predisposing one. Do not neglect a cold in the head, because it may there develop into a chronic inflammation, with injury to the organs affected.

Chronic cold in the head is commonly spoken of as "catarrh" and may in most instances be charged to neglect. Blowing the nose too vigorously may also cause trouble. Avoid no

picking as an unclean habit. If crusts form in the nose they are easily softened by the use of a little vaseline.

Frequent sore throat may be due to enlarged tonsils. These organs occur on either side of the throat just below the soft palate, near the base of the tongue. If the tonsils serve any useful purpose in nature, it has never been discovered.

The tonsils are more prominent in childhood and tend to disappear as one grows up. Sometimes, however, they increase in size rather than diminish and thus seriously interfere with health by making it difficult either to breathe or swallow; they are also liable to infection and inflammation (tonsilitis). Enlarged tonsils are besides an impediment alike to hearing and speech and operations are frequently the only means of relief.

By keeping the mouth shut you prevent yourself from getting thirsty when you are doing hard work. At night, too, this will keep you from snoring. Practise, therefore, keeping your mouth shut and breathing through your nose at all times.

#### The Ears

The ear is perhaps the most delicately constructed and adjusted of all our sense organs, yet so well is it guarded by nature that few of us feel called upon to give it any special care. No one fully realizes how much hearing means to us in daily life. Strong as is the influence upon us of things seen, hearing is more potent in its appeal to the emotions. Curiously, too, our recognition of sounds is often more accurate and truthful than of things seen with our very eyes.

Any ear trouble should be given immediate attention, whether it is a pain or discharge in the ear, ringing or hissing sounds, or any degree of deafness. Relief from pain may sometimes be had by an application of heat in the form of a hot water bag or otherwise.

Occasionally the Scout may have a fly or insect crawl into his ear in camp and cause considerable pain. No one should attempt to remove anything from the ear with hairpins or like makeshifts. An ear syringe is the only instrument that may be employed with safety and even this needs to be used with the greatest care. The removal of foreign bodies from the ear often requires a physician's help.

Children sometimes get beads, or peas, or beans into the ears, without telling their parents what has occurred until

trouble develops, perhaps long afterwards. Beans, peas and such like are apt to swell and even germinate in the ear if they are not removed.

People are too apt to clean their ears by screwing handkerchiefs, hairpins, etc., into them. Often the ear drum is injured in this way. For cleaning purposes it is enough to wipe the outer ear with the wash rag over the end of one's finger.

Wax sometimes collects in the ear to the point of blocking the passage; in this case it is better to visit a physician and have it removed. The waxy substance in the ear is provided by nature for the purpose of collecting dust and other foreign bodies entering the outer ear and thus preventing them from reaching the ear drum. Twisting tooth picks or a corner of a towel into the ear passage to clean the passage is more apt to push particles of wax into the ear than to remove them.

Very many children have had their hearing permanently injured by getting a box on the ear.

In swimming, many boys get water in their ears, which they find difficulty in getting out again. For the purpose of keeping the water out of one's ears in swimming, rubber ear stoppers are sold and they serve this purpose well. Some fellows plug the ears with cotton preparatory to swimming. The common way of expelling water from the ears is by bending sideways on the side affected and jumping on the ground. If this does not succeed, pull the ear lightly upward and backward with the fingers and tap lightly on the cheek bone.

### The Teeth

Mankind probably suffers more distress and pain from toothache than from any other ailment. Yet decay of the teeth is in a large part a preventable loss and affliction, for a mouth which is kept pure and clean gives no lodgment to the germs of tooth decay. The measure of cleanliness we observe in the care of our mouth will largely determine the extent of our liability to tooth troubles. Besides protecting the teeth, cleanliness reduces the risk we all run of contracting other diseases. A clean mouth is a very important safeguard against disease. Tooth decay, on the other hand, if it is neglected, is liable to breed other disorders and, indeed, to poison the entire system.

Many people who are scrupulously particular in keeping their faces and hands and even their nails clean are shockingly neglected of their mouths. Of what avail is it to spend



thought and energy in keeping our food and drinking water pure and clean if these are afterwards fed into a filthy mouth?

Dental examination of school children's teeth shows that a very large proportion of the pupils have decayed and dirty teeth. Happily measures are being taken within recent years by many of the public school authorities in Canada whereby these cases of neglect receive proper attention.

A would-be recruit for war service on examination was found to be sufficiently strong, but when they came to examine his teeth they discovered that these were in bad condition, and so he was told that he could not be accepted as a soldier. To this he replied: "But sir, that seems hard lines. Surely we don't have to eat the enemy when we've killed them, do we?" Experience has, however, proved that defective teeth constitute a serious impairment of full fitness for military service and in the present war special attention has accordingly been given to dentistry with gratifying results all round. In the early stages of the European War a large percentage of the young men offering in Canada for military service overseas had to be refused on account of defective teeth, until arrangements were made by the Canadian military authorities for the treatment of defective teeth among those applying for enlistment.

A scout with bad teeth is no use at all for scouting work, because he has to live on hard biscuits and hard meat, which he cannot possibly eat or digest if his teeth are not good; and good teeth depend upon how you look after them when you are young, which means that you should keep them very carefully clean. At least twice a day they should be brushed, when you get up in the morning and when you go to bed, both inside and out—and rinsed with water, if possible, after every meal, but especially after eating fruit or acid food.

Common sense will of itself suggest that soft or rapidly decaying teeth require more attention than others. Using too hard a brush and too coarse paste or powder are apt to wear the teeth away. Scouts in the jungle cannot always find tooth-brushes but they make substitutes out of dry sticks, which they fray out at the end, and make into an imitation of a brush.

In brushing it is not enough to rub the teeth across; they should also be cleaned downward in the case of the upper teeth and upward in the case of the lower set to get into the spaces separating the teeth from one another. Apart from constitutional defects, the secret of producing strong teeth is

the same as that of producing strong arms; viz., plenty exercise. See, therefore, that your diet includes some things that require to be well chewed.

### The Feet

The Scout needs to look well after his feet. It is necessary for him to avoid "neat looking" boots in his choice of footwear, and to pick ones straight on the inside, broad across the ball, having thick soles, soft uppers and low broad heels. Shoes that are too large are apt to blister the feet but are preferable to ones which cramp and pinch the toes and produce corns, crooked toes and ingrown toe nails, on account of being too small. The Scout's footwear should be comfortable. Break in new shoes before using them on the hike. Patent leather is non-porous and hot; so are boots that have been soaked with oil or grease to make them waterproof. The latter should be used only when wet weather compels.

Surveyors working in wet ground during the summer months often wear canvas shoes with holes in the sides to let the water out.

In drying out boots and stockings by the camp-fire, one needs to be careful to keep them from being scorched or, in the case of boots, hardened up. Campers and trampers prefer drying their footwear and stockings on a framework of green sticks over the hot ashes of a burned out camp fire. If the boots are filled with heated grain or gravel the latter will absorb the moisture and dry out the leather without injury.

If your feet are blistering on a hike from boots that are too large, it will help matters to tighten the boot over your foot with a strap. Relief can also be obtained from the pain of a blister by cutting the centre out of a piece of cotton and fastening the latter around the blister by adhesive plaster.

Take it easy on the tramp, particularly so in starting out until you are fully limbered up. Remember the fable of the hare and the tortoise. It is steady that counts. Short rests at frequent intervals are better than longer lay-offs which may cool you off too much and stiffen the muscles. If it is an all-day tramp, take off shoes and stockings in the middle of the day to rest your feet. Turn your stockings inside out to dry and change them to the reverse feet when you are replacing them for the afternoon, unless you have a second pair of dry ones available for this use.

Soft woollen stockings of comfortable fit and good weight are preferable either for summer or winter wear.

A cold water bath and thorough rubbing is good for the feet and legs, with a little salt in the water if the feet are "raw." Boys who suffer from perspiring feet should wash the feet often, especially between the toes. Frequent changes of stockings are also helpful. Shake a little talcum powder in your boots in the morning. Ingrown toe nails often result from allowing the toe nail to grow too long, until by pressure of the boot it is forced sideways into the flesh. The toe nails should be cut at least once in every week or ten days. They should be cut square across the top, not rounded, and with sharp scissors.

Flat foot, an exceedingly common ailment, is a falling of the arch of the instep, which impairs one's walking powers and which has led to thousands of young men being "turned down" for military service as physically unfit. Treatment for this trouble should be taken on the advice of a foot specialist rather than of a dealer in foot plates.

There is a risk of blood poisoning in paring corns. The human foot in its natural state leaves ample space between all the toes. Soft corns, which result from pressure between the toes, are relieved by having the latter kept apart with cotton. Comfortably fitted shoes are essential to the removal of corns and callouses.

On the western plains a stranger to the plainsman's manner of life is called a "tenderfoot" because he generally gets sore feet until by experience he learns how to keep them in good order. Let the Tenderfoot Scout, therefore, take the advice on this subject of those who know.

### Continence

Smoking and drinking are things that tempt some fellows and not others, but there is one temptation that is pretty sure to come to you at one time or another, and that you should be warned against. It is called in our schools "beastliness," and that is about the best name for it. Smoking and drinking and gambling are men's vices and therefore attract some boys, but this "beastliness" is not a man's vice; men have nothing but contempt for a fellow who gives way to it.

Some boys, like those who start smoking, think it a very fine and manly thing to tell or listen to dirty stories, but it only

shows them to be little fools. Yet such talk and the reading of trashy books or looking at lewd pictures, are very apt to lead a thoughtless boy into the temptation of self-abuse. This is the most dangerous thing for him, for, should it become a habit, it quickly destroys both health and spirits; he becomes feeble in body and mind, and often ends in a lunatic asylum.

But, if you have any manliness in you, you will throw off such temptation at once; you will stop looking at the books and listening to the stories, and will give yourself something else to think about. Sometimes the desire is brought on by indigestion, or from eating too rich food, or from constipation. It can, therefore, be cured by correcting these, and by bathing a part of the body once in cold water, or by exercising the upper part of the body by arm exercises, boxing, etc. It may seem difficult to overcome the temptation the first time, but when you have done so once it will be easier afterwards. If you still have trouble about it, do not make a secret of it, but go to your Scoutmaster and talk it over with him, and all will come right. Bad dreams are another form of want of continence, which often come from sleeping in too warm a bed with too many blankets on, or from sleeping on your back; so try to avoid these causes

#### Early Rising

The Scout's time for being most active is in the early morning because that is the time when wild animals all do their feeding and moving about; also in war the usual hour for an attack is just before dawn, when the attackers can creep up unseen in the dark, and get sufficient light to enable them to carry out the attack suddenly, while the other people are still asleep. So a Scout trains himself to the habit of getting up very early; and, when once he is in the habit, it is no trouble at all to him, like it is to some fat fellows who lie asleep after the daylight has come.

The Emperor Charlemagne, who was a great Scout in the old days, used always to get up in the middle of the night. The Duke of Wellington, who, like Napoleon Bonaparte, preferred to sleep on a little camp bed, used to say, "When it is time to turn over in bed, it is time to turn out."

Many men who manage to get through more work than others in a day, do so by getting up an hour or two earlier. By getting up early you also can get more time for play. If you get up one hour earlier than other people, you get th

hours a month more of life than they do; while they have twelve months in the year you get 365 extra hours, or thirty more days—that is, thirteen months to their twelve.

The old rhyme has a lot of truth in that

"Early to bed and early to rise,  
Makes a man healthy, and wealthy and wise."

### Smile

Want of laughter means want of health. Laugh as much as you can; it does you good; so, whenever you can get a good laugh, laugh on. And make other people laugh, too, when possible, as it does them good. If you are in pain or trouble, make yourself smile at it; if you remember to do this, and force yourself, you will find it really does make a difference.

If you read about great scouts like Captain John Smith, "The Pathfinder," and others, you will generally find that they were pretty cheery old fellows. The ordinary boy is apt to frown when working hard at physical exercises, but the Boy Scout is required to smile all the time; he drops a mark off his score whenever he frowns. So, "Pack up your troubles in your old kit bag and smile, smile, smile."

### Deep Breathing

Deep breathing is of the greatest importance for bringing fresh air into the lungs to be carried into the blood, and for developing the size of the chest, but it should be done carefully according to instructions and not overdone; otherwise it is liable to strain the heart. The Japs always carry on deep breathing exercise for a few minutes when they first get up in the morning, and always in the open air. It is done by sucking air in through the nose until it swells out your ribs as far as possible, especially at the back; then, after a pause, you breathe out the air slowly and gradually through the mouth until you have no air left in you; then after a pause draw in your breath again through the nose as before.

Singing, if carried out on a good system, develops simultaneously proper breathing and development of heart, lungs, chest, and throat.

### Drinking

A very large proportion of the nation's poverty and of the illness, insanity and crime can be directly traced to alcohol. Alcohol is of no use to healthy men and it would be impossible

for anyone who drinks to be a Scout. It is an old saying a true one that "strong drink makes weak men." The effect of this drug on the system is to dull the senses rather than stimulate. Very strangely, alcohol seems to weaken the very faculties which thought and education tend to build up in us, such as self control and a sense of responsibility. Insurance and other reliable statistics prove conclusively that drinking shortens life. Let all Scouts, therefore, avoid this habit and let us all hope that the immense impetus that temperance has gained through the war will prove permanent.

#### Smoking

A Scout does not smoke. Any boy can smoke; it is not such a very wonderful thing to do. But a Scout will not do it because he is not such a fool. He knows that when a lad smokes before he is fully grown up it is almost sure to make his heart feeble, and the heart is the most important organ in a lad's body. It pumps the blood all over him to form flesh, bone, and muscle. If the heart does not do its work the body cannot grow to be healthy. Any Scout knows that smoking spoils his mind and eyesight, and also his sense of smell which is of greatest importance to him for scouting on active service.

A very large number of the best sportsmen, soldiers, sailors and others, do not smoke; they find they can do better without it.

In Japan no boy under twenty is allowed to smoke, and if he does his parents are taken up and fined.

Professor Osler, in speaking against tobacco, said it would be a good thing if all the beer and spirits in England could be thrown into the sea one day, and if, on the second day, you dumped all the tobacco there too, it would be very good for everyone in England,—although unhealthy for the fish.

No boy ever began smoking because he liked it, but generally because either he feared being chaffed by the other boys as afraid to smoke, or because he thought that by smoking he would look like a great man, when all the time he only looks like a little ass.

So don't weaken, but just make up your mind for yourself that you don't mean to smoke: and stick to it. That will show you to be a man much more than any slobbering about with a half-smoked cigarette between your lips. The other fellows will in the end respect you much more, and will

probably in many cases secretly follow your lead. If they do this you will already have done a good thing in the world, although you are only a boy. From that small start you will most probably go on and do big things as you grow up.

### Food

A good many illnesses come from over-eating or eating the wrong kind of food. A Scout must know how to take care of himself, else he is of no use. He must keep himself light and active. English people as a rule eat more meat than is necessary; in fact, they could do without it altogether if they tried, and would be none the worse. It is an expensive luxury. The Japanese are as strong as we are, but they do not eat any meat, and eat only small meals of other things.

Some of the cheapest and best foods are dried peas, beans, flour, oatmeal, potatoes, hominy, and cheese. Other good foods are fruit, vegetables, fish, eggs, nuts, rice and milk. One can live on these perfectly well without meat. Bananas are especially good food, they are cheap, have no seeds nor pips to irritate your inside, their skin protects them from germs of disease, and their flesh is of a wholesome kind and satisfying. The natives of the West Coast of Africa eat very little else all their lives, and they are fat and happy.

If you have lots of fresh air, you do not need much food. If, on the other hand, you are sitting indoors all day, much food makes you fat and sleepy, so that in either case you are better for taking little. Still, growing boys should not starve themselves. At the same time, they need not be like that little hog at the school feast, who when asked, "Can't you eat any more?" replied, "Yes, I could eat more, but I've no room to swallow it."

A great cause of illness nowadays is the amount of medicine with which fellows dose themselves when there is no reason for taking any medicine at all. The best medicine is open air and exercise and a big cup of water in the early morning if you are constipated, and a pint of warm water on going to bed.

### \*PHYSICAL EXERCISES

Every Canadian boy should "be prepared" physically and, apart from other things important to health, such as proper attention to diet, care of teeth, eyes, ears, nose, throat, etc., regular simple exercises bringing into action all the muscles,

\*The following notes on physical exercises were specially written for the present work by Scoutmaster H. O. Eaman, of Ottawa; the drawings accompanying the exercises are by Scoutmaster Charles McKeever, of Ottawa.





The leader after performing the exercise once himself should give the command "Ready, Commence, 1-2-3!" and continue to count in a regular manner as directed in the exercises. The figures at the beginning of the directions signify the count.

### Exercises Requiring No Apparatus

I.—Position, heels together, head and shoulders erect, hands on hips with thumbs to rear.

1. Move head forward.
  2. Move head backward.
- Continue for 16 counts.

II.—Position, same as in No. 1.

1. Move head sideways left.
  2. Move head sideways right.
- Continue for 16 counts.



Exercise No. IV



Exercise No. V.

III.—Position, same as in No. 1.

1. Rotate head in circle to left.
  2. Rotate head in circle to right.
- Continue for 8 counts.

IV.—Position, same as in No. 1.

1. Bend forward at hips, keep knees straight and head up.
  2. Return to original position.
- Continue for 32 counts.

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V.—Position same as in No. 1.

1. Bend sideways left, keeping heels firmly ground.

2. Bend sideways right, keeping heels firmly ground.

Continue for 32 counts.

VI.—Position, same as in No. 1.

1. Raise left leg to horizontal in front, toe point outward.

2. Return to position.

3. Same as count 1, only use left leg.

4. Return to original position.

Continue for 32 counts.



Exercise No. VI.



Exercise No. IX.

VII.—Position, same as in No. 1.

1. Raise body on toes.

2. Return to original position.

Continue for 32 counts.

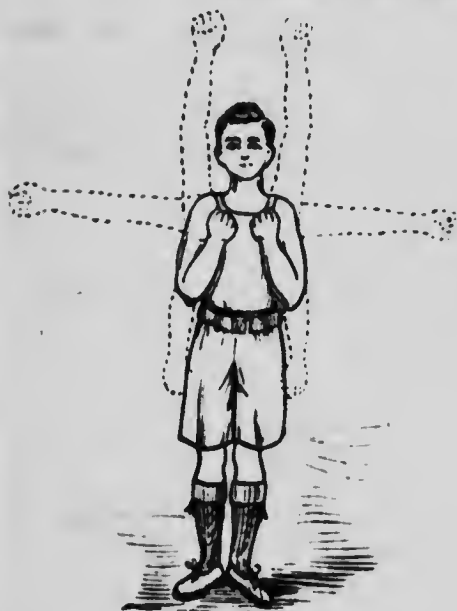
VIII.—Position, same as No. 1.

1. Raise body on heels.

2. Return to original position.

Continue for 32 counts.

- IX.—Position, heels together, body erect, arms at sides.
1. Raise arms to horizontal in front.
  2. Swing to horizontal at sides, throwing shoulders well back.
  3. Return to front horizontal.
  4. Return to original position.
- Continue for 32 counts.



Exercise No. X.



Exercise No. XI.

- X.—Position, heels together, body erect, hands clenched in front of chest, elbows at sides.
1. Thrust arms downward.
  2. Return to original position.
- Continue for 32 counts.

This exercise can be varied by also thrusting the arms out to the front horizontally, to the vertical position over head, and out sideways horizontally in line with the shoulders.

- XI.—Position, same as in No. 9.
1. Raise arms to vertical over head.
  2. Bend body at hips, swing arms down at shoulders, keeping elbows stiff, till fingers touch at toes, if possible.
  3. Return to Count 1.
  4. Return to original position.
- Continue for 32 counts.

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IX.

XII.—Position, heels together, body erect, arms at vertical over head.

1. Swing the arms in large circles inwards.

Continue for 8 counts.

2. Swing the arms in large circles outwards.

Continue for 8 counts.

The arms should be kept straight with elbows straight.

XIII.—Position, same as in No. 9.

1. Raise the arms to side horizontally, step sideways with left foot.

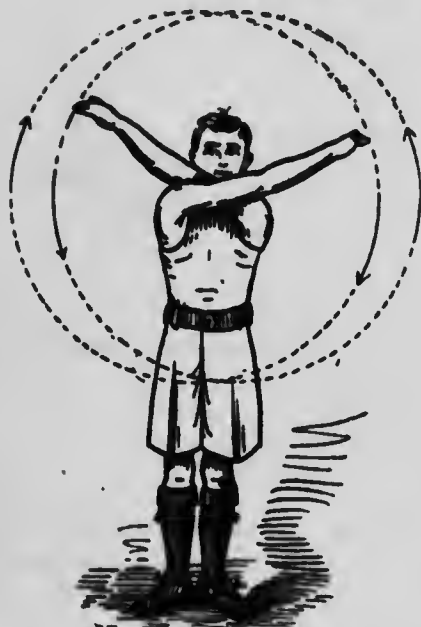
2. Bend sideways to the left, at hips, till fingers left hand touch at left toes, bending left knee slightly and keeping arms straight.

3. Return to count 1.

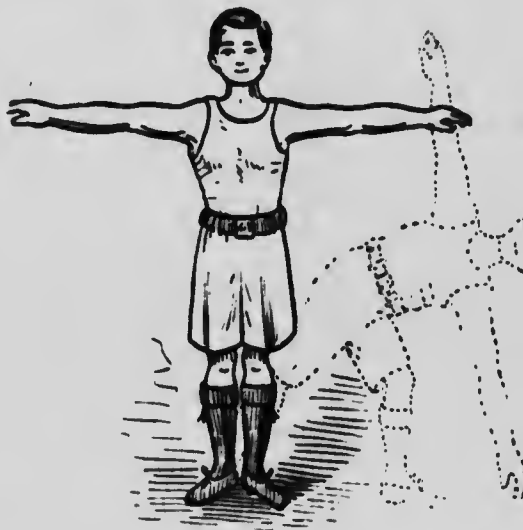
4. Return to original position.

5, 6, 7, 8, same as foregoing, only to right side.

Continue for 32 counts.



Exercise No. XII.



Exercise No. XIII.

XIV.—Position, same as in No. 9.

1. Squat, placing hands on ground.

2. Jump both legs backward together, resting weight on hands and toes.

3. Jump back to position in count 1.

4. Return to original position.

Continue for 32 counts.

XV.—Position, lie full length on back on ground.

1. Raise left leg to vertical.
  2. Return to original position.
  - 3, 4. Same only use right leg.
- Continue for 32 counts.

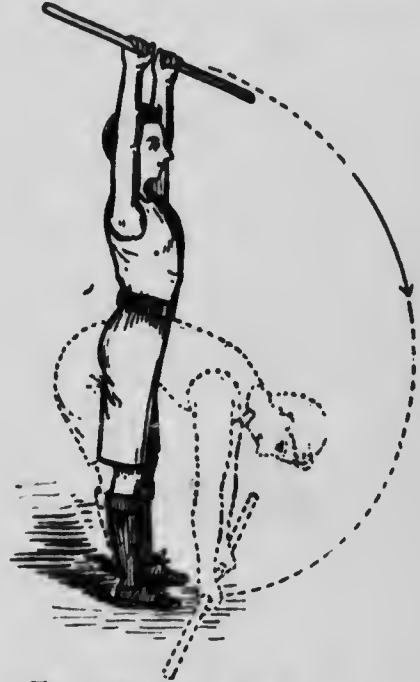
XVI.—Position, same as in No. 15, only hands under hips.

1. Raise the body to sitting position.
  2. Return to original position.
- Continue for 16 counts.

Finish by giving a minute or two of the stationary run, that is going through the movements of running but remaining all the time in the same place. Vary by putting in a few seconds



Exercise No. XIV.



Exercise with Staff No. II.

on each of the following: hands on hips, arms raised to the vertical over head, arms at the side horizontally, front horizontal, going through the running movements all the time; also by keeping knees stiff and legs straight out in front and at the rear, by bending knees and raising them as high as possible in front, heels high behind, etc. If at camp dismiss quickly after a few seconds of this exercise for the "morning dip."

## Exercises With Scout Staves

The following are a few suggested exercises for use with the Scout staff:—

I.—Position, heels together, hands grasping staff front of hips the same distance apart as the width of the shoulders and equal distance from either end. Body erect.

1. Raise staff to front horizontally.
  2. Return to original position.
- Continue for 32 counts.



Exercise No. III. with Scout Staff.



Exercise No. IV. with Staff.

II.—Position, same as in No. 1.

1. Raise staff to the horizontal over head.
  2. Bend body forward, lowering staff to in front of feet.
  3. Return to position in count 1.
  4. Return to original position.
- Continue for 32 counts.

III.—Position, same as in No. 1.

1. Raise staff to front horizontally.
2. Swing arms to left, bring left arm to side horizontally and bend right arm in front.

3. Return to position in count 1.
4. Return to original position.
- 5, 6, 7, 8. Same as foregoing only to right side.  
Continue for 32 counts.

IV.—Position, same as No. 1.

1. Raise staff horizontally over head.
2. Step backward with left foot, throw head back, looking up at staff.
3. Return to count 1.
4. Return to original position.
- 5, 6, 7, 8. Same as foregoing, only using right foot.  
Continue for 32 counts.

V.—Position, same as No. 1.

1. Step obliquely forward to left with left foot, keeping right leg straight, bending left knee, and raise staff to horizontal in front.
2. Return to original position.
- 3, 4. Same as foregoing, only stepping obliquely forward to right, using right foot.

A programme of from eight to ten exercises should be long enough for any meeting, and the following breathing exercise should be given at the close:

Inhale through the nose, rising on the toes, and raising the arms from the position at the sides, slowly through the horizontal in front to the vertical over head, and stretching as high as possible, filling the lungs to their capacity. Hold for a few seconds and expel air from lungs forcibly, shouting "Oh!" Repeat, raising arms through the side horizontal to the vertical over head.

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## CHAPTER VIII

### CANADA AND THE EMPIRE

July 1st, 1917, marked the fiftieth birthday of the Dominion of Canada. The present is thus a suitable time for reviewing what Canada has accomplished since Confederation. Canada has, of course, more than fifty years of history. It is nearly four hundred years since, in 1535, the French came first to the spot where now stands the city of Quebec. As early as 1613 the English were on Hudson Bay. From both types of pioneer effort momentous events were to flow. At Quebec the French planted that colony of New France which was to grow into the great Province of Quebec and to lead in the work of converting the Indians to the Christian faith and the earliest explorations of the great west. From the early English effort on Hudson Bay were to come in time the creation of Manitoba and the other western provinces and the extension of Canada from the Atlantic to the Pacific.

When federation took place in 1867 the new Dominion comprised four provinces: Ontario, Quebec, New Brunswick and Nova Scotia. To these were shortly added the provinces of British Columbia, Prince Edward Island, and the unorganized North-west Territories, from which were successively formed the three provinces of Manitoba (1870), Saskatchewan (1905), and Alberta (1905). During the last half century the area of Canada has increased from 540,000 to 3,729,600 square miles and her population from 3,600,000 to 7,600,000 souls. To-day Canada is the largest single state in the British Empire and represents, indeed, one-third of its entire area. Canada has, of course, a good deal of barren land in the far north, which hardly counts, but the Dominion is, as a matter of fact, larger in area than the United States and almost as large as the whole of Europe. Its area is thirty times that of Great Britain and eighteen times that of Germany.

The boundaries of Canada are very simple—an ocean on the east, one on the north, one on the west and on the south the United States. Canada stretches 3,500 miles east and west and from the American frontier, the 49th parallel of latitude



on the south to the "Farthest North." Canada has a coast line of 13,000 miles, equal to about one-half the circumference of the earth. Without including the northern territories and useless swamp lands and forests, the land area of this vast country is 1,401,100,000 acres and of these 440,000,000 acres are fit for cultivation. In many ways Canada is still an empty country. Only one-quarter of its fertile area is as yet occupied and only 31,000,000 acres, or less than ten per cent., is under cultivation.

The statistics of Canadian trade show startling growth. In fifty years the import trade has increased from \$68,564,497 to \$845,330,903 and the export trade from \$45,543,177 to \$1,151,375,768. The railway mileage has increased in fifty years from 2,278 to 38,604. The deposits in chartered banks have increased from \$33,653,594 to \$1,417,035,429.

Material gains are, however, only a part of the story. The life of the country has in fifty years deepened and broadened. A robust national spirit has matured. There is evident now a closer unity among all classes of the population in Canada. At the same time we find, too, a strengthening of the bonds which link Canada in sentiment and common interests with Great Britain and with the Empire at large. The relations of Canada with the great neighbouring Republic of the United States have grown steadily more cordial. The standards of both elementary and higher education in Canada have risen and education itself has become much more widespread. A distinctly Canadian literature has come into existence. There is growing, too, a Canadian school of painting.

#### Canada's Future

Canada, as nations go, is a young country, and young countries naturally think much of the future. It is interesting to forecast what this great young state will become in the course of the next hundred years. Sir Wilfrid Laurier once declared that as, in some true sense, it might be said that the nineteenth century had belonged to the United States, it might also be said that the twentieth century belonged to Canada. The nineteenth century saw the United States pass from the status of a young nation, still half a colony, to the front rank among the great states, and the twentieth century might see a similar transition in Canada. It is a singular fact that Canada has to-day about the population which the United States had a

hundred years ago and that this proportion has been maintained now for a good many years. The omen is promising enough. It justifies the hopeful words of his Royal Highness, the Duke of Connaught, when relinquishing, in 1916, the office of Governor-General of Canada: "Canada," he said, "has a great future. It is bound to take a leading part in the activities of the future. Canada has taken her share in the war in a most magnificent manner. It will ever be written in the records of Canada that, in the time of the greatest need, unasked and unforced, the best of Canada's sons rallied to the colours." The late Earl Grey, another of the distinguished line of Governor-Generals, said: "It is only a matter of time when Canada will be the most populous, the most wealthy and the most influential part of the Empire."

These are no days for proud boasting. We may, however, say, in sober truth, that the Canadian people have a heritage of natural wealth beyond realization by the imagination. They are themselves from earth's best stock. They have a record of worthy achievements in field and workshop. Above all, in the blood-stained battlefields of Europe they have made without grudging, in the cause of liberty, the last and greatest sacrifice which brave men can make for their deepest conviction. They have not fought for England any more than Scots and Irish have fought for England. All of them, brothers in alliance, brothers in conviction, brothers in arms, have fought for their ideals of British liberty, which all alike have inherited. The war has shown the British Empire to be one great family of nations and has knit anew ties, now never likely to be severed.

#### The British Empire

The word Empire comes from the Latin word "Imperium" which means "well-ordered rule." The British Empire is not an "Empire" under an Emperor in the sense of the term which implies a single central authority regulating the whole imperial domain as the German Emperor ruled the German Empire. There is no parliament of the whole Empire. When the different states of the Empire wish to take counsel together they gather in an Imperial Conference which has now taken permanent form and meets every four years. The title of Emperor is applied to King George V in his capacity as ruler in the far East. He is Emperor of India. But in Britain and in Canada he is King. Canada governs herself as Britain does

The King is head of the state in Canada as he is in England. Laws are made in his name. Every Canadian, like every Englishman, owes him personal allegiance. George V holds indeed a wonderful position. After his signature he places the letters "R and I."—Rex et Imperator—King and Emperor—Sovereign in the West and in the East, the head of the whole array of British peoples scattered over the world.

#### How the British Empire Grew

The vast areas of the Empire did not become British of themselves. They were made such by the courage and enterprise of our forefathers. Most of North America was at one time British. It is more than three hundred years since Queen Elizabeth issued her patent permitting English subjects to accompany Sir Walter Raleigh to the New World and promised them that they should continue there to enjoy all the rights of their English citizenship. Sir Walter Raleigh and other pioneers crossed the ocean in little cockleshells of ships, some of them of only thirty tons, in measurement no bigger than a barge. It required pluck in our forefathers to tackle a voyage like that. It took many weeks to cross the sea; and when they reached the shores of America they found it a hard and inhospitable region. The natives were warlike and treacherous. Moreover, French fought English and English fought French for the possession of North America. In other parts of the world there were also hard conditions to face. It was not till the middle of the eighteenth century that expansion was realized on a world-wide scale. As a result of the Seven Years' War, ending in 1763, India and Canada were wrested from French domination. Soon, however, Britain was nearly ruined by her foolish policy which led to the American Revolution and the creation of the United States. In spite of this, growth continued. The nineteenth century saw the creation of Australia, New Zealand, South Africa and an amazing expansion in India. To-day the British Empire contains approximately 13,663,000 square miles, one-fifth of the world's surface, with approximately 450,000,000 people, or one-fourth of the world's population.

In Europe, England and France faced each other for centuries across a narrow sea. In America also they fought for supremacy. The two nations were the intellectual leaders of the world and now in Canada the French and the English types

are living side by side, sharing a common allegiance, but serving, too, differences which time had matured in their respective homelands. If France and England produced what was best in Europe, Canada should be happy in uniting with herself the two-fold civilization of these leaders of the world.

#### French-Canadian Valour

The French made a notable record in pioneer work in America. Never was the adventurous genius of France more in evidence. Entering America by way of the St. Lawrence the French pushed on step by step to the far interior. Champlain founded Quebec in 1608. The Indians were a dread menace and, from the first, the French warred on the Iroquois, the most resourceful of all the North American tribes. Champlain explored some of the wonders of the Great Lakes. A Huron followed closely French missionaries, and many a tale of horror is told of their martyrdom at the hands of the brutal Iroquois. With the missionary went the explorer. It was the dauntless Frenchmen who first reached the Mississippi and descended that mighty river to its mouth. It was the Frenchmen who first, by the toilsome route west of Lake Superior, reached the present Canadian West. Where Winnipeg now stands, the French trader was dealing with the natives for furs before the English were in that wide-spreading land. It was adventurous Frenchmen who pressed on ever westward, trying to reach the Pacific overland, but were baulked by the mighty barrier which we know as the Rocky Mountains.

Glowing are the tales of French valour. In many a corner in Canada and over many a camp fire is still told the story of Dollard's fight with the Iroquois. In 1660 the savages bent on destroying Montreal. Dollard and sixteen other young Frenchmen went out to intercept the aggressors as they descended the Ottawa River. For a week, day and night, a little French band fought against hundreds of savages until at last every one of the Frenchmen was killed. That was a story of heroism which the Indians themselves never forgot and which still stirs one's blood. The greatest of the French heroes in Canada is Montcalm. From 1756, during four summer campaigns, he fought the British against fearful odds. Year after year he beat them. His last victory was in 1759 and it was a very notable one. Montcalm held at Ticonderoga (the French Carillon) at the head of Lake George, with

three or four thousand men, a weak fort attacked by a British army four times as great as the French. The victory of Montcalm is as notable as that which Wolfe won before Quebec in the next year. Montcalm's aim was to keep the British from pressing past him into the very heart of Canada. Six times the British tried to carry Montcalm's defences by storm, only to be pushed back again and again with heavy losses. At last they retreated with the loss of 1,944 officers and men. Of the Black Watch Highlanders, who played a chief part in the attack, nearly all the officers were killed or wounded, and three-quarters of the men. For its gallantry on this occasion, the regiment received from the King the title which it bears to-day, "The Royal Highlanders."

#### The Conquest of Canada

In the end British pluck proved not less sturdy than French valour. It was on the Plains of Abraham before Quebec, on September 13, 1759, that Wolfe, for the first and last time, met Montcalm in open battle. Wolfe had about five thousand men and he stretched them across the plain in the "thin red line" which then became forever famous. Montcalm had to meet hurriedly and with even fewer men this surprise attack. Fifteen minutes decided the issue. Both leaders were struck down. Posterity has given them a common fame and a common glory. In such a struggle there is no room for vain boasting on the part of the victors or for shame on the part of the vanquished. From that time English and French could unite to build up Canada on the basis of mutual respect.

#### The Struggle of Freedom

In one outstanding particular Canada differs from Australia: Canada has had repeated wars, while Australia has never heard within her borders the sound of battle; this makes all the more wonderful the valour of the Empire's soldiers reared under the Southern Cross on many a scarred battle field in the present war. In Canada nearly three hundred years ago, men of English blood fought men of French blood before Quebec and after that, again and again, the same story was repeated. The time came when men of English blood fought other men of English blood for Canada. The American Revolution marked a disastrous cleavage in the British Empire. The most notable colonies which any nation had ever founded took up arms against the mother land. Quebec, only sixteen

years earlier taken by an army in which soldiers from New England fought side by side with soldiers from Old England was in 1775 besieged by an American army. Quebec held and did not fall. Canada remained British. It had now, however, on its borders, a new English-speaking nation, the United States, proud, resentful, embittered against Britain.

In due time Canada had again to fight for its life. In 1812 renewed war broke out with the United States. This time Americans hoped to achieve what they had failed in 1775—1776 to accomplish—to master Canada and make the whole America north of Mexico a single state free of any political tie with Europe. For three years the war went on. There was bitter fighting on a long frontier extending from Niagara to Montreal. There were naval battles on the great lakes and duels on the sea. The story of the *Chesapeake* and the *Shannon* is one of the most famous in naval annals. The British frigate *Shannon*, under Captain Broke, fought, off Boston, the American frigate the *Chesapeake*, under Captain Lawrence. The Americans had superior equipment, the British the better training and discipline. In fifteen minutes the battle was over and not many hours later the *Shannon* sailed back into Halifax with the *Chesapeake* as a prize. That was a great day in British naval history. There was no one who did not speak with respect of the brave Lawrence who perished in the fight. Canada will remember with pride how well their forces fought on land in this fratricidal war, the last in which the British and Americans have drawn the sword against one another. The Americans were driven back on the Niagara frontier and the war settled at least one question—that there was to remain a great British state in North America. It is interesting to note that among the three nations who have fought for the possession of Canada—France, Great Britain, and the United States—have become allies in opposing German aggression and that among the side them Canadian divisions have taken their part in the great cause of liberty.

#### How the Empire Must Be Held

Let it not be supposed from the foregoing that the only way for a nation to get on is by fighting; quite the opposite. A good citizen loves peace and hates war. Decent nations and decent individuals, are not arrogant and quarrelsome, but reasonable, tolerant and peaceful. Scouts can do a great deal to promote peace. Our law says that "a Scout is a brother to every other Scout, wherever he may be, and a friend to

body." Try to carry out that idea. Write, when opportunity offers, to brother Scouts in Britain, in Australia, New Zealand, South Africa, and the United States. The boys of the United States speak, as we do, the English language and have the same ideals of liberty and justice. Get in touch with as many of them as possible. Make friends with them. The future of the world depends, in large measure, on friendship between our Empire and the United States.

Let us remember that the spirit of liberty and justice is not a weak but a strong thing. The free man is the brave man, ready to fight in a noble cause. The Roman Empire, two thousand years ago, was relatively as great as is to-day the British Empire. It had overcome many enemies, but, in the end, it fell, and for what reason? The young Romans gave up soldiering. They ceased to be manly. They paid others to play their games and they themselves looked on without the fag of playing, just as we are now doing in some of our own games. They paid soldiers to fight their battles instead of themselves learning the use of arms. They lost the sense of patriotism. They did little to help the rest of the world and they went under quickly when stronger peoples attacked them. We must see that the same fate does not befall our Empire. Whether it does or not will depend largely upon the younger generation of Britons who are now growing up to be the men of the Empire. Don't be disgraced like the young Romans, who lost the Empire of their forefathers by being wishy-washy slackers without any go or patriotism in them. Play up; each man in his place, and play the game! Your forefathers worked hard, fought hard, to make this Empire for you. Don't let their spirits behold you loafing about with your hands in your pockets, doing nothing to keep it up.

#### Our Flag

Scouts will always salute the colours (or standard) of a regiment when they pass. There are generally two such standards, one the "King's Colour," the other the "Regimental Colour."

Of course, you will always rise and salute, or take off your hat, on hearing the National Anthem played.

On going on board a man-of-war, when you reach the quarter-deck, that is the upper stern deck, always salute the ensign.

If a flag is flown half-mast, it is a sign of mourning.

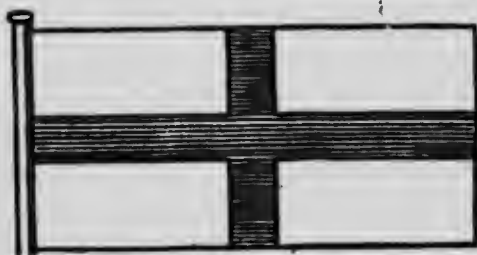
The 24th of May, the birthday of the great Queen Victoria,

is "Empire Day," and we all hoist the flag and salute in honour of the Empire on that occasion.

**THE UNION JACK.**—The Union Jack stands for something more than only the Union of England, Ireland and Scotland. It means besides the Union of Great Britain with all her Dominions across the seas.

The Union Jack is the national flag of the British Empire and is made up of the flag of St. George, a red rectangular cross on a white ground. In 1606 King James I added to the banner of Scotland, which was a blue flag with a white St. Andrew's Cross diagonal, that is from corner to corner.

In 1801 the Banner of St. Patrick of Ireland was added to the flag; St. Patrick's Cross was a red diagonal cross on a white ground so that the flag now means the union of England, Ireland and Scotland.



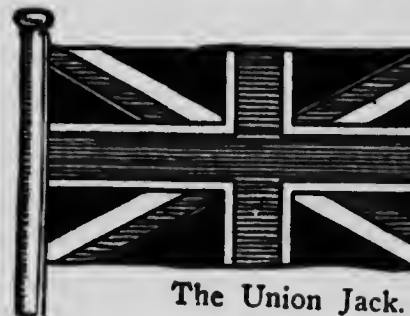
St. George's Cross.



St. Andrew's Cross.



St. Patrick's Cross.



The Union Jack.

Scouts should know the right way of flying the Union Jack. Very often one sees it hoisted upside down. Literally this is a signal of distress but ordinarily it signifies only ignorance or carelessness. The red diagonal arms of the flag have white bands on either side. On one side there is a broad white band; on the other a narrow one. The broad white band should be to the top of the flag on the side nearest the hoist. An examination of the accompanying illustration will make the meaning of this direction quite clear.



It was called a "Jack" either from "Jacques" after King James I, who first used it, or, more probably, from the "jack" or "jacket" which the knights used to wear over their armour to show to which nation they belonged.

The English knights wore a white Jack with the red cross of St. George upon it. This was also their flag.

**THE ROYAL STANDARD.**—The Royal Standard, which shows the Lions of England, the Harp of Ireland, and the Lion of Scotland, is only flown when the King or Queen is present.

**THE WHITE ENSIGN.**—The Royal Navy flies the White Ensign. No one else is allowed to do this except yachts belonging to the Royal Yacht Squadron. The White Ensign is a white flag with the Red Cross of St. George on it and a Union Jack in the corner. It is flown at the stern of the ship and a small Union Jack at the bow.

Men-of-war carry a pennant, i.e., a long thin flag like a whip lash.

**THE BLUE ENSIGN.**—If the captain of a merchant ship is either a retired Naval Officer or Royal Naval Reserve Officer he is entitled to use the Blue Ensign, if ten officers and men (inclusive of all officers or ratings) besides himself belong to the Royal Naval Reserve. He must, however, obtain a Warrant from the Admiralty granting permission to fly the Blue Ensign, and it must be noted in the ship's articles that this Warrant has been obtained. Canadian Government vessels are authorized to hoist the Blue Ensign with the Canadian Coat of Arms in the fly.

**THE RED ENSIGN.**—The mercantile marine flies the Red Ensign. Merchant vessels registered in Canada are authorized to fly the Red Ensign with the Canadian Coat of Arms in the fly. Although authorized only for use on vessels this flag is often erroneously flown on land. Boy Scouts, however, will know better than to use the marine colours on land. The Union Jack is the national flag of Canada, as of all other parts of His Majesty's dominions, and may be flown by any British subject.

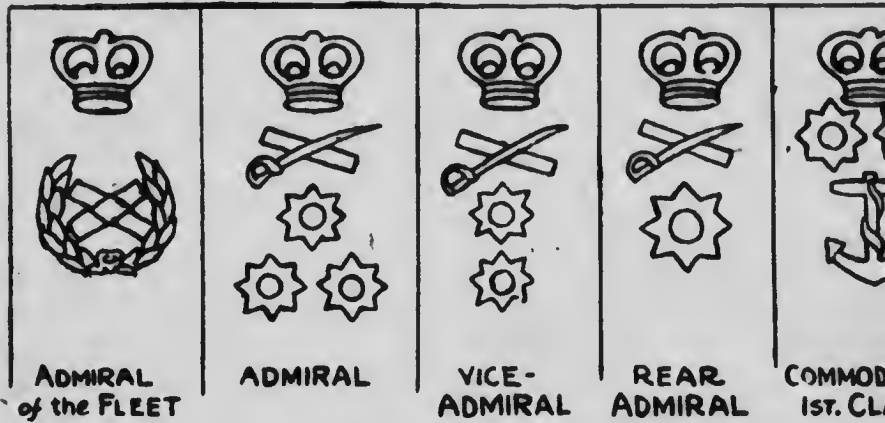
#### Our Navy and Army

The British Navy and Army have helped to make our Empire for us. Had it not been for these two fighting services the Empire would have been broken up by our enemies long ago. We must be careful to keep those services supplied with good men, men who, like the Scouts, must "be prepared" at any time to give their lives for their country.

**THE BRITISH NAVY.**—Every Scout should acquaint himself with the history and strength of the British Navy. A collection of post card photographs of all His Majesty's ships is a very interesting one to make.

You should know the badges of rank of the officers, because it is the duty of a Scout to salute officers of His Majesty's service.

The badges of rank worn on the sleeve or shoulder straps are shown herewith.



Perhaps you may like to know some facts about the uniforms of the sailors. They wear that flap collar on their backs for their survival. At one time they wore their hair in pig-tails.



Admiral    Captain    Lieutenant    Sub-Lieutenant

grease used to hold their hair off and spoil their jackets; so they wear big linen flaps on their collars which could be easily taken off and washed. They wear black silk ties around their necks as a sign of mourning for

the death of Nelson at the battle of Trafalgar; and they wear three rows of white braid on their collars in memory of Nelson's three great victories, the Nile, Copenhagen and Trafalgar. They wear baggy trousers so that they can easily pull them up above their knees when they want to wade. Some officers and sailors tattoo their arms, with the idea that when they are killed in battle they can be identified the more easily.

**THE CANADIAN NAVY.**—Following the Imperial Conference of 1909 measures were taken for the creation of a Canadian Navy. Two cruisers, the *Niobe* and the *Rainbow* were purchased from the British Admiralty as a nucleus, to serve as training ships. The Royal Dockyards at Halifax and Esquimalt were taken over by Canada. A force was enlisted throughout the Dominion to man the *Niobe* and the *Rainbow*, which were posted, one on the Atlantic and one on the Pacific coast. A naval college was established at Halifax for the training of naval cadets. Arrangements were also made with the British Admiralty by which a certain number of graduate cadets from the Halifax Naval College would be taken into the Royal Navy. Four of these cadets lost their lives while on active service in H.M.S. "Good Hope," in the action of November 1st, 1914, with a German fleet off Coronel, Chili. At the outbreak of war the *Niobe* and the *Rainbow* were both under nucleus crews. Both were, however, quickly overhauled and made ready for war service and subsequently were employed with a number of smaller Canadian cruisers for patrol duty on the Atlantic and the Pacific coast. Two submarines, which had been built at Seattle, U.S.A., on the order of the Chilean authorities, were also purchased by the Canadian Government for defence purposes.

Canadian seamen showed the stuff of which they were made in a naval incident which occurred on the Pacific coast at the outbreak of the war. Two British sloops of war, the *Algerine* and the *Shearwater* of 1,050 and 980 tons respectively, were at the time lying along side the German cruiser *Leipsic* in a Mexican port. By skilful strategy they eluded their swift and powerful enemy who set out in pursuit. Not far from San Francisco they were met by the Canadian cruiser *Rainbow* and convoyed thence to home waters. Although the *Rainbow* was no more than an even match for the *Leipsic* this ship did not risk an encounter.

#### The British Army

The British Army is made up of the Regulars or Active Army, which includes infantry, cavalry, artillery, engineers, and many other branches. The British regular army is scattered all over the world. There are in it not only white men, but black men, brown men, red men, natives of the varied regions over which floats the British flag. The Militia in Great Britain are unprofessional soldiers, who have in time of peace

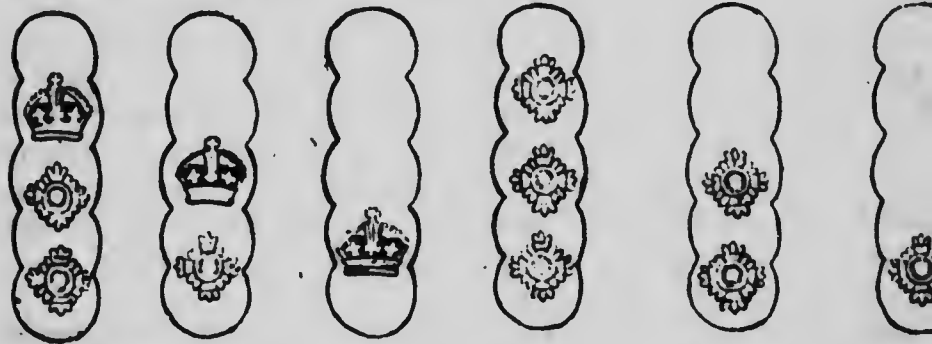
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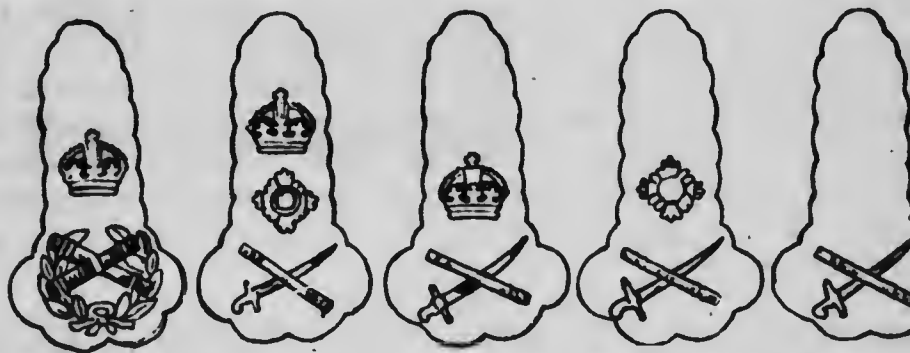
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a certain amount of military training to enable them to help the Regulars in time of war. The Militia exists also in most of the Dominions and the lesser colonies, for their own defence. Scouts should be observant so as to detect quickly the rank of a soldier. Field-marschals and generals (including major-generals and lieutenant-generals) wear cocked hats, with long white cock's feather plumes, and red tunics or black frock coats. Their swords are curved scimitars, with ivory handles. Colonels wear the uniform of their regiment with crown and star on the shoulder strap, or, in khaki, on the cuff; majors wear one crown; captains, three stars; lieutenants, two stars. You can tell in what wars soldiers or sailors have served from the colours of their medal ribbons. Below are the badges of the rank of officers in the Army.



Colonel. Lieut.-Colonel. Major. Captain. Lieutenant. Second Lieutenant.



Field Marshal. General. Lieut.-General. Major-General. Brigadier-General.

#### Canadian Military Forces

Prior to the federation of the Canadian provinces the military defence was maintained by the British Government. Regiments of the regular army were stationed at various

points in Canada and supported by local volunteer militia. After Confederation these garrisons were gradually withdrawn. The last to leave were the forces stationed in Halifax and Esquimalt respectively, withdrawn in 1906. At that time Canada assumed the responsibility for her own defence, with such assistance as might in case of war be required from the Motherland. By the British North America Act the command-in-chief of all the naval and military forces in Canada is vested in the sovereign, the control being placed in the hands of the Dominion Parliament.

The authorized strength of the permanent military force of Canada is 5,000, including the garrisons at Halifax and Esquimalt. In these days of great armies the number seems small. Before the war the actual strength barely exceeded 3,000. This force is used for the training of officers and non-commissioned officers of the militia and is also at all times available for general service. The Militia of Canada in peace times comprises volunteer corps of infantry, cavalry, artillery, engineers, etc., but it is provided by the Militia Act that all male inhabitants between the ages of eighteen and sixty years may be called on for military duty in case of necessity.

#### Canada's Part in the European War

Canada's part in the European war, its extent and value, is something which in the very nature of things is not expressible in words and figures alone. At the outbreak of the war the Dominion voluntarily undertook to raise, equip, train and forward a military force of 20,000 men. When, however, the concentration was completed it was found that not 20,000 but 35,000 had responded to the call and as the desperate character of the struggle came to be better understood authority was granted for successive increases to 50,000, 100,000, 150,000, 170,000, 250,000 and finally 500,000 men. In all 611,741 men actually passed through the Canadian military machine during the war, of whom 465,984 were volunteers, a stupendous undertaking for a country of our population. The Canadian soldiers have won imperishable renown for themselves and for Canada through their valourous part in the mighty struggle. The people left at home helped in providing the things with which to fight, including the financial resources to meet the tremendous outlay involved; old and young in Canada thus doing their "bit" towards hastening the time when victory should finally crown the allied cause.

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## CHAPTER IX

# PATRIOTISM AND CITIZENSHIP

### Rights and Duties of Citizenship

Since the central aim of the Boy Scout Movement is to make good citizens, it is fitting that at least one chapter of the present Handbook should be devoted to the privileges and duties of citizenship.

All boys of Scouting age have rights which are recognized at law, and all have duties. Every child born in Canada of a father already a British citizen, whether himself born in Canada or in any other part of the British Empire, has as part of his birthright the right to be known as a Canadian; and the children of foreigners who have become naturalized British citizens have the same right. Every child is entitled to live, to be fed, clothed and educated and, if the parents or relatives cannot perform these duties towards him, the community will manage in some way to do it for them. Certain other rights are not acquired until the young Canadian has reached the age of twenty-one years. When, however, he has come to that age he is regarded by the state as a man and is given the full standing of a citizen. He has the right to enter into legal contracts, to sue and be sued in a law court, and, in most of the Canadian provinces, the right without property qualification to vote in federal, provincial, and municipal elections and to become a candidate for public office.

Britons everywhere are proud of their nationality and of the security it has ever afforded them against oppression. Under the Roman Empire, the greatest of the dead Empires of the past, the privileges of full citizenship were reserved for a favoured few. But in the British Empire it is the many and not the few who are citizens. Even those born under other flags than our own, who come to make their homes within the Empire, may easily become naturalized subjects of His Majesty George V by complying with simple and inexpensive regulations.

The personal authority of the King in public affairs, which was in earlier times almost complete, has gradually diminished

until it may now be said, with truth, that the King reigns but does not govern. He is the head of the State, the descendant of a long line of kings, the representative of the dignity of the nation. In him centre the majestic traditions of Britain's history. But his people govern themselves through their elected representatives. If, at any time, they are not well governed they have only themselves to blame.

In earlier times men were burned at the stake in England for holding to their conscientious religious beliefs. Now, in all parts of the British Empire, there is the most complete freedom in regard to religion. We have, too, freedom of speech and freedom of the press. Liberty is the great gift which the British peoples possess and have helped to bring to others. Our liberties were won for us by the determined will of our ancestors. If there be aught which still bars the way to fullest freedom and justice, we have the cure in our own hands, for we can set things right by the exercise of our freedom as voters.

As long as the British peoples are loyal to their great past, it remains solidly true, to use the great words of Abraham Lincoln, that "Government of the people, by the people, for the people, shall not perish from the earth." The British would not be freer under any other form of government than that which they have to-day. Canada has the fullest rights of self-government, rights patterned on those which the people of the Motherland themselves enjoy.

#### British Patriotism

Patriotism is a much abused word. There is a boastful, swaggering, intolerant spirit of dislike and contempt for other countries, a spirit of hate, which tries to disguise itself as the spirit of patriotism. But the true patriotism is based on sacrifice. "It is sweet and pleasant to die for one's country," says the Latin proverb. Why? Because no true boy or man lives for himself; because the good citizen counts his own interests as nothing compared with the well-being of the whole. To each of us life is precious; but other things, honour and duty, are more precious; and this is why millions of Britons, among them some half million of Canadians, have volunteered to die, if need be, on the field of battle, in order to save their country. The patriot's heart is filled with this love and zeal for his country. His ruling passion is for the good of his country.

Our patriotism rests on the reverse of compulsion—on honour, freedom, and justice. Herein lies the secret of its enduring strength. It is fortified by a just pride in our past, by the resolve to be true to the tradition created by those who have gone before us.

On the eve of the European War, the German Chancellor contemptuously referred to Germany's signed guarantee to respect the neutrality of Belgium as "a scrap of paper," which might under war conditions be disregarded. Great Britain's attitude on this memorable occasion was different. Without pausing to reckon the cost, her statesmen faced war against all the might and force of Germany, rather than break Britain's pledged word to little Belgium. The suddenness of Germany's onslaught left no time for consultation with Canada and other parts of the Empire. But Britons everywhere were true to themselves and the British government was backed in its momentous decision by the public opinion of the whole Empire. As the full significance of the mightiest of wars came into clearer view, it was seen that the contest was in reality a fight, to the finish, let us hope, between the cherished belief of Britain, France, the United States and other free nations, in the principles of liberty and justice, as against the brutal German teaching that might makes right.

Even if Kaiser Wilhelm has tried to murder us, we still owe him a debt of gratitude for having brought into clear light the unity of the British peoples in their views of truth, liberty and justice. Never before was there such an array in arms of many peoples under one flag, of men from Australia, New Zealand, India, South Africa, Canada, and the British Isles, united in a gigantic fight for their own freedom and that of the world. Our Empire is like a bundle of sticks, capable of being broken if each part is taken separately; but when the parts are bound together tightly by the true spirit of patriotism, the bundle as a whole is unbreakable.

#### The Good Citizen

It is the duty of every Canadian Scout to find out how his country is governed. Canada has a system markedly different from that of Great Britain. Great Britain is governed under a single parliament in which all authority is centred. Canada, on the other hand, is a federation in which authority is divided between the central federal Parliament at Ottawa and a Parliament in each of the provinces. At Ottawa the tariff, the



Post Office, the army, Canada's relations with Great Britain, and other interests of a national character are looked after. The Provincial Parliaments control interests of a more local and personal nature, such as education and the government of cities, towns and villages. It is the duty of the good Canadian citizen to understand and to watch the working of all branches of government, from that at Ottawa to that of his own town or village. Though he may be only one person in the great total of Canada's population, and may, perhaps, have little taste for public affairs, it will not do for him to leave politics only to the politicians. If he does, he will not be living up to the spirit of the Scout's promise. Each of us has a duty to the King in peace as well as in war. The best system of government in the universe will be ineffective if we sit down, do nothing, and imagine that the affairs of state will take good care of themselves. They won't.

Family life teaches us daily its lessons of consideration for the other members of the household; and the well-ordered state is, after all, but a larger household in which each has the same two-fold daily obligation to fulfil, his duty to himself and his duty to others. The good citizen never shirks the responsibility of doing his share in all spheres, in the family as well as in the state. Just as the members of a family, by their bearing, earn the respect or incur the condemnation of others, so the citizens of a state, by their conduct or misconduct, bring credit or discredit upon the nation. Great Britain's high standing among the nations does not come from wealth and power alone. It comes from the character of her citizens. In the Far East the word of honour of an Englishman is accepted as if it were an oath.

No matter what our station in life may be, we all have, apart from our personal and family affairs, a public responsibility as citizens. Always duty may call for personal sacrifice. In private life we have to stand by our friends and relatives. During war-time we may be called on to serve our country in battle. It is part of the duty of the good citizen to fit himself for this emergency by military training in early life. If we are not called on for military service, we can help our country in other useful ways. The good citizen realizes that his own convenience and advantage must give way to the interest of the community as a whole. The spirit of patriotism,

which is the spirit of sacrifice, calls him to seek not his own good alone, but the greatest good for the greatest number.

The most powerful force in a free state is public opinion. Governments are made and unmade. Well-informed public opinion is the country's best safeguard against wrongdoing. Unintelligent opinion is fraught with gravest danger. Let then every Scout study to fit himself for the responsibilities of citizenship. If public opinion is to be sound it must be made by those who have real insight into the needs and responsibilities of the community as a whole.

#### Public Affairs

A great many fellows make no effort to fit themselves for independence of thought in public affairs. They simply adopt the political beliefs of their fathers or their employers or their friends. To think for oneself requires effort. It is so much easier to take our views on public matters from the morning paper with our coffee at breakfast than to ponder these things for ourselves! We need to be always on guard. Prejudices may lead us astray. We may be misguided by visionaries and extremists. The best type of citizen tries to acquaint himself with the divergent points of view on public questions and then to make up his own mind. This careful thought is particularly necessary in a country like Canada. Its population is more varied than, for instance, the population of England. People of widely different races, of widely varying religious beliefs, have come to live in Canada and in such circumstances passion and prejudice are especially harmful.

To make your influence felt, it is generally better to ally yourself with some political party and then to vote and work with your group as long as it stands for clean and progressive methods and measures of government. There is unfortunately an extreme type of party man whose motto is "My party right or wrong." When partyism reaches this point, it is apt to do more harm than good. Loyalty is one of the finest of human qualities. But even loyalty may be perverted. Co-operation with others is necessary in the handling of public affairs, for union makes strength. But let every party man be on guard, to discover and oppose any tendencies to yield to the dishonourable methods which unfortunately are all too common.

Besides acquainting themselves with the conduct of national politics, Scouts should study provincial and local affairs, which often come closer home to us in our daily life than do the

wider national affairs. We should learn to take pride in the place where we live. Such pride will make steadily for improvement. Civic pride will result in well lighted streets, proper traffic regulations, and efficient means of communication. It will mean pure water, the absence of slums and unhealthy dwellings, the maintenance of open spaces in the form of parks and playgrounds. It will mean proper hospitals for the sick, care for all other forms of distress, and the fullest use of the community's natural advantages for both business and residential purposes.

The control of provincial affairs calls for public spirit and business capacity and there is nothing "provincial" or narrow in a healthy rivalry between the different provinces of the Dominion as long as it is rivalry in efficiency. Happily the flame of zeal for public welfare burns everywhere in some breasts. May the number of such good citizens ever increase. May others follow them in the path of high service and noble endeavour.

Canadians are justly proud of their country, of its extent from sea to sea, of the richness and variety of its material resources, of the enterprises of its people, of its free self-government. To-day they have a new and deeper source of pride. Above all value given to material things is the present spirit of the Canadian people. They have been called to take part in a mighty struggle for world freedom. Canada's sons from sea to sea have rallied to the colours in the Empire's hour of need and have shown indomitable courage on the field of battle. Great to Canada has been the cost of the war both in blood and in treasure. The sacrifice, however, is a duty and a privilege. Who can estimate its effect upon us as a people and the influence it will have upon the rising generation? The examples it furnishes of patriotism in its loftiest form will never be forgotten.

Let the training of our youth then take fullest account of both the privileges and the responsibilities of citizenship. May our sons realize what it is to be at once Canadian and British; and may our politics, national, provincial and municipal, be purified and elevated. Let the training in our schools be not less a training in high character than for material success. Thus only can we be sure of making the rising generation worthy of a noble past, worthy of those through whose self-sacrifice Canada has been gained for the British Crown, developed and preserved.

## CHAPTER X

### THE HONOUR OF A SCOUT

*"I trust you on your honour to keep this promise."* In these terms every Tenderfoot is received by his Scoutmaster into the great brotherhood of Scouts.

A Scout is always on his honour—not only when he is in uniform and taking part in the patrol activities, but equally so at home, at school, at work or play. For Scouting aims to produce a type of personal character so high that every action of one's life will be controlled by the spirit of fair play. No matter how many badges he may wear a Scout must be doing his very best to live up to the Promise and Law, or he is no true Scout. The Scout Promise and Law have been described as the moral groundwork of the whole Scout Movement. They are also the moral groundwork for the training of individual Scouts.

Notice the wording of the Law. It tells what a Scout is. He is described as honourable, loyal, useful, friendly, courteous, kind to animals, obedient, cheery, thrifty, and clean. Unless he is really trying to live up to these requirements he is not playing the game; his honour is not to be trusted. Notice also this point that unlike the ordinary laws of the land this Law of the Scouts is not made up of things forbidden; it is instead a trumpet call to high endeavour. Let not this feature, therefore, of Scouting be overlooked, for Scout training which does not take proper account of the character forming side of the work overlooks the central aim and purpose of the whole Movement.

The knightly orders of ancient chivalry were sworn to uphold their honour at all costs and it is from the rules of knighthood that the laws of the Boy Scouts have been derived. In medieval times there were many tyrants—not, indeed, without their imitators in these days—who believed that might makes right, "that they should take who have the power and they should keep who can." Knighthood, however, opposed itself to this selfish doctrine and taught that it was the duty of the strong to defend the poor and those who could not defend

themselves. When the country was at peace the knight used to ride out daily as a "knight errant," looking for the chance of doing a good turn to any in need of help. His desire was "to live pure, right wrong, speak true, follow the King." The knights of old were the patrol leaders of their day and their men at arms the Scouts. Like the Scouts, they were pledged to do a good turn to somebody every day. Their patron saint was St. George and their battle cry "For Saint George and Merrie England."

**Chivalry**



Ancient chivalry.

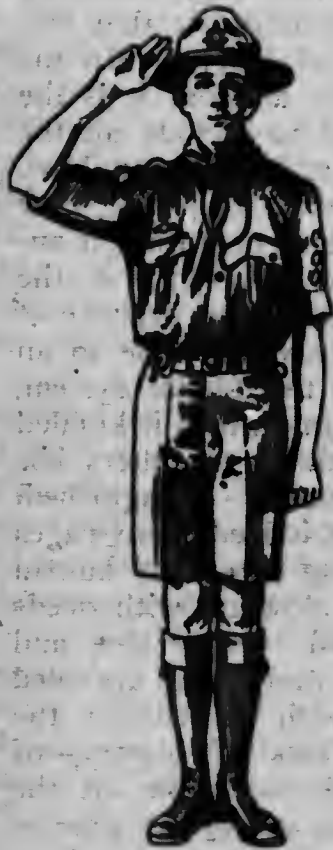
The term chivalry was first used to signify that gallantry in battle and high sense of honour in daily life that was expected of knights. In the training of a Scout it is the term used to include all the precepts of the Scout Law. The boy who keeps the Law is chivalrous, or, to put it another way, chivalry is the Scout Law put into practice.

Early chivalry came to an end with the feudal system, but the flame which it kindled of helpfulness to others has never been extinguished. There are, indeed, many pages in the long record of human progress glowing, with deeds of exalted self-sacrifice and service. Many pages are filled besides with records of the lesser events of history—of individual endeavour, of the sacrifices made by parents for their children and of one generation of our race for another.

Canadians of this generation, and of those yet to come, should never forget the pioneers, both of French and British origin, who opened this great Dominion to settlement. Remote from friends and family connections, besieged by the rigours of winter, confronted at times by savage native tribes, facing

the dangers of unknown forests, lakes and streams, the early settlers endured and finally by their toil and pluck overcame countless difficulties that their children's children might possess this glorious heritage which is ours to-day. There is something of the sublime too in the dauntless faith with which the pioneer missionaries, many of them men of high education and refinement, made their way into hostile Indian encampments and willingly gave up even their lives in order that they might carry the message of Christianity to the savages.

### The Challenge of the Present



The modern knight errant.

Times change and the conditions of life which confronted the Knights of the Round Table, the Crusaders, and the pioneers of settlement and religion in North America, no longer exist. Yet is there continuing need for the spirit of chivalry in our homes, on the street, in our games and sports, in our public life and in business and commercial affairs; and it is one of the aims of the Boy Scout Movement to keep alive amongst us the rules of fair play which have done so much for the moral tone of our race.

The Boy Scout Movement, in the words of an American writer,\* is a call to boys to-day "to become in spirit members of the order of chivalry, and a challenge to them to make their lives count in the communities in which they live—for clean lives, clean speech, clean spirit, clean habits and clean relationship with others. It is also a challenge for them to stand for the right against wrong, for the truth against falsehood, to help the weak and oppressed and to love and seek the best things of life."

\*John L. Alexander, in the Handbook for Boys of the Boy Scouts of America.

The Scout Promise

The following is the promise to which every Scout pledges his best fulfilment:

*On my honour I promise that I will do my best—  
To do my duty to God and the King,  
To help other people at all times,  
To obey the Scout Law.*



Scout Investiture.

Duty to God, it will be observed, stands in the very forefront of the promise. No man is much good unless he believes in God and tries to put his belief into practice. The knight of old was at once the servant of God and the King. Before receiving knighthood his custom was to spend the whole of

the preceding night on his knees in prayer that God might make him worthy of his high estate. In like spirit Scouts should seek God's help that they may be enabled to serve Him worthily under all the changing circumstances of life.

The standard set by the Scout promise is not one which is impossible of fulfilment. All it asks, after all, is that a fellow should *do his best* to qualify by practice for that highest type of true manhood which is known among Britishers as a gentleman.

If you are going to keep any law you must first find out what it means. A good Scout knows the laws by having practised them and Boy Scouts will find this the best way of learning; in fact it is the only way of obtaining their full significance and satisfaction. You can't either learn or continue to be a Scout without practice.

#### Honour



"Women and Children First."

What, after all, is our honour? In the investiture ceremony this question is asked of every boy before his admission to membership; to which the Tenderfoot replies: "It means that I can be trusted to be truthful and honest"—or words to that effect.

There are, unfortunately, very many people who think of honour in quite a different sense. There is a counterfeit kind of honour which is built on reputation,



that is to say, on what others think us to be. Genuine honour rests, however, on sound character, on doing the right thing under all circumstances not only when there are others looking on to applaud or blame, but when God alone knows and sees. The true Scout is of this latter type.

A man who is honourable is always to be trusted; he will never do a dishonourable action, such as telling an untruth or deceiving his superiors or employers, and always commands the respect of his fellows. His honour guides him in everything that he does.

A captain sticks to the ship till the last, in every wreck that was ever heard of. She is only a lump of iron and wood; his life is as valuable as that of any of the women and children on board, but he makes everybody get away safely before he attempts to save his own life. Why? Because the ship is in his charge, and he has been taught that it is his duty to stick to it, and he considers it would be dishonourable in him to do otherwise; so he puts honour before safety.

A notable example of this same spirit was manifested by a party of twenty British Scouts serving as signallers and messengers on board the hospital ship "Britannic," sunk in the Aegean. These lads declined to leave the sinking ship with the women and children. One boy was on the bridge, at what he understood to be his post of duty, and another in the wheel-house. Orders were given to remove them but still one of them persisted that it was his duty to remain and in the end he had to swim. Patrol Leader Ireland, one of this party of Scouts, was awarded the Cornwell Badge for his bravery. So should every Scout value his honour above all else.

"Women and children first" is the command given when those on board ship are forced through disaster to take to the boats and there is nothing finer in all the annals of chivalry than the heroic self-sacrifice shown by men for the safety of women and children in peril at sea.

#### Loyalty

Loyalty was, above all, one of the distinguishing points about the knights. They were devotedly loyal to their King and to their country, and always ready to die in their defence. In the same way a follower of the knights should be loyal, not only to the King; but also to every one who is above him, whether his parents, his officers, or employers, and he should

stick to them through thick and thin as part of his duty. If he does not intend to be loyal, he will, if he has any honour and manliness in him, resign his place.

No Scout who is an employer should take unfair advantage of any workman in his employ.

A true Scout is loyal to his friends and should stand by them in evil times as well as in good times.



Jack Cornwell, V.C.

Loyalty to duty of the highest order was shown by Jack Cornwell, the Boy Scout hero, who met his death at the post of duty in the great naval battle between the British and German forces off the Jutland coast, known as the Battle of Horn's Reef, on June 1, 1916.

Admiral Sir David Beatty says of him in his despatch on

the above battle: "Boy (1st class) John Travers Cornwell, of the Chester, was mortally wounded early in the action. He, nevertheless, remained standing alone at a most exposed part, quietly awaiting orders till the end of the action, with the gun's crew dead and wounded all around him. His age was under 16½ years. I regret that he has since died, but I recommend his case for special recognition in justice to his memory and as an acknowledgment of the high example set by him."

The Captain of the "Chester" in writing to Cornwell's mother, says of him: "His devotion to duty was an example for all of us. The wounds which resulted in his death within a short time were received in the first few minutes of action. He remained steadily at his most exposed post at the gun, waiting for his orders. His gun would not bear on the enemy. All but two of the crew of ten were killed or wounded, and he was the only one who was in such an exposed position. But he felt he might be needed—and indeed he might have been. So he stayed there, standing and waiting, under heavy fire, with just his own brave heart and God's help to support him."

Jack Cornwell was a member of the St. Mary's Mission (Manor Park) Troop, and a keen member too. His mother says: "He was so attached to the Scouts, and so proud of his badges when he brought them home. I have often thought that what he learned with the Scouts helped him a lot in the Navy." A friend of Cornwell on the "Chester," himself wounded in the great battle, writes: "He was my chum, and no fellow could wish better; in fact, he was a real Scout. We often used to sit under one of the big guns in the evening, chatting about Scouting."

The Victoria Cross, the highest award for bravery, was presented by the King to Scout Cornwell's mother in recognition of her son's heroism. His fine example has also been commemorated in the Scout Movement through the institution of a special award known as the Cornwell Scout Badge.

Jack Cornwell proved by the manner of his death, as many other Scouts have done in the great war, his loyalty to the second Scout Law. So, too, it is expected of all Scouts that when duty calls they will not flinch from difficulty, self-sacrifice or danger, but in life or death make good in action the principle of steadfast loyalty for which Scouting stands.

## Service

The Scout Movement has sounded a ringing call to boyhood the whole world over to unselfishness and service. The world has no use for people who live only for themselves. There is nothing more unlovable than selfishness. The heroes of every nation from ancient times to our own day have been those who have sacrificed themselves for others. The highest of all forms of happiness is found in helpfulness to others and Scouts who are living up to the third Scout law know that this is true. They have proved it by experience.



A Scout's duty is to be useful and help others.

Often it happens that boys think they cannot do things when they've never tried and really don't want to. There are two stages in every action of our whole life: the first, mental and the second, physical. Even in such a simple matter as walking up street we must first give our legs their marching orders before they will take us to our destination. In some things, however, our minds must be very firmly made up before we can accomplish what we have set out to do. Of course, one may be ever so willing to help another out of difficulty but if you don't know how your willingness, after all, is of no use. You couldn't save your dearest friend from

drowning unless you yourself knew how to swim and to support another in the water.

The motto of the Scout Movement is, "Be Prepared," which means that you are to be always in a state of readiness both in mind and body to do your duty—readiness in mind by having the willingness to do your part and by having thought out beforehand the accidents or other emergencies that may arise so that you may know the right thing to do; readiness in body by making yourself strong and alert and able to act whenever an emergency occurs. Scouting not only urges its members to be prepared but it teaches them how.



A Scout is a Friend to All.

Every Scout "must try his best to Do at least one good turn to somebody every day." "It does not matter," as Roland Phillips has written in his admirable little volume of Letters to a Patrol Leader on the Scout Law (see p. 616), "whether the Good Turn is a big one or a small one, whether it takes a long time or whether it takes a short time, whether it is difficult or whether it is easy. The only thing that matters is that the Scout is moved by a spirit of sacrifice and of service, and that he goes about the world more gladly because he knows that a Scout's Duty is to be useful and to help others." After all, happiness is built chiefly on the genial smiles, the little kindnesses of thought and word of those about us. "If," as has been said, "we make the apparently trivial events of life

beautiful and good, then our whole existence will be full of harmony and sweetness. Learn to think of others before thinking of yourself and you will have friends enough, and of the best."

#### Friendliness

The honours of ancient knighthood belonged alone to persons of noble birth. Membership in the great brotherhood of Scouts is open, however, to boys of all classes and the Chief Scout's desire is that Scouts everywhere shall earn the name which Kim gained for himself of "Little Friend of all the World." Making friends, like everything else in life that is worth while, involves effort. Some fellows are slow in making friends by reason of an inborn diffidence or sensitiveness which they should, however, strive to overcome. Others are naturally so friendly that popularity comes to them without the seeking. True friendships are among the greatest blessings that God has given to mankind and the fellow is to be pitied who goes through life without them. The fourth Scout Law is intended to be an active one, and Scouts are expected to be ever on the lookout for opportunities of putting it into practice. After all one seldom has far to seek in any company for strangers, or others, in need of the cheer that a kindly greeting never fails to bring.

#### Courtesy

It is significant that Scouting was carried from England to the United States through a courtesy rendered to an American visitor in true Scout fashion by a London Boy Scout.

Not only is courtesy a good habit to form for the pleasure it gives to its possessor, but courtesy also makes friends and helps greatly in one's success in life.

The knights of old were particularly attentive in respect and courtesy to women. Sir Nigel Loring in "The White Company" is a type of a chivalrous knight of the old times. Although very small, and half blind by reason of some lime which an enemy had thrown in his eyes early in his career, he was an exceedingly brave man, and at the same time very humble, and very helpful to others. But, above all things, he revered women. He had a big, plain lady as his wife, but he always upheld her beauty and virtue, and was ready to fight anybody who doubted him. Then with poor women, old or young, he was always courteous and helpful. And that is how a Scout should act.

King Arthur, who made the rules of chivalry, was himself

chivalrous to women of whatever class. One day a girl rushed into his hall crying for help. Her hair was streaming and smeared with mud, her arms were torn with brambles, and she was dressed in rags. She had been ill-treated by a band of robbers who roved the country, doing all the harm they could. When he heard her tale, King Arthur sprang on to



A Scout is courteous.

his horse and rode off himself to the robbers' cave, and, even at the risk of his own life, he fought and defeated them, so that they could no more trouble his people.

When walking with a lady or a child a Scout should always have her on his left side, so that his right arm is free to protect her. This rule is altered when walking in the streets; then a man will walk on the side nearest to the traffic, to protect her against accident or mud-splashes, etc. In meeting a woman or a child a Scout should, as a matter of course, always make way for her, even if he has to step off the pavement into the mud.

So also, in riding in a crowded car, no man worthy of the name will allow a woman or a child to stand up if he has a seat. He will at once give it up to the woman and stand himself. As a Scout you should set an example in this by being the first in the car to do it. And in doing so, do it cheerfully, with a smile, so that she may not think you are annoyed at having to stand. If you are sitting down and a lady comes into the room, stand up, and be on the lookout to see if you can help her in any way.



A Scout is kind to animals.

When in the street always be on the lookout to help women and children—and don't accept any reward. Of course, in accidents men and boys will always see that the women and children are safely got out of danger before they think of leaving themselves, and it is very noticeable how carefully arrangements are made on ship board for saving the women and children and old people in case of wreck before any idea is given as to how the men are to be rescued.

#### A Friend to Animals

In order to live up to the requirements of the sixth Scout Law you must first know something about animal life and habits. We cannot be friends with people whom we do not know, and this is true as well of our relations with the domestic animals and the wild life all about us. The more we



understand about animals the fonder we become of them. Much of the cruelty practised by boys towards dumb creatures is the result of thoughtlessness and ignorance.

It is wonderful the capacity that many of the members of the brute creation have for friendship and the instinct they have for distinguishing between friendly and unfriendly intent. Some of the finest qualities of human nature are very highly developed among dogs. A man's friends may turn against him, but never his faithful dog. Scouts are expected to set a high standard of kindness to all dumb animals and, of course, it goes without saying to kill only when necessity compels.

#### Obedience



A Scout obeys orders.

Discipline is as important as bravery for Scouts and soldiers. *A Scout obeys the Orders of his Parents, Patrol Leader or Scoutmaster without question, and the Chief Scout has added that, even if a Scout gets an order he does not like, he must do as soldiers and sailors do, he must carry it out all the same because it is his duty; and after he has done it he can come and state his reasons against it. But he must carry out the order at once. That is discipline.*

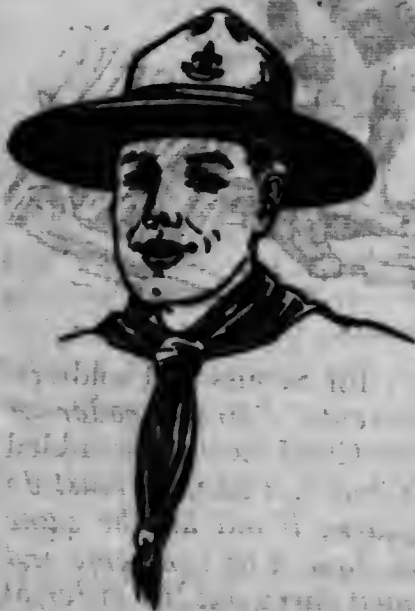
Obedience to our parents is something that most of us have been taught from our babyhood and need not be dwelt on

here. Obedience to our parents is the beginning of all forms of respect to lawful authority. But obedience is a lesson some people never learn and thereby bring much unhappiness on themselves and others. Whether it is in work or play, obedience to orders is vital to success. No one is fit to command who has not first learned to obey. Everyone, of course, finds it easier to obey the orders of a beloved captain. Officers who themselves give an example of instant obedience to duty have little trouble; as a rule, in having their own orders carried out.

The highest form of discipline is self-discipline and this is something all Scouts should endeavour to attain. The self-disciplined man is described by Browning as:

"One who never turned his back, but marched breast forward;  
Never doubted clouds would break;  
Never dreamed, though right were worsted, wrong  
would triumph;  
Held, we fall to rise, are baffled to fight better,  
Sleep—to wake."

#### Good Temper and Cheeriness



A Scout smiles and whistles.  
part of your duty as a Scout.

Benjamin Franklin said: "Money never yet made a man happy and there is nothing in its nature to produce happiness." The truth is that happiness is a state of mind rather than a state of one's pocket book. Those only are truly happy whose minds are fixed on something higher than the satisfying of their own selfish desires.

The knights laid great stress on being never out of temper. They thought it bad form to lose their temper and to show anger. If you do your work cheerfully, your work becomes much more of a pleasure to you, and also if you are cheerful it makes other people cheerful as well, which is Sir James Barrie writes: "Those

who bring sunshine to the lives of others, cannot keep happiness from themselves," which means, if you make other people happy, you make yourself happy.

If you are in the habit of taking things cheerfully you will very seldom find yourself in serious trouble, because if a difficulty or annoyance or danger seems very great, you will, if you are wise, force yourself to laugh at it, although it may be very difficult to do so at first. Still, the moment you do laugh, some of the difficulty seems to disappear at once, and you can tackle it quite easily. Good temper can be attained by a boy who wants to have it and it will help him in every game and occupation under the sun.

**Thrift**



*A Scout is thrifty.*

It is a funny thing that among the boys who will read these words, some of you are certain to become rich men, and some of you may die in poverty and misery. It just depends on your own selves which you are going to do. The fellow who begins making money as a boy will go on making it as a man. You may find it difficult to do at

first, but it will come easier later on. But if you begin and go on you are pretty certain to succeed in the end—especially if you get your money by hard work. In order to get money you must expect to work. A well known English actor used to say in one of his plays, "I don't know what is wrong with me. I eat well, I drink well, and I sleep well; but somehow

whenever anybody mentions the word 'work' to me, I get a cold shudder all over me." That is what happens to a good many chicken-hearted fellows. When any work faces them they "get a cold shudder all over them." Any number of poor boys have become rich men. But in nearly every case it was because they meant to do so from the first. They worked for it, and put every penny they could spare into the bank to begin with. So each one of you has the chance, if you like to take it. Boys are not too young to work for money and in Canada there is little difficulty in most places in finding work in a boy's spare time that pays.



The knights of old were ordered by their rules to be thrifty, that is to save money as much as possible; not to expend large sums on their own enjoyment, but to save it in order that they might keep themselves, and not be a burden to others, and also in order that they might have more to give away in charity. If they had no money of their own, they were not allowed to beg for it; they had to work and make it in one way or another.

Thus, money-making goes with manliness, hard work and sobriety.

#### Purity

*A Scout is Clean in Thought, Word and Deed.*

The tenth Scout Law is among the most important of them all, yet the hardest to keep and in most cases it is only by fighting temptation manfully, whenever it comes, that you will succeed. The fellow whose mind gives lodgment only to clean thoughts is not likely to fall into offences of word and deed, for it is the mind

that controls both what we say and do. With many boys, however, the whole period from twelve to twenty is a stormy one.

Of course, it is much easier for fellows to keep this law who travel with a clean crowd. It is at this stage in boy life that Scouting interests prove most helpful with their appeal to the manly, active side of every fellow's nature. No Scout can expect to live up to the tenth law without having at times to fight hard and to keep on fighting, even if sometimes temptation for the moment seems to be getting the better of him. When your own power of resistance is unequal to the occasion do not fail to seek God's help and you will find that He will never fail you in the hour of need.

#### The Law in Practice

The grosser forms of misconduct are forbidden by the laws of the land. But apart from these latter there is a code of honour which all men of principle impose upon themselves, comprising the unwritten laws of fair play, the striking of a right balance between what they owe to themselves and others. This is the type of honourable character which Scouting is designed to produce.

One meets, on the other hand, many fellows who are drifting along without any fixed principles to guide them. Such persons get nowhere and accomplish nothing. How nobly different is the career of the boy who is *doing his best* to live up to his promise as a Scout. He has resolved in boyhood on the code of principle he is to take with him through life. He has determined to do something with his life that will make it worth while. He knows beforehand that his journey cannot be all smooth sailing: no life with a purpose ever is. But when the storms of difficulty and opposition beat upon him he has a sure chart to steer by, one that will never lead him astray. And so he comes at last to the land of his desire and gains the satisfaction of duty done and the respect of all about him.

## CHAPTER XI

### SCOUTING GAMES AND PRACTICES

Instruction in Scouting should be given as far as possible through practices, games and competitions. Games should be organized mainly as team matches, where the patrol forms the team, and every boy is playing, none merely looking on. We do not want to have merely one or two brilliant performers and the others taking no part at all.

All ought to get practice, and all ought to be pretty good. In competitions where there are enough entries to make heats, ties should be run off by losers instead of the usual system by winners, and the game should be to find out which are the worst instead of which are the best. Good men will strive just as hard not to be the worst as they would gain a prize, and this form of competition gives the bad man most practice. Strict obedience to the rules should be insisted on as instruction in discipline.

The rules here given as to games may be altered by Scoutmasters, where necessary, to suit local conditions and the ideas herein contained are, in fact, merely offered as suggestions upon which it is hoped that instructors will develop further games, competitions and displays.

*Remember that the boy, on joining, wants to begin Scouting right away; so don't dull his keenness, as is so often done, by too much preliminary explanation at first. Meet his wants by games and Scouting practices, and instil elementary details bit by bit afterwards as you go along.*

Among the sixty-nine games described in this chapter, will be found a number which are deservedly popular among boys of Scouting age. For purposes of ready reference they have been classified into groups comprising respectively games of observation, stalking games, games for the camp and hike, winter games and trials of strength and skill.

Although most of the games and practices are played out of doors many of them will be found quite suitable for indoor use. The following games, among others, belong to this class, viz.: Kim's Game, Quick Sight, Spot the Rabbit, Old Spotty Face, Scout's Nose, First Aid, Snatch the Hat, Patrol Leader, Poison, Hat Ball, Poison Tag, Slipper Shuffle, Whip Tag,

Mount Ball, Baste the Bear, Peg in the Ring, Three Deep, Follow the Leader, Human Race and those included in "Trials of Strength and Skill."

## GAMES OF OBSERVATION

### Kim's Game



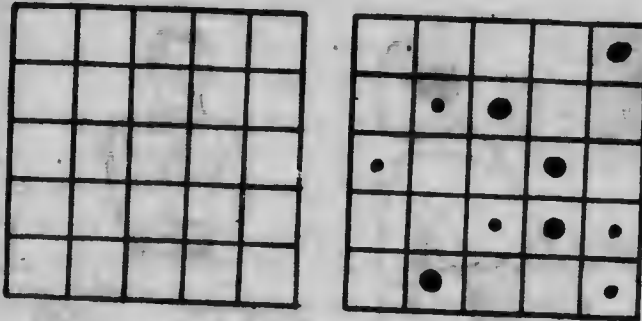
The Scoutmaster should collect on a table a number of articles such as knives, spoons, pencil, pen, stones, book and so on—not more than about fifteen for the first few games—and cover the whole over with a cloth. He then makes the others sit round, where they can see the table, and uncovers it for one minute. Then each of them must make a list on a piece of paper of all the articles he can remember—or the Scoutmaster can make a list of the things, with blank columns opposite the list for each contestant, and let the boys come in turn and whisper to him, whilst he marks off each of the things they remember. The one who remembers the greatest number wins the game.

### Memory Game

Make two boards about a foot square. Divide each into twenty-five squares. Get ten nuts and ten pebbles. Give to one player one board, five nuts, and five pebbles. He places these on the squares in any pattern he fancies, and when ready

the other player is allowed to see it for five seconds. Then it is covered up, and from the memory of what he saw the second player must reproduce the pattern on his own board. He counts one for each that was right, and takes off one for each that was wrong. They take turn and turn about.

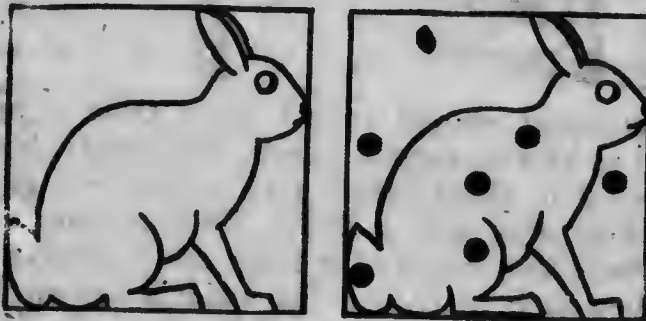
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This game is a wonderful developer of the power to see and memorize quickly.

#### Faraight, or Spot the Rabbit

Take two six-inch squares of stiff white paste-board or whitened wood. On each of these draw an outline rabbit, one an exact duplicate of the other. Make twenty round black wafers or spots, each half an inch across. Let one player stick



.....

a few of these on one rabbit-board and set it up in full light. The other, beginning at one hundred yards, draws near till he can see the spots well enough to reproduce the pattern on the other which he carries. If he can do it at seventy-five yards he has wonderful eyes. Down even to seventy (done three times out of five), he counts high honour; from seventy to sixty counts honour. Below that does not count at all.

#### Rabbit Hunt

The game of rabbit hunting is suited for two hunters in limited grounds.



Three sacks of brown burlap, each about eight inches by twelve, are stuffed with hay.

At any given place in the woods the two hunters stand in a ten-foot circle with their bows and arrows. One boy is blindfolded; the other, without leaving the circle throws the rabbits into good hiding places on the ground. Then the second hunter has to find the rabbits and shoot them without leaving the circle. If the hunter has to leave the circle he gets one point for every step he takes outside. After his first shot at each



rabbit the hider takes alternate shots with him. If it is the hider who kills the rabbit, the hunter adds ten points to his score. If the hunter hits it, he takes ten off his score. If the hunter fails to find all the rabbits, he scores twenty-five for each one he gives up. The hider cannot score at all. He can only help his friend into trouble. Next time the two change places. The lowest number of points wins, as in golf.

A match is usually for two brace of rabbits.

### Reading the Map

This is a test in map-reading and remembering the map read. (See page 129.) The Scoutmaster or Patrol Leader in command takes his patrol into a strange town or an intricate part of the country and through them he wishes to find out particulars about the neighbourhood; so he shows the Scouts a map of the district and appoints to each a place to be visited, showing the route on the map, and pointing out churches, schools, post offices, etc., to be noted on the way. Each Scout should have a fixed distance to go and a certain number of points to be noted. Then they start off, and as they return the Scoutmaster or Patrol Leader takes down their reports. The winner is the Scout who brings in the best report in the shortest time. Maps showing necessary information are generally available for most localities.

### Surveying the Country. (A Patrol Game.)

As soon as a camp has been pitched the first thing to be done is to find out about the country round. This makes an excellent subject for a patrol competition. Each Patrol Leader is served out with a sheet of paper upon which to make a sketch map of the country for perhaps two miles round. He then sends out his Scouts in all directions to survey and bring back a report of every important feature—roads, railways, streams, etc.—choosing the best Scouts for the most difficult directions. The patrol whose leader brings to the Scoutmaster the best map in the shortest time, wins. (See page 129.) The Patrol Leaders must make their maps entirely from the reports of their own Scouts.

### Old Spotty-Face

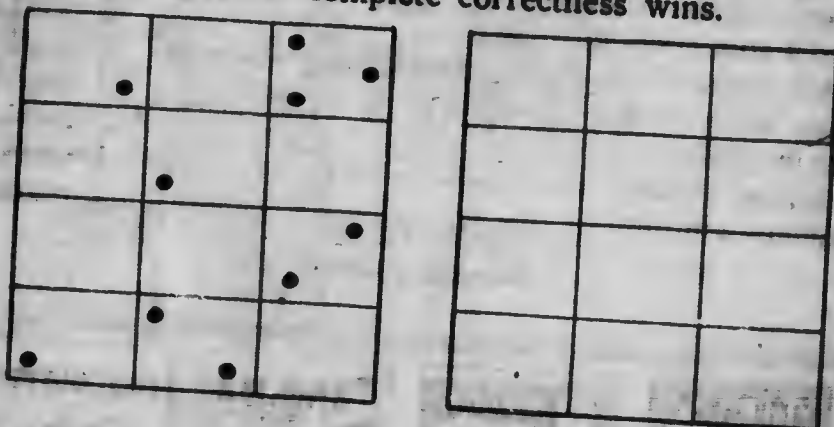
Prepare squares of cardboard divided into about a dozen small squares. Each Scout should take one, and should have a pencil and go off a few hundred yards, or, if indoors, as far as space will allow. The umpire then takes a large sheet of cardboard, with twelve squares ruled on it of about three-inch sides if in the open, or one and a half to two inches if indoors.

The umpire has a number of black paper discs, half an inch in diameter, and pins ready, and sticks about half a dozen on his card, dotted about where he likes. He holds up his card so that it can be seen by the Scouts. They then gradually approach, and as they get within sight they mark their cards with the same pattern of spots. The one who does so at the farthest distance from the umpire, wins.

Give five points for every spot correctly shown and deduct one point for every two inches nearer than the furthest man. This is a test of long sight.

#### Quick Sight

"Quick Sight" can be taught with the same apparatus as used in Spotty-Face, by allowing the Scouts to come fairly close, and then merely showing your card for five seconds, and allowing them to mark their cards from memory. The one who comes nearest to complete correctness wins.



(This is an adaptation of the game in Mr. E. Thompson-Seton's Birch Bark Roll of the Woodcraft Indians, and is recommended for regular practice as an eye strengthener and for developing the sight.)

#### Find the North

Scouts are posted thirty yards apart. Each lays down his staff on the ground pointing to what he considers the exact north (or south), without using any instrument, and retires six paces to the rear. The umpire then compares each stick with the compass. The boy who has come closest to the correct direction wins.

This is a useful game to play at night, or on sunless days, as well as sunny days.

#### Far and Near

The Scoutmaster goes along a given road or line of country with a patrol in patrol formation. He carries a scoring card with the name of each Scout on it, first reading to the Scouts a list of certain things he wants.

Each Scout looks out for the details required, and immediately on noticing one he runs to the umpire and informs him or hands in the article, if it is an article he finds. The umpire

enters a mark against his name accordingly. The Scout who gains most marks in the walk wins.

Details like the following should be chosen to develop the Scout's observation and to encourage him to look far and near, up and down.

The details should be varied every time the game is played; and about 8 or 10 items should be given at a time.

Every match found . . . . .	1 mark.
Every button found . . . . .	1 mark.
Bird's foot track . . . . .	2 marks.
Patch noticed on stranger's clothing or boots	2 marks.
Grey horse seen . . . . .	2 marks.
Pigeon flying . . . . .	2 marks.
Sparrow sitting . . . . .	1 mark.
Broken window . . . . .	1 mark.

#### Morgan's Game



Scouts are ordered to run to a certain bill board where an umpire is already posted to time them. They are each allowed to look at this for one minute—no notes may be taken in writing—and must then run back to headquarters and report to the officer in charge all that

each can remember of the advertisements on the bill board.

Shop Window



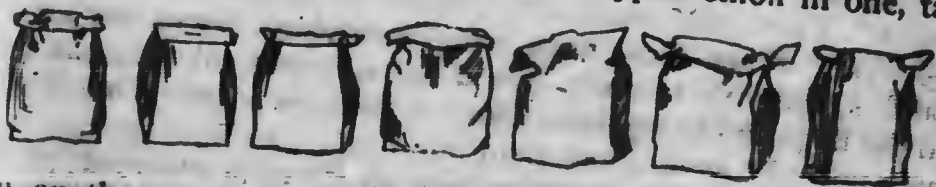
The Scout-master or Patrol Leader takes a patrol down a street past six shops. He lets them stay half a minute at each shop, and then, after moving them off to some distance, gives each boy a pencil and card, and tells him to write from memory, or himself takes down, what they noticed in, say, the third and fifth shops.

The boy who correctly sets down most articles wins.

It is a useful practice to match one boy against another in heats--the loser competing again, till you arrive at the worst. This gives the worst Scouts the most practice.

Scout's Nose Indoors

Prepare a number of paper bags, all alike, and put in each a different smelling article, such as chopped onion in one, tar



in another, rose leaves, leather, anise-seed, talcum powder, orange peel, etc. Put these bags in a row a couple of feet

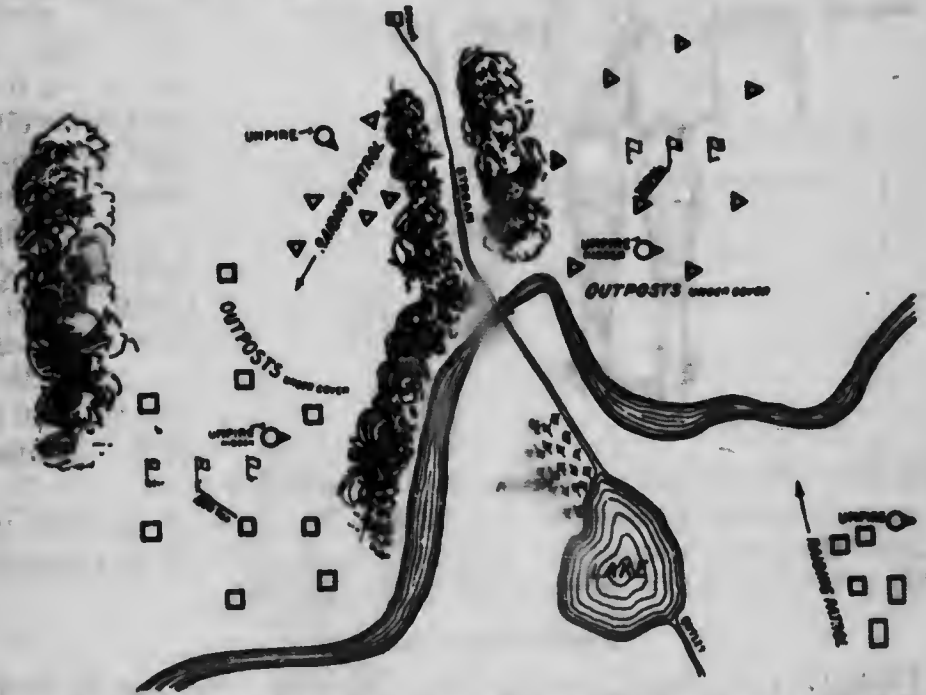
apart, and let each competitor walk down the line and have five seconds' sniff at each. At the end he has one minute in which to write down or to state to the umpire the names of the different objects smelled, from memory, in their correct order.

## SCOUTING GAMES

### Flag Raiding

Two or more patrols may take part in this game on each of two sides.

Each side forms an outpost within a given tract of country to protect three flags (or at night three lanterns two feet above ground), planted not less than two hundred yards (one hundred yards at night) from it. The protecting outposts are



posted in concealment, either all together, or spread out in pairs. They then send out Scouts to discover the enemy's position. When these have found out where the enemy's outpost is, they try to creep round out of sight till they can get to the flags and bring them away to their own line. One Scout may not take away more than one flag.

Any Scout coming within fifty yards of a stronger party will be put out of action if seen by the enemy. If, however, he can creep by without being seen it is all right.

Scouts posted to watch as outposts must not move from their ground, but their strength counts as double, and they may send single messages to their neighbours or to their own Scouting party.

An umpire should be with each outpost and with each raiding patrol.

At a given hour operations will cease, and all will assemble at a given spot to hand in their reports. The following points may be awarded:—

- |  |   |
|--|---|
| For each flag or lamp captured and brought in                                | 5 |
| For each report or sketch of the position of the enemy's outposts up to five | 5 |
| For each report of movement of enemy's Scouting patrols                      | 2 |
| The side which makes the biggest total wins.                                 |   |

The same game may be played to test the ability of Scouts in stepping lightly—the umpire being blindfolded. The practice should preferably be carried out where there are dry twigs lying about, and gravel, etc. The Scout may start to stalk the blind enemy at one hundred yards distance and he must do it fairly fast—say, in one minute and a half—to touch the blind man before he hears him.

### Treasure Hunt

The treasure hunt needs observation and skill in tracking. Practically any number may take part in it.

Several ways of playing the game are given below:—

1. The treasure is hidden and the Scouts know what the treasure is. They are given the first clue, from which all the others can be traced. Such a clue might be the following written on a gate post: "Go west and examine Scouts' signs pointing to a notice-board on which, when it is reached, will be found the following:—"Strike south by south-east to telegraph post No. 22," and so on. The clues should be so worded as to need some skill to understand, and the various points should be difficult of access from one another. This method might be used as a patrol-competition, starting off successive patrols at ten minutes intervals. At one particular clue there might be different orders for each patrol, to prevent them following one another.

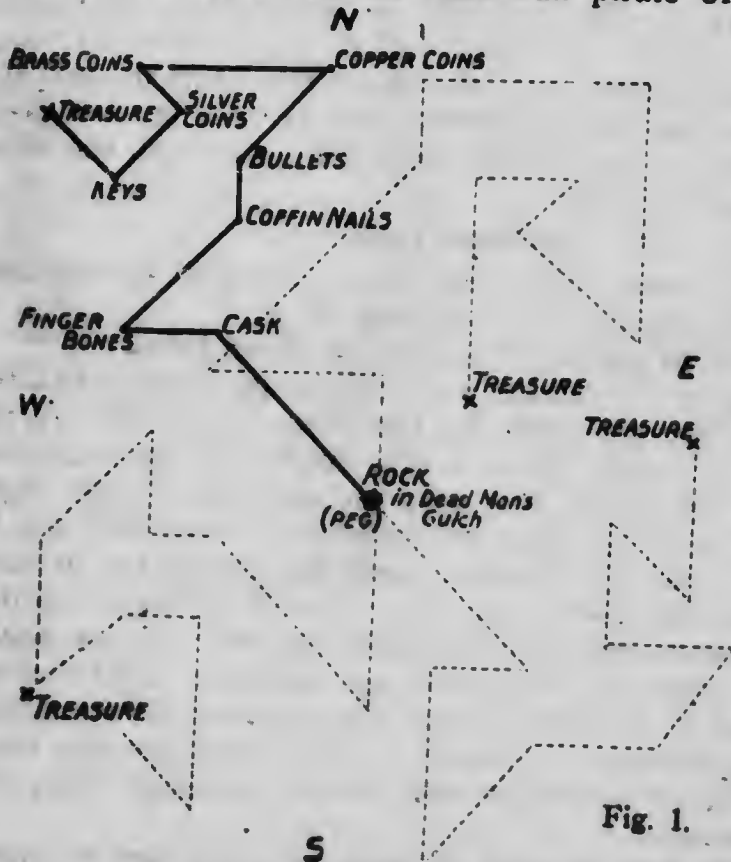
2. The clues may be bits of coloured wool tied to gates, hedges, etc., at about three yard intervals, leading in a certain direction, and when the last clue is reached it should be known that the treasure is hidden within so many feet. To prevent

this degenerating into a mere game of follow-my-leader, several tracks might be laid working up to the same point, and false tracks laid, which only lead back again to the original track.

Each competitor or party might be given a description of the way, each perhaps following a slightly different route. The description should make it necessary to go to each spot in turn, and prevent any "cutting." For example the direction may be to "go to the tallest tree in a certain field, from there go 100 yards north, then walk straight towards a church tower which will be on your left," etc. All the descriptions should lead by an equal journey to a certain spot where the treasure is hidden. The first to arrive at that spot should not let the others know it is the spot, but should search for the treasure in as casual a manner as possible.

**\*La Fitte's Treasure Hunt**

La Fitte was a famous American pirate of the Gulf of



Mexico. Like all pirates, he buried his treasure and made a map of it. La Fitte's actual notes have been found and some of them read as follows:—

"Start at the rock in Dead Man's Gulch, near the skull of the Span-

Fig. 1.

iard, travel northwest 70 paces to a cache, where you will find

\*This game was originated by Mr. Daniel Carter Beard and reproduced from the Handbook for Boys of the Boy Scouts of America, by permission.



a cask of rum; from thence due west 30 paces, where you will find the finger bones of Don Pedro Fiesto; thence northeast 30 paces, where you will find a cache of coffin nails; thence north 20 paces, where you will find a cache of bullets; thence northeast 40 paces, where you will find a cache of copper coins; thence west 60 paces, where you will find a cache of brass coins; thence southeast 20 paces, where you will find a cache of silver coins; thence southwest 30 paces, where you will find a cache with the keys to the treasure chest; then northwest 30 paces, where you will find a cache containing a brass-bound chest full of bars of gold, bags of doubloons, and pieces of 'eight'." Fig. 1.

The Scoutmaster must carefully lay out the course. At each cache he is supposed to bury the things enumerated, but in reality only marks the spot with a small peg. The treasure may be a pocket compass, Scout whistle, knife, axe, cooking outfit, book, or other suitable prize.



Fig. 2

The first contestant takes his place at the peg "A" (Fig. 2) with a pocket compass in his hand. "A" is supposed to be the "rock in Dead Man's Gulch." The Scout, remembering that the black end of the needle is the north end, adjusts his compass until the needle points exactly north, then sights along the northwest point, gets his line of direction, steps off

70 paces, and hunts for the cask of rum. He is allowed only a certain time to find each cache—two, three, or five minutes, according to the difficulty of the undertaking. The Scoutmaster starts him with a whistle.

When played as a game, each cache counts one, and the one finding the treasure makes the biggest score, of course. The Scoutmaster can hand the pathfinder bits of paper or pebbles, one for each peg found. The pebbles serve as counters for the score.

The distances may be any number of paces you choose, but each direction should be one of the four points of the compass; either, the four quarters of the compass, north, south, east, and west, or the four eighths of the compass, that is, northeast, northwest, southeast, and southwest. To go any further into the subdivisions of the compass makes the game too difficult. You will find it hard enough to find the treasure if you stick to quarters and eighths, and you had better practise first simply on quarters; that is, go east so many paces, north so many, south so many, and west so many.

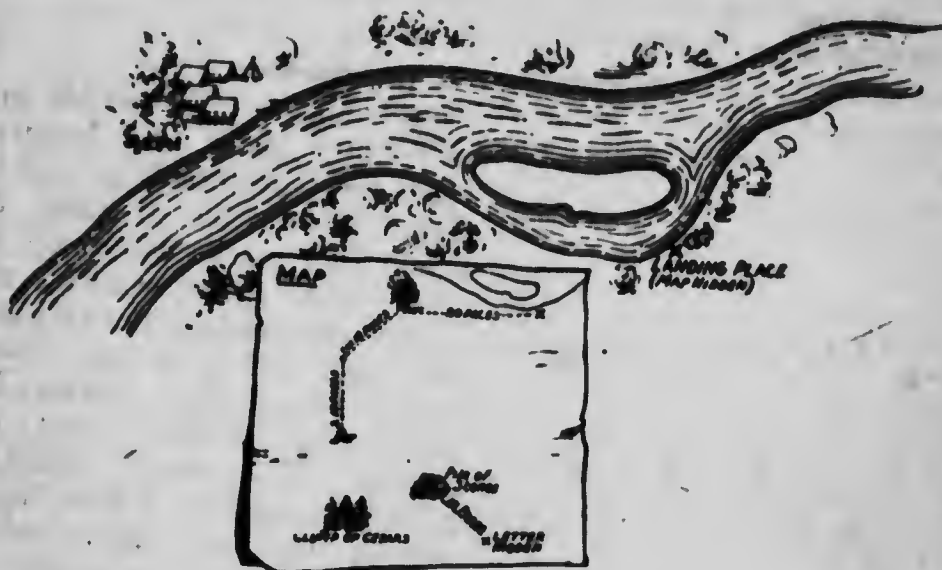
It is allowable for the Scout to place his compass on the peg and lie prone on the ground to sight his directions. A number of boys may play this game at once by laying out several courses from the rock in Dead Man's Gulch, as shown in Fig. 1, the prize being given to the one who reaches the treasure chest first.

The beauty of La Fitte's Treasure Hunt is that it gives one practice and experience in the use of the compass which may serve to advantage under circumstances of dire necessity.

#### Treasure Island

A treasure is known to be hidden upon a certain island or bit of shore marked off, and the man who hid it is known to have left a map with clue for finding it (compass directions, tide marks, etc.). This map is hidden somewhere near the landing-place. The patrols come in turn to look for it. They have to row from a certain distance, land, find the map, and finally discover the treasure. They should be careful to leave no foot tracks, etc., near the treasure, because then the patrols that follow them may easily find it. The map and treasure are to be hidden afresh for the next patrol when they have been found. The patrol wins which returns to the starting place with the treasure in the shortest time. This game may

be played on the river, the patrols having to row across the river to find the treasure.



### The Man-Hunt

This is played with a Scout and ten or more hostiles, or hounds, according to the country; more when it is rough or wooded.

The Scout is given a letter addressed to the "Mayor" (usually the lady of the house that he gets to) of any given place a mile or two away. He is told to take the letter to any one of three given houses, and get it endorsed, with the hour when he arrived, then return to the starting point within a certain time.

The hostiles are sent to a point half-way, and let go by a starter at the same time that the Scout leaves the camp. They are to intercept him.

If they catch him before he delivers the letter his captor keeps the letter as a trophy. If he gets through, but is over time, it is a draw. If he gets through successfully he keeps the letter as a trophy.

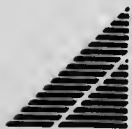
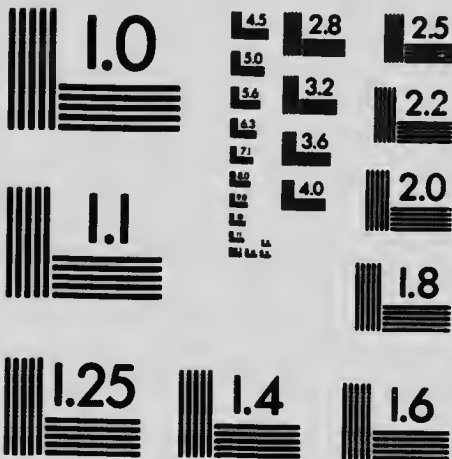
They may not follow him into the house but may surround it at one hundred yards distance. They do not know which three houses he is free to enter, but they do know that these are within certain limits.

The Scout should wear a conspicuous badge (hat, shirt, coat,



# MICROCOPY RESOLUTION TEST CHART

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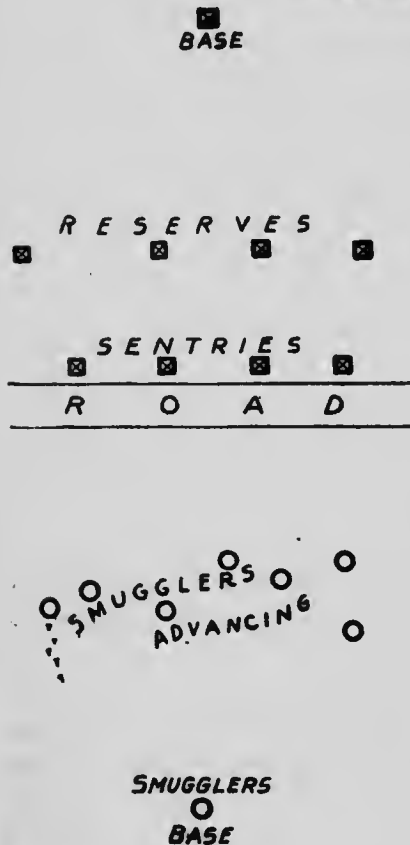
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or feather), and may ride a wheel or go in a wagon, etc., as long as his badge is clearly visible.

To "tag" the Scout is not to capture. "The blockade to be binding must be effectual."

#### Smugglers Over the Border



The "border" is a certain line of country about four hundred yards long, preferably a road or wide path or bit of sand, on which foot tracks can easily be seen. One patrol watches the border with sentries posted along the road, and a reserve posted farther inland, about halfway between the "border" and the "town." The "town" would be a base marked by a tree, building, or flags, etc., about half a mile distant from the border. A hostile patrol of smugglers assemble about half a mile on the other side of the border. They will all cross the border, in any formation they please, either singly, or together, or scattered, and make for the town, walking or running, or at Scouts' pace. Only one among them is supposed to be smuggling, and he

wears tracking irons (see p. 108.) The sentries walk up and down their beat (they may not run till after the "alarm"), waiting for the tracks of the smuggler. Immediately upon seeing the track, a sentry gives the alarm signal to the reserve and starts himself to follow up the track as fast as he can. The reserves thereupon co-operate with him and try to catch the smuggler before he can reach the town. Once within the boundary of the town he is safe and wins the game.

#### Scout Meets Scout in Town or Country

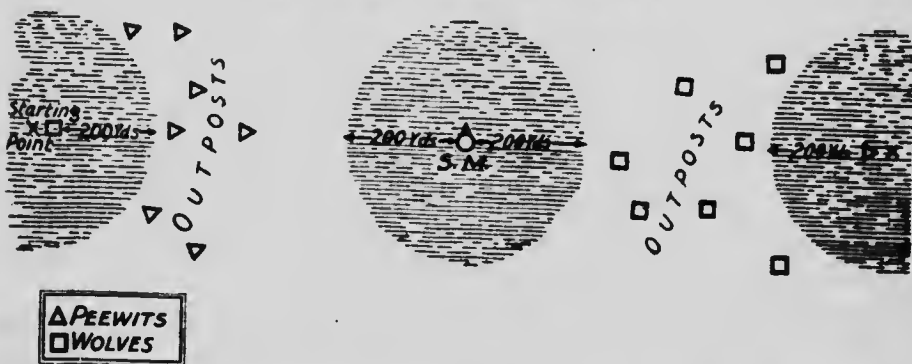
Single Scouts, or complete patrols or pairs of Scouts are taken out about two miles apart, and made to work toward each other, either alongside a road, or by giving each side a

landmark to work to, such as a steep hill or big tree, and thus insure their coming together. The patrol which first sees the other, wins. This is signified by the Patrol Leader holding up his patrol flag for the umpire to see, and sounding his whistle. A patrol need not keep together, but that patrol wins which first holds out its flag, so it is well for the Scouts to be in touch with their Patrol Leaders by signal, voice or message.

Scouts may employ any ruse they like, such as climbing into trees, hiding in carts, etc., but they must not dress up in disguise.

This may be also practised at night.

### The Rival Dispatch Bearers



The game is played between two rival patrols, which for convenience we will name the Wolves and Peewits. From each patrol one Scout is selected as dispatch bearer.

The Scoutmaster takes up a position at a certain spot, preferably in the middle of a wood, or if in a town at a street junction, and the chosen Scouts start from opposite points about two miles distant from the Scoutmaster and attempt to reach him.

It is the duty of the remainder of each patrol to try to prevent the rival dispatch carrier reaching his goal. Thus the Wolves will watch the stretch of country over which the chosen Peewit is likely to come, and as the winning patrol is decided by the first dispatch carrier to reach the Scoutmaster. The Wolves will, of course, do all they can to capture the Peewit and secure the dispatch. The Peewits in their turn will naturally try and effect the same result.

When the carrier has his dispatch captured he cannot, of course, continue. The patrols must keep 200 yards away from the starting and finishing point, thus giving the dispatch-

bearer a better chance of reaching the Scoutmaster. To be captured, the dispatch-bearer must be actually held by one of the defenders, though no fighting is allowed.

#### Dispatch Relay Run

One patrol is pitted against another to see who can get a message sent a long distance in the shortest time by means of relays of runners (or cyclists).

The patrol is ordered out to send in three successive notes, or tokens such as sprigs of certain plants, to be obtained from a certain house, say two miles distant, or further if the patrols are on cycles. The leader takes his patrol out and drops Scouts at convenient distances, who will act as runners from one post to the next, and then back again for the second note or token. The runners should be started at certain intervals.

By arranging with neighbouring Scoutmasters long distance relay practices can be carried out, for fifty miles or so. Each Scoutmaster or Patrol Leader should be responsible for forwarding the message through his own district by relays of Scouts on cycles. For instance, a message could be carried from Toronto to Hamilton on a certain day, each patrol being responsible for so many miles of the road.

An interesting series of records could thus be set up, and districts compete with one another in carrying messages over fixed distances.

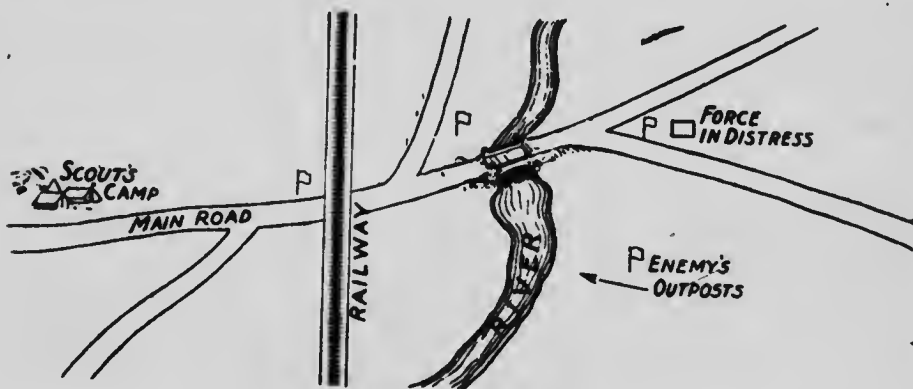
#### Flying Columns

This game is one in which any number of patrols may compete. A force is in need of help, and a military motorist on his way to the nearest garrison comes across a Scouts' camp. He gives to each Patrol Leader a hasty idea of the situation and shows him a rough map explaining that the distressed force is two miles distant along a certain road, and that between the Scouts' camp and the force are enemy's outposts. The Patrol Leaders are to take their patrols in the shortest time to the relief of the force in distress without being seen by the enemy. The distressed force should be represented by any conspicuous spot, and the enemy's outposts by people with red flags stationed on the road between the Scouts' camp and the other force. As soon as they see any of the patrols they should blow a whistle, and those Scouts who are seen are to be considered captured; or else they may notice to which patrol the Scouts they have seen belong and count it against them. The patrol



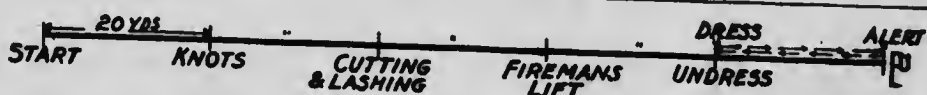
which gets to the distressed force in the shortest time, and without any of its Scouts being seen wins.

The following gives an idea of what the rough map should be:—



### Efficiency Race

Regulation uniform is to be worn with neck to knee swimming costume under uniform, next to skin. Hatchets must be worn. Commence the race by running 20 yards; then tie the following knots: bowline, sheet bend, fisherman's and reef. Run another 20 yards, cut a 2-inch diameter log in halves, then lash the two pieces together, using square lashing;



perform the fireman's lift, and carry an insensible patient 20 yards, as in the test for the Fireman's Badge (page 430.) (Patients will be selected of as nearly as possible the same weight.) Run another 20 yards; undress to costume, then run another 20 yards and capsize a flag that will be placed in the ground. Return to clothes and dress completely; return to flag, and stand at the "alert."

### Fugitives\*

Here is a Scouting game which Patrol Leaders will find useful when engaged in patrol work, apart from the rest of the troop.

Each Scout in the patrol has a round disc of white card-

\*Reproduced by permission from Ernest Thompson Seton's "Birch Bark Roll of the Woodcraft Indians."

board, with a number printed plainly upon it, pinned on the back of his shirt or sweater.

One member of the patrol is then chosen as the "fugitive," while the rest act as hunters.

The "fugitive," who wears tracking-irons, or leaves some kind of trail behind him, is given, say, ten minutes' start. The rest of the patrol then start out and endeavour to track him down.



As soon as a "hunter" can get near enough to the "fugitive," without being seen, to take down his number, the latter is considered as caught. But if the "fugitive" can, by any means, turn the tables and get any of his pursuers' numbers, the latter are out of action.

This game necessitates careful stalking.

A sharp Scout in the patrol should be chosen for the "fugitive," as he has not only to elude perhaps six or seven pursuers, but must also endeavour to "capture" them, unless he wishes to get caught himself.

#### Catch the Thief

A red rag is hung up in the camp or room in the morning. The umpire goes round to each Scout in turn, while they are at work or play, and whispers to him: "There is a thief in the camp." To one he whispers also: "You are he—Brock's Monument" or some other well-known spot about a mile away.

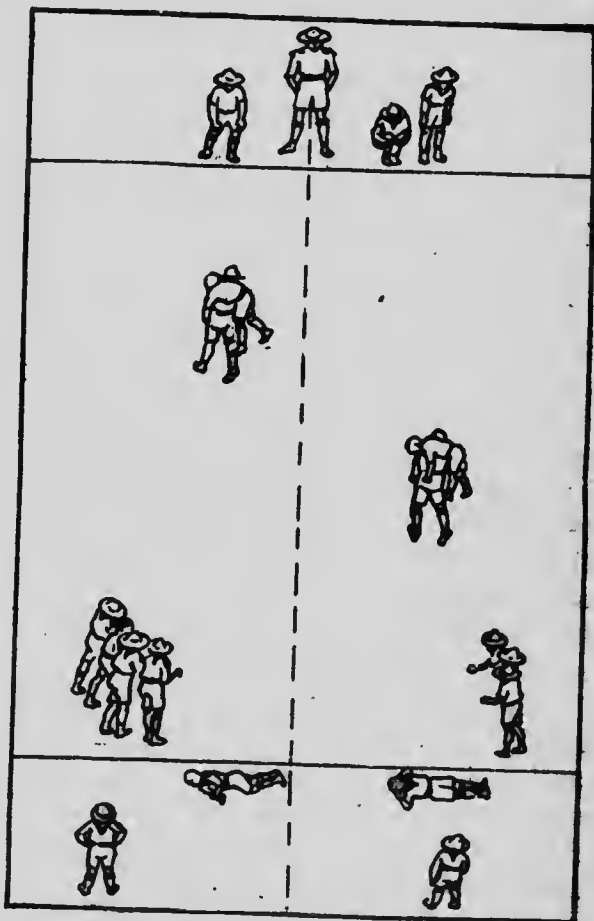
That Scout then knows that he must steal the rag at any time within the next three hours, and bolt with it to Brock's Monument. Nobody else knows who is to be the thief, where he will run to, or when he will steal it.

As soon as any one notices that the red rag is stolen, he gives the alarm, and all stop what they may be doing at the time and dart off in pursuit of the thief.

The Scout who gets the rag or a bit of it wins. If no one succeeds in doing this, the thief wins. He must carry the rag tied round his neck, and not in his pocket or hidden away.

#### First Aid

This fulfils all the requirements of a really first-class Scouting game. In its gymnasium form it is simply a race with



sides as big as desired, and with each runner carrying another player pick-a-back. But it can be made to take in the whole realm of first-aid work, and the best of it is that every fellow in the patrol has to do the same work as every other fellow, so that the final score shows the efficiency of the whole patrol and not of any particularly clever Scout.

Let us suppose that the game is being used as a fireman's lift patrol race and that the contestants are the Stags and the Eagles. Two lines are drawn across the floor of the meeting room as far apart as possible, leaving about six feet between each line and the end wall. One of these lines is the base-line, the other the goal.

Behind the goal the Scoutmaster stands to act as umpire, and behind the base-line are the two Assistant Scoutmasters or any two disinterested persons who are competent to act as judges. The dotted line in the accompanying diagram need not be actually drawn; it is put here simply to show that each patrol keeps on its own side of the room during the game.

To start the game, stand the two patrols up along the side walls, with the Patrol Leader, or No. 1, at the base-line. At the sound of the whistle No. 2 lies on the floor behind the base-line, No. 1 picks him up with the fireman's lift, and runs down the room with him, depositing him behind the goal. No. 2 then rushes back and finds No. 3 on the floor. He picks No. 3 up with the lift and rushes him to the goal. No. 3 then runs back for No. 4. No. 4 runs back for No. 5 and so on until No. 8 is safely deposited behind the goal. The first patrol to finish is the winner. The Scoutmaster and the two Assistants must watch carefully to see that the boys, in their excitement, do not "edge up" over the lines. They must also see that the fireman's lift is performed exactly as it should be, and the Assistant Scoutmasters should not allow a boy to start until his patient is placed over his back snugly and safely.

The game can also be played with improvised stretchers. In this No. 3 lies down. Nos. 1 and 2 make the stretcher of staffs and coats and carry him to the goal. No. 1 then recovers his coat. No. 3 puts his in its place and they return for No. 4. At the goal No. 2 takes his place and they return for No. 5, and so on until the whole patrol is across the goal-line.

For a further and more elaborate test, let the Scoutmaster announce that the patients have broken their left arms or have

burned their hands or have dislocated jaws. Then the rescuers must apply the proper bandages before carrying the patients across the goal, and the skill with which the bandages are applied will count in the winning.

This, however, should be done only in a rather elaborate contest, as it takes considerable time and robs the game of the slapbang excitement which makes it such an ideal wind-up to a regular meeting.

## STALKING GAMES

### Tails

Scouts on both sides wear their scarves tucked lightly in their belts, and the object of each side is to capture as many of these "tails" as possible.

To creep up behind a hostile Scout and grab his "tail" before he discovers you, calls for far more caution and Scouting than does ordinary tagging.

Again, a Scout may suddenly discover that his own tail is missing just as he is going to capture an enemy's, which all adds to the fun of the game.

Of course, if desired, coloured pieces of cloth or handkerchiefs can be used instead of the Scout scarves.

### Seeking the Scoutmaster

The Patrol Leaders of a troop are each handed sealed envelopes, and being told that the contents are important, are put upon their honour not to open them before a certain time. This waiting makes the game more exciting.

When the moment for opening the envelopes arrives, they find inside a rough outline map of some particular district, and instructions stating that all are to meet at a certain point. The patrols will form themselves, and each patrol, proceeding by its special route, will make for the place depicted in the map, where the Scoutmaster will be hiding. Naturally, the boundaries of the place must not be too confined, or the Scoutmaster's discovery will quickly take place.

A reward is offered to the patrol which first finds the Scoutmaster, so the members of each patrol should work together, searching the ground carefully in extended order. If the



## Stalking



The leader acts as a deer, not hiding, but standing, moving a little now and then if he likes.

The Scouts go out to find the deer and each in his own way tries to get up to him unseen.

Immediately upon seeing a Scout, the leader directs him to stand up as having failed. After a certain time the leader calls "time." All then stand up at the spots which

they have respectively reached, and the nearest wins.

To demonstrate the value of adapting the colour of clothes to the background, send out one boy about five hundred yards to stand against different backgrounds in turn, till he gets one similar in colour to his own clothes. The rest of the patrol are at watch and notice how he becomes invisible when he gets a suitable background, *e.g.*, a boy in a gray suit standing in front of dark bushes, etc., is quite visible but becomes less so if he stands in front of a gray rock or house. A boy in a dark suit is distinctly visible in a green field, but not when he stands in an open door-way against a dark interior shadow.

## Hare and Hound

Two or more persons represent the hares, and are provided with a large supply of small bits of paper. They are given a start of several minutes, and run a certain length of time, then return by another route to the starting point, all the time

scattering small bits of paper in their path. After the lapse of the number of minutes handicap given the hares, those representing the hounds start in pursuit, following the paper trail and trying to catch the hares before they reach the starting point in returning.

The handicap given the hares should be small, depending on the running abilities of the hares and hounds. The fastest runners are usually picked for the hounds.

#### Will-o'-the-Wisp

This game should take place across country at night. Two Scouts set off in a given direction with a lighted bull's-eye lantern. After two minutes have passed the patrol or troop starts in pursuit.

The lantern-bearer must show his light at least every minute, concealing it for the rest of the time. The two Scouts take turns in carrying the light, and so may relieve each other in difficulties, but either may be captured. The Scout without the light can often mingle with the pursuers without being recognized and relieve his friend when he is being hard pressed. They should arrange certain calls or signals between themselves.

### GAMES FOR CAMP AND HIKE

#### Snatch the Hat



For this game two equal teams are required. Each team formed of one patrol is the best fun, but, if necessary, the two teams may be furnished from one patrol.

The simplest form of the game is to take the hats of all the players and place them in a row on the ground, the two teams



standing facing each other on either side of the row of hats about twenty-five yards from it.

A Scoutmaster or Patrol Leader, standing at one end of the row, then calls a number, and each Scout having that number in his patrol runs to the row, and endeavours to obtain the hat nearest the Scoutmaster, and return to his place without being "tagged" or touched by the other. Should he be tagged, he must replace the hat in the row.

The game proceeds until one patrol has secured a complete set of hats. If there are more than two patrols, the losers of the first game play another patrol, and so on, till all have had a turn.

As the two Scouts will probably reach the hat almost at the same time, one may pretend to seize it, and thus induce the other to move in one direction, while he seizes the hat and moves off briskly the other way.

There is much value in securing a good start by means of a well-executed feint, and great fun always results when two experts at pretence are opposed to each other.

No Scout should be called upon a second time until every other member of his patrol has had a turn.

The game may be varied in several ways, of which the two following are typical:—

1. Instead of aiming at the same hat, each Scout called upon may be required to find his own hat among all the hats placed in a heap, and, having found it, to attempt the double task of tagging his opponent and of returning to his own place without being tagged. Should he be successful when his number is called again, he has only to tag his opponent, and need not trouble about securing a hat, as he will, of course, already have got his own.

When the two Scouts bearing the same number have secured hats, they inform the Scoutmaster and drop behind the line, taking no further part in the game.

2. Other articles of Scout toilet such as scarves, lanyards, water-bottles, may be put down, and any player having secured a hat would then aim at another article until his toilet was complete.

The order in which articles are to be obtained must be definitely laid down by the Scoutmaster, when the game begins.

In this variation the patrol to which a Scout who first completes his toilet belongs wins the game.

**Patrol Leader**

Many will recognize this game by other names. The boys in playing this game will line up. One of them is selected as the Patrol Leader and proceeds to instruct the patrol. The patrol will then carry out the instructions of the Leader which seem simple in the extreme but sometimes prove difficult in execution. The order is "to do as I do" and "don't laugh." It will be quickly perceived that what may seem quite all right as performed by one boy is extremely funny and absurd when done by a patrol and the result may be just as expected, some boy will snicker and start the whole crowd off. The Scout who starts the laugh is called off until half the patrol are dead. As a punishment for their hilarity they will act as horses for the remainder of the patrol and the Patrol Leader will act as the ring master armed with a knotted handkerchief whipping the unwilling horses.

The Patrol Leader will not set a task to the patrol which involves his moving away from the position originally taken up.

**The Bear Hunt**

This is played by half a dozen or more boys. Each has a club about the size and shape of a baseball club, but made of straw tied around two or three switches and tightly sewn up in



burlap. One big fellow is selected for the bear. He has a school bag tightly strapped on his back, and in that a toy balloon fully blown up. This is his heart.

He has three dens about one hundred yards apart in a triangle. While in his den the bear is safe. If the den is a tree or rock, he is safe while touching it. He is obliged to come out when the chief hunter counts one hundred, and must go the rounds of the three till the hunt is settled. The object of the hunters is to break the balloon or heart; that is, to kill the bear. He must drop dead when the heart bursts.

But the bear also has a club for defence. Each hunter must wear a hat, and once the bear knocks a hunter's hat off, that one is dead and out of the hunt. He must drop where his hat falls. Tackling of any kind is forbidden. The bear wins by killing or putting to flight all the hunters.

The savageness of these big bears is indescribable. Many lives are lost in each hunt, and it has several times happened that the whole party of hunters has been exterminated by some monster of unusual ferocity. This game has also been developed into a play.

#### Tilting in the Water

For this game two boats or war canoes are usually employed, manned by four men each. These are a spearman who is also the captain, a pilot, and two oarsmen.

The spearman is armed with a light pole or bamboo, eight or ten feet long, with a soft pad on the end. Sometimes this is further provided with a hook. This is a forked branch with limbs a foot long, one lashed to the bamboo, the other projecting out a foot, and slightly backward. The end of the spear and the fork are now thoroughly padded with burlap to the shape of a duck's head or bill and cased in some water-proof material to keep it from getting wet and heavy. The object of the hook is to change suddenly from pushing, and to pull the enemy by hooking round his neck. Each boat should have a quarter-deck or raised platform at one end, on which the spearman stands.

The battle is fought in rounds and by points.

To put your opponent back into the canoe with one foot counts you five; two feet, ten. If he loses his spear, you count five (excepting when he is put overboard). If you put him down on one knee on the fighting deck, you count five; two knees, ten. If you put him overboard, it counts twenty-five. One hundred points is a round.

A battle is for one or more rounds, as agreed on.

It is forbidden to hook or strike below the belt.

The umpire may deduct points for fouls. Needless to say the boys taking part should know how to swim.

#### Poison

This is an ancient game. A circle about three feet across is drawn on the ground. The players, holding hands, make a ring around this, and try to make one of the number step into the poison circle. He can evade it by side-stepping, by jumping over, or by dragging another fellow into it.

The first to make the misstep is "it" for the next game.

#### Hat-Ball

The players (about a dozen) put their hats in a row near a house, fence, or log (hollows up). A dead line is drawn ten feet from the hats, and all must stand outside of that. The one who is "it" begins by throwing a soft ball into one of the hats. If he misses the hat, a chip is put into his own, and he tries over. As soon as he drops the ball into a hat, the owner runs to get the ball and all the rest run away. The owner must not follow beyond the dead line, but must throw the ball at some one. If he hits him, a chip goes into that person's hat; if not, a chip goes into his own.

As soon as some one has five chips, he wins the booby prize; that is, he must hold his hand out steady against the wall, and each player has five shots at it with the ball, as he stands on the dead line.

#### Poison Tag

The one being tagged has to hold his hand on the spot where he is touched all the time he is "it." For instance if he is tagged on the knee, it is necessary for him to keep one hand on his knee until he succeeds in tagging someone else.

#### Slipper Shuffle

This game can best be played by 15 to 20 boys. The players are placed in a circle, sitting on the ground with their feet placed flat on the ground, and knees raised as high as possible. One player is in the centre and a running shoe and slipper is required. The one in the centre, after turning his back and being hit by the running shoe or slipper in the hands of one of the players, turns quickly and tries to locate the slipper. After touching the player in the centre, the player in the circle immediately places the slipper under his knees and

passes it around the circle. When the player in the centre succeeds in securing the slipper, the one in whose hands, or under whose knees he found it, must take his place.

#### Whip Tag

This game may be played by any number of boys. The players are placed in a circle facing inward, with their hands behind their backs. One, running around the circle on the outside, will drop the whip (a towel or similar piece of material made into a roll, and bound tightly with cord, like a stuffed club), into the hands of one of the players. The person receiv-



ing it quickly turns to his right hand neighbour, hits him over the shoulders and chases him around the circle to the right, back to his place, beating him all the time with the whip over the back or shoulders. Any player using the whip on another player's head should be dropped from the game. The holder of the whip now takes the place of the last leader.

#### Mount Ball

The players are paired off according to height and strength, and form a double circle facing the centre, at two to six paces intervals. One person takes his place in the centre as umpire and holds a basket ball, soccer football or indoor baseball. If these are not available, a boxing glove or other soft object

may be used. On the command "Mount," the outer circle mount by straddling the backs of the inner circle, and the umpire tosses the ball to one of them, he may throw it across the circle to another one of the riders. Every time any one



misses, the riders and ponies change places, and the umpire secures the ball and throws it to one of the riders and the game continues as before.

#### Stick on a Rock

Each player has a stone, called a "duck," about the size of a baseball. Bean bags may be used in a gymnasium. A large rock or post is selected and a line drawn twenty-five feet from it for a firing line. First all the players throw their ducks at the goal from the firing line. The one whose duck remains farthest from the center, becomes first guard, places his duck on the rock, and stands guard near it. The other players then take turns trying to knock off his duck, throwing from the firing line. After a throw, the thrower must recover his duck

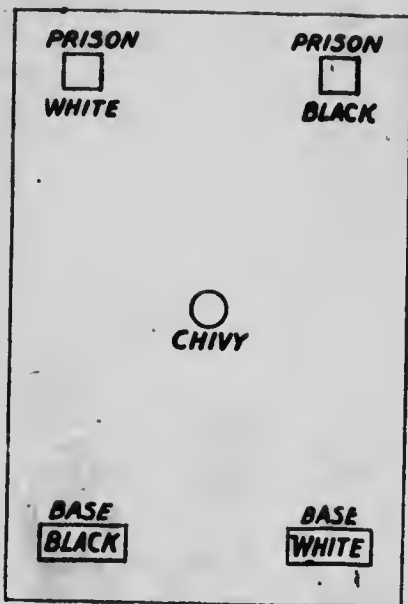
and run back behind the line. If he is tagged by the guard, he must mount guard himself. He may be tagged at any time he is within the line unless he stands with his foot on his duck where it first fell. He may stand thus until he sees a good chance to run, but if he once picks his duck up he may not put it down again.



If the guard's duck is knocked off, he must not tag a player until he replaces it. Any player tagged by the guard must put his own duck on the rock. The guard must quickly get his own duck and run behind the firing line, as he may be tagged as soon as the new guard gets his duck on the rock.

#### Prisoner's Base

Goals are marked off at both ends of the playground and players are divided into two equal divisions, occupying the two goals. About ten paces to the right of each goal is a prison. A player advances toward the opposite goal, when one from that goal starts out to catch him. He retreats, and one from his side runs to his rescue by trying to catch the pursuer, who in turn is succoured by one from his side, and so on. Every player may catch any one from the opposite side who has been out of goal longer than he has. Any player caught is



conducted to the prison by his captor and must remain there until rescued by some one from his side, who touches him with his hand. The one who does this is subject to being caught like any other player.

#### Haul Away, Pull Away

This name will suggest to the Scoutmaster a game which he as a boy no doubt many times indulged in. An unlimited number may play in this game, the boys selecting a field or space that they may run across. Boundaries, of course, should be set, if the game is played in the

open country. Those playing will line up on one side of the field, one of their number taking his place in the centre. On the word "go" those on the side lines will attempt to cross the field and each boy captured takes his place until all are caught.

#### Spanish Fly

Most Scouts are familiar with this game. It is one of a series in which one boy is selected as first back down. The others in turn leap over the back that is down. The back remains down and the players go over again and again in rotation but in each trip over, the leader varies the action as in "Follow the Leader." Should any player fail to go over in the same manner that the leader does, he is next back down. The variations most commonly used are as follows:—

1. "Back down, faces left and all go over."
2. "Hats on deck." In this case the leader goes over and in doing so leaves his cap on the back down. Those following do likewise without knocking any caps off.
3. The last player over in No. 2, is first over now taking his cap with him, but not disturbing other player's caps.
4. "Hats Overboard." In this case the leader goes over with his cap inverted on his head, which he drops when going over. Others follow, keeping clear of each other's caps.
5. The last player over in No. 4 goes first over again and on landing bends over in such a way as to pick up his cap with



his teeth, and with his back turned to the boy that is down throws it over his head. Should he fail to do this, he is next back down.

There are many other variations of this game which the ingenuity of those playing will naturally suggest.

### Peg in the Ring



The game of peg in the ring is perhaps the most popular of the top games. It may be played by any number of boys. A ring about three feet in diameter is drawn on the sidewalk or pavement (a wooden floored space is preferable). Into this ring the first player casts his top. While it is spinning and after it becomes "dead" the other players may cast their tops at the first player's or any other player's top, the object being to split the top and secure the peg as a trophy. Tops knocked out of the ring become live as do those which

hop out while spinning, and the owners are permitted to pick them up and continue play.

### Piggy

This simple game may be played by two or more players and the necessary equipment may be made by the Scouts themselves. A stick about two feet long—an old broom handle will do—to be used as a bat, and a short piece of wood about five inches in length, tapered at both end, to be used as a ball, are in fact all the materials necessary.

A ring called "home" is drawn on the ground and a balk line called "offing" is drawn about four or five yards away. The player who is in takes his place at "home" and is provided with a stick. The other player takes up his position at

"offing" and throws the "piggy" with the object of placing it within the ring. The player at home defends the circle by striking at the piggy thrown. If, however, he fails to strike it and "piggy" comes to rest within the circle, he is out. If, on the other hand, he hits the piggy, the pitcher is required to cover the distance from the piggy to the circle in a number of paces named by the "home" player. If he does the home player is out, but if he does not the "home" player scores points equal to the number of paces named. If the "piggy" comes to rest outside the circle, the "home" player is permitted to tip and strike it away from "home." The "home" player is permitted three attempts at a strike but only one strike. If the "piggy" comes to rest on the line, the home player has but one try.

#### Kick it and Run

This game is best played in a clearing in a wood, but may also be played in an open field. One Scout takes up his position in the clearing and the rest seek cover as near as possible. A football is rolled into the clearing by the Scoutmaster or some other person acting as umpire. The Scout inside the clearing immediately kicks it outside and rushes out to "tag" any other Scout he can find and catch; but directly the ball is kicked back into the clearing, he must return and kick it out.

#### The Whale Hunt.\*

A big log of wood with a roughly-shaped head and tail is made to represent the whale. Two boats will usually carry out the whale hunt, each boat manned by one patrol, the Patrol Leader acting as captain, the corporal as bowman or harpooner and the remainder of the patrol as oarsmen. Each boat belongs to a different harbour, the two harbours being about a mile apart.

The umpire takes the whale, and lets it loose about half-way between the two harbours, and on a given signal the two boats race out to see who can get to the whale first. The harpooner who first arrives within range of the whale drives his harpoon into it, and the boat promptly turns round and tows the whale to its harbour.

The second boat pursues, and when it overtakes the other, also harpoons the whale, turns round, and endeavours to tow the whale back to its harbour.

\*This is the same game as that of "Spearing the Sturgeon" in Mr E. Thompson Seton's "Birch Bark Roll of the Woodcraft Indians."

In this way the two boats have a tug-of-war, and eventually the better boat tows the whale, and possibly the opposing boat, into its harbour.

It will be found that discipline and strict silence and attention to the captain's orders are very strong points towards winning the game. It shows, above all things, the value of discipline.



You are allowed to dislodge your enemy's spear by throwing your own over it, but on no account must you throw your spear over the other boat or over the heads of your crew, or a serious accident may result.

The spearsman must not resign the spear to any other member of the boat. It is forbidden to lay hands on the whale or on the other boat—unless this is done to avoid a collision.

Of course the boys taking part should know how to swim.

#### Follow My Leader

With a large number of boys this can be made a very effective display, and is easy to do at a jog trot, and occasionally "knee-up" with musical accompaniment. It can also be done at night, each boy carrying a Chinese lantern on top of his staff. If in a building all lights, of course, should be turned down. A common fault is that the exercise is kept going too long till it wearies both audience and performers.

#### Three Deep

This is a game in which the whole troop may take part. The boys are drawn up in circular form two deep. Two other players are necessary, one of whom stations himself on the outside of the circle close up to one of the pairs and tries to get inside the circle and station himself in front of anyone of the players without being caught. The other player tries to

tag him before he succeeds in doing so, when the one who is tagged in turn becomes "it" and mounts guard inside the circle.

If the outside player succeeds in stationing himself in front of any one of the pairs without being tagged, the outside man in this particular file of three must move and try to place himself in front of another pair without being tagged.

#### Human Race

Divide off in pairs. One player carries another on his back from one end of the room or allotted space across a certain line, when he in turn is picked up by the player who was carried, and returned across the starting line. This may be run in heats and finals, thus increasing the interest.

### WINTER GAMES

#### Siberian Man Hunt



A man has escaped through the snow and a patrol follow his tracks, but, when they think they are nearing his hiding-place, they advance with great caution because for them one hit from a snowball means death. The escaped person has to be hit three times before he is killed. If he has taken refuge up a tree or any

such place, it will be very difficult to hit him without being hit first. The hunted man has to remain at large for a certain time, perhaps two or three hours, and then get safely home without being caught.

#### Arctic Expedition

Each patrol takes a sleigh or toboggan with harness to fit two Scouts who are to pull it (or for dogs if they have them, and can train them to the work). Two Scouts go a mile or so ahead. The remainder with the sleigh follow, finding the way by means of the trail, and by such signs as the leading Scouts may draw in the snow. All other drawings seen on the way are to be examined, noted, and their meaning read. The sleigh carries rations, cooking utensils, etc.

Build snow huts. These must be made narrow, according to the length of sticks available for forming the roof, which may be made of brushwood, and covered with snow. Or, if the snow is suitable the snow house may be made on the plan described on pag 165.

#### Snow Fort

The snow fort may be built by one patrol according to their own ideas of fortification, with loop holes, and on, for looking out. When finished it will be attacked by hostile patrols,



using snowballs as ammunition. Every Scout struck by a snowball is counted dead. The attackers should, as a rule, number at least twice the strength of the defenders.

**Fox-Hunting**

This game is to be played where there is plenty of untrodden snow about. Two Scouts representing foxes start from the middle of a field or piece of open ground, and five minutes afterwards the rest are put on their trail. The two foxes are not allowed to follow any human tracks. If they approach a pathway where other people have been, they must turn off in another direction; but they can walk along the top of walls and use any other ruse they like, such as treading in each other's tracks, and then one vaulting aside with staff. Both of them have to be caught by the pursuers for it to count a win. The foxes have to avoid capture for one hour and then get back to the starting point.

**The Dash for the Pole**

Two rival parties of Arctic explorers are nearing the Pole. Each has sent out one Scout in advance, but neither has returned. They know the direction each started in because their tracks can be still seen in the snow. What has really happened is that each has reached the Pole, and each is determined to maintain his claim to it and so dare not leave the spot. They both purposely left good tracks and signs, so that they could be easily followed up, if anything happened. These two, one from each patrol, should start from headquarters together, and then determine upon the spot to be the Pole—each approaching it from a different direction.

The two parties of explorers start off together, about fifteen minutes after the forerunners, and each follow up the tracks of their own Scout. The first patrol to reach the spot where the two are waiting for them takes possession; the Leader sets up his flag and the rest prepare snowballs, after laying down their staves in a circle round the flag at a distance of six paces. When the other party arrives, they try to capture the staves. The defenders are not allowed to touch their staves, but two hits with a snowball on either side puts a man out of action. Each defender killed and each staff taken counts one point, and if the rival party gain more than half the possible points, they can claim the discovery of the Pole. Before the defenders can claim undisputed rights, they must kill all their rivals, by pursuing them; even if only one or two are left. The two forerunners do not take part, but act as umpires.

**TRIALS OF STRENGTH AND SKILL****The Palm Spring**

This is performed by standing at a little distance from a wall with your face toward it and leaning forward until you are able to place the palm of your hand quite flat on the wall. You must then take a spring from the hand and recover your upright position without moving either of your feet. It is better to practise it first with the feet at a little distance only from the wall, increasing the distance as you gradually attain greater proficiency in the exercise.

**Prostrate and Perpendicular**

Cross your arms on your body, lie down on your back and then get up again without using either your elbows or hands in doing so.

**Tantalus Tricks**

(a) Desire a player to stand with his back close to the wall, then place a piece of money on the floor at a little distance in front of him and tell him he shall have it if he can pick it up without moving his heels from the wall.

(b) Place the left foot and leg and the left cheek close against a wall; then lift the right foot slowly and endeavour to touch the left knee with it and stand steadily in that position.

### Knuckle Down

This consists in placing the toes against a line chalked on the floor, kneeling down and getting up again without using the hands or moving the feet from the line.



### Jumping Through Fingers

Hold a stick of wood between the forefinger and thumb of each hand, and, without letting go, try to jump over it both forward and backward. You may also jump over your middle fingers placed together without touching or separating them with your feet.



### The Turn Over

Take a short run, place the toes of the right foot against a wall and throw the left leg over it, making a complete turn at the same time so that when your feet touches the ground your back is to the wall. The right foot is the pivot on which you turn and you must take special care to keep it quite close against the wall while you perform the turn over.



**Indian Wrestle**

Two players lie on their backs, side by side, locking arms, and with heads in opposite directions. Count "one, two, three."



At each count the adjoining legs are brought to the perpendicular. At count three catch at the knee and endeavour to make the opponent perform a back roll.

**Skin the Snake**

The players stand in line one behind another. Each player stoops over, putting his right hand between his legs and grasping the left hand of the player behind him. At a given signal, the last man in line lies down on his back, putting his feet

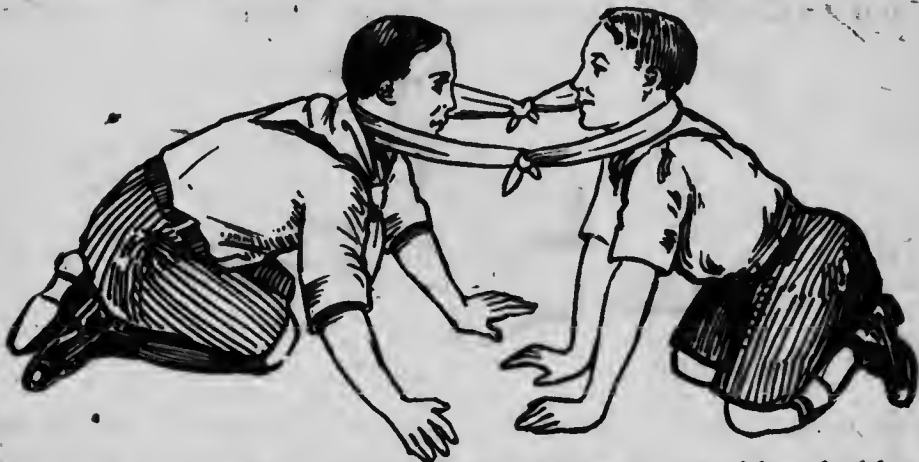


first between the legs of the player in front of him. The line walks backward astride the bodies of those behind, and immediately lying down upon having no more to pass over. Upon completing the operation, all are lying on their backs. Then the last man to lie down rises to his feet and strides forward up the line, the rest following as fast as their turns come. During all these manoeuvres the grasp of the hands has not been broken. When this manoeuvre is performed rapidly, it presents a peculiar spectacle, yet is very simple.

**Badger Pulling**

Here is a good game which you can play either in your club-room or out doors. Two boys take part. Two or more scarves are knotted together and hung over the players' heads. A line

is drawn between the players, and the object of the game is for each to try to pull the other over this line, using heads,



hands and knees alone. There should be no catching hold of the handkerchiefs or the arms and hands, otherwise the fun will be lost.

#### Cock-Fighting

This is a game for two players with arms folded and one leg lifted. The aim is to hop towards one another and by collision or otherwise to seek support to retain his balance. Cock-fighting always proves amusing, and our illustration shows a way of playing the game, which may be new to some of you. Instead of sitting on the floor, with staff under knees and hands clasped around legs in the



usual manner, the two combatants get into a squatting position, with the staff held as usual. The picture shows this quite clearly.

It is then very comical to see each "cock" hopping about and endeavouring to upset his opponent.

#### Tub-Tilting

Two Scouts are mounted on upturned tubs or barrels, about nine feet apart, and armed with long bamboo poles. Each pole has a boxing glove on one end, and the Scouts have to knock one another off the tubs with the poles. The boxing glove, of course, prevents any damage being done.



If tubs cannot be obtained, forms or chairs may be used instead.

**Feet Wrestling**



Two boys stand facing each other with their hands behind their backs. Each has to stand on one foot, and try to push the opponent over with the other.

## CHAPTER XII

### SCOUT DRILLS AND RALLIES

In giving a simple system of drill for Boy Scouts, it is to be understood that it is merely to enable Scoutmasters to move their troops and patrols in good order for parade purposes, and not as an exercise for frequent practice with the boys when other occupations are possible. When a troop drills well but fails to follow a trail or cook its own food, it is a pretty clear indication that the Scoutmaster is no good as such. The indifferent or unimaginative officer always falls back upon drill as his one resource.

Scouts, however, have to understand drill to enable them to be moved quickly from one point to another in good order. Drill also sets them up, and makes them smart and quick. It strengthens the muscles which support the body, and by keeping the body upright the lungs and heart get plenty of room to work, and the inside organs are kept in the correct position for the digestion of food.

A slouching position, on the other hand, depresses all the organs, and prevents them doing their work properly, so that a man with this habit is generally weak and often ill.

Growing lads are very apt to slouch, and should, therefore, do all they can to get out of the habit by plenty of physical exercise and drill. Stand upright when you are standing, and sit upright when you are sitting down, with your back well into the back part of the chair.

Alertness of the body, whether you are moving, standing, or sitting, means alertness of mind, and is a paying thing to have, because many an employer will select an alert-looking boy for work and pass over a sloucher. When you have to stoop over writing at a table, or even tying a boot-lace, do not round your back, but tuck in the small of your back, which thus helps to strengthen the body.

The subject of drill for Scouts may be conveniently considered under the following headings, viz.: patrol drill without staves, patrol drill with staves, drill and directions for rallies, field days, and other special occasions.

When serving as guards of honour, or parading for reviews or church parades, etc., Scouts maintain their own distinctive formations by troops and patrols.

Scouts must be obedient to command. To this end it is important that all orders should be given in clear terms and pronounced as distinctly as possible.

Usually commands have two parts, the first indicating what is to be done, and the second when to do it, as, for example, "right turn." Commands consisting of one word should be preceded by a caution, as for example "troop, halt."

#### Patrol Drill Without Staves

The first thing to do is to form the Scouts in a line, all facing in one direction, the Second on the right end of the line, the bugler, or drummer, on the left end of the line and the Patrol Leader two paces in front of the centre of his patrol.

"Fall in." On this command being given each Scout should move promptly to his place and stand properly "at ease." No talking or movement is allowed after the command has been given to "fall in."

"Patrol, alert." On this command each Scout should stand upright with heels together, toes about eight inches apart, arms at side, fingers slightly bent, looking straight to the front.

"Stand at, ease." On this command each Scout should carry his left foot eight inches to the left, placing his hands behind his back, the back of one hand in the palm of the other; both legs to bear evenly the weight of the body supported on the ball of each foot, the knees stiff.

"Stand easy." On this command the Scout may unclasp his hands and may turn his head, but must not move his right foot. Talking may be allowed at the discretion of the officer in charge.

"Sit at ease." On this command each Scout should squat down on the ground in any position he likes.

"Right, (or left) dress." On this order each boy except the one on the right (or left) of the line should turn his head to the right (left) and step to the right (left) until his elbow just touches the elbow of the boy on his right (left) and he is in good line with him. He should keep his head turned until the order is given "Eyes front."

"Eyes, front." On this command each Scout should turn his head and eyes smartly to the front.

**"From the right, number."** On this command the right hand Scout should call out briskly "1," the next Scout to him "2," and so on down the line.

**"Right, turn."** On this command each Scout should turn a quarter circle to the right, turning on the right heel and left toe in two motions, bringing the left foot smartly and quietly into place.

**"Left, turn."** On this command each Scout should turn a quarter circle to the left, turning on the left heel and right toe in two motions, bringing the right foot smartly and quietly into place.

**"About, turn."** On this command each Scout should turn a half circle to the right and face about by turning on the right heel and left toe in two motions, bringing the left foot smartly and quietly into place. About turning must always be done to the right.

**"Form, fours."** On this command the even-numbered Scouts should take one pace to the rear with the left foot, and one to the right with the right foot, covering off properly behind the line of Scouts in front. The left hand Scout always moves and the second to the left always stands fast.

**"Form, two deep."** On this command the even-numbered Scouts should take one pace to the left with the left foot and one to the front with the right foot, taking up their proper dressing immediately.

**"Quick, march."** On this command the patrol should move off at the rate of 120 paces per minute, starting with the left foot, the arms swinging freely, as this gives good exercise to the body and muscles and inside organs.

**"Step out."** On this command the length of the pace should be increased by half, still keeping at the rate of 120 paces per minute.

**"Step short."** On this command the length of the pace should be shortened by half, still keeping at the rate of 120 paces per minute.

**"Double, march."** On this command the patrol should step off with the left foot and double on the toes with easy swinging strides. In double time, 180 paces are taken to the minute. The arms should swing easily from the shoulder and should be bent at the elbow and swung sufficiently clear of the body to allow of full freedom for the chest.

**"Scouts, pace."** On this command the boys should march

at "quick march" for twenty paces, then "double" twenty paces, and so on, alternately running and walking, until the word is given "quick march" or "halt."

"Mark, time." If at the halt, on this command being given, each foot alternately should be raised about six inches from the ground, commencing with the left foot, and without advancing. If on the march, the foot then advancing should complete its pace, after which the time will be continued without advancing, by raising each foot alternately about six inches.

"Halt." On this command each Scout should immediately come to a stop, completing the last movement of the feet to bring them to the "alert" position.

"Follow your leader." On this command the following Scouts should conform to the movements executed by the leader.

"On the left, form line." On this command the leading Scout should "mark time," the remainder inclining to the left and moving up smartly into line on the left of the leader. Should the Patrol Leader be acting as leader, he will wait until the patrol has formed line in proper order and then resume his proper place on parade.

"Right, (or left) incline." On this command a half turn to the right (or left) is made in the required direction.

"On the left, form patrol (or troop)." On this command being given, the leading Scout will "mark time," the remainder making a partial turn in the direction named, and forming up on the leader, halting as they come up. If this movement is executed on the march, the new line will mark time until being given the command "forward."

#### Patrol Drill With Staves

"Fall in." On this command each Scout should move promptly to his place and stand properly "at ease."

"Alert." On this command each Scout should spring smartly to the "alert."

"Order, staves." On this command each Scout should stand at the alert position, grasping his staff by the right hand, the front of the hand in line with the right toe, the staff perpendicular and resting on the ground against the right shoulder.

"Stand at, ease." On this command each Scout should carry his left foot eight inches to the left. The right arm, while grasping the staff, is fully extended to the front from the

shoulder, the left hand being placed palm outwards behind the back.

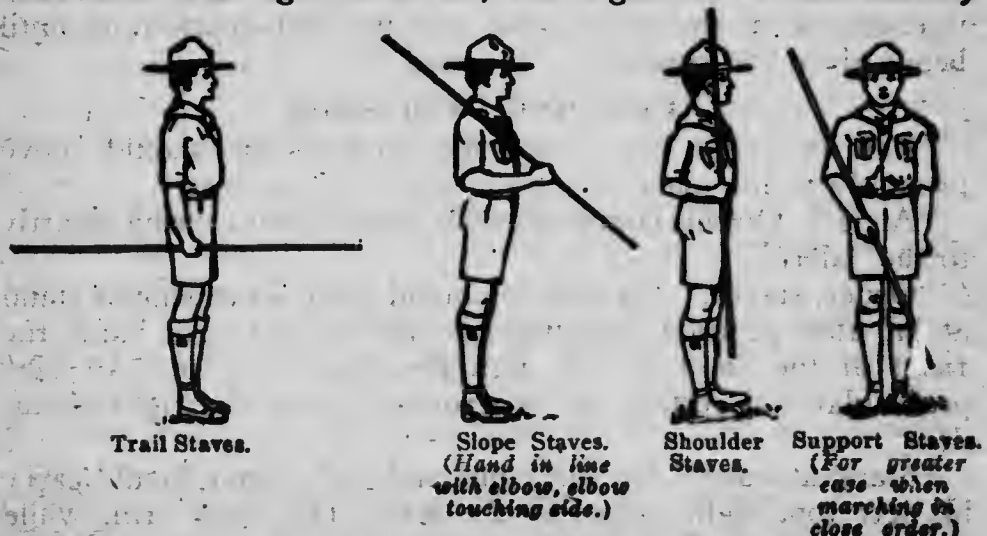
"Trail, staves." On this command the point of the staff should be dropped forward to a horizontal position. On the march the staff is carried in the horizontal position, but the arm is not allowed to swing.



When moving off from the "alert" or "order staves," staves should always be trailed, unless otherwise ordered, before stepping off, and on the command "halt" will be brought to the "order."

"Shoulder, staves." On this command the lower arm should be raised smartly up to the horizontal, carrying the staff in a vertical position, the arm neatly tucked in to the right side.

"Slope, staves." On this command the staff should be carried over the right shoulder, the right elbow comfortably



Trail Staves.

Slope Staves.  
(Hand in line  
with elbow, elbow  
touching side.)Shoulder  
Staves.Support Staves.  
(For greater  
ease when  
marching in  
close order.)



tucked in to the right side, the right hand in line and on a level with the right elbow.

"Support, staves." On this command the right hand should be carried in front of the body, gently inclining the staff to an angle of 60 degrees to the horizontal. This order is used in "close order," "Indian file," etc.

"Secure, staves." On this command the staff should be grasped at the middle point, and carried with the right hand, the rear end of the staff under the right arm and the front end about one foot from the ground. This order is used at funerals only.

"Rest on staves." On this command being given, the staff is grasped with both hands, right hand uppermost, in line with the waist, the butt being placed on the ground midway between the feet and held perpendicular. The head is dropped as in illustration. This order is used at funerals only.



Secure Staves.  
(For close order  
or at funerals.)



Rest on Staves.  
(At funerals.)

"Salute." To salute the left hand should be carried smartly across the body at the Scout sign to a horizontal position and the staff brought to the "order."

On the command "alert" the left hand should be dropped smartly back to the side. When on the march the staff is brought to the "shoulder staves" for the salute and the left hand carried across.

#### Troop Drill

The directions given for patrol drill apply also, as far as they go, to troop drill. A few further directions may, however, be of assistance to those having to do with the formation and movement of troops on occasions when more than one troop is taking part.

## Formations

The correct formation for a troop of Scouts to assume on falling in is shown in the diagram herewith.



The Patrol Leaders take up a position two paces in front of the centre of their respective patrols; the Assistant Scoutmasters in front of the centre of the units over

which they have charge, two paces in front of the line of Patrol Leaders; and the Scoutmaster in front of the centre of the troop, one pace ahead of the line of Assistant Scoutmasters. If it is a district parade the District Scoutmaster, Commissioners, staff, etc., should take up a position in the centre of the line, one pace in front of the line of Scoutmasters.

Scoutmasters should keep their proper place as above, dressing on the other Scoutmasters, whether there be any Assistant Scoutmasters in the troop or not, in order to maintain uniformity. If the troop be a lone unit, Scoutmasters may fall in in the line of Assistant Scoutmasters when none of the latter are on parade.

"Troop—from the right, number." Sometimes for convenience it may be necessary to divide the troop into patrols of equal strength, irrespective of patrol membership. In this case, the command will be given "troop from the right, number." If, say there are twenty-four on parade, and the desire is to make three patrols, the Scoutmaster will call out "eight," "sixteen," "twenty-four." The Scouts so named will raise their left forearm at right angles from the body. On the command from the Scoutmaster "left of patrols," they will drop their arms and remember they are each the left of their respective patrols, the boy on their left being the right of the next patrol.

"Tell off the troop." On this command Patrol Leaders only number in succession from the front, if in column, or from the right, if in line.

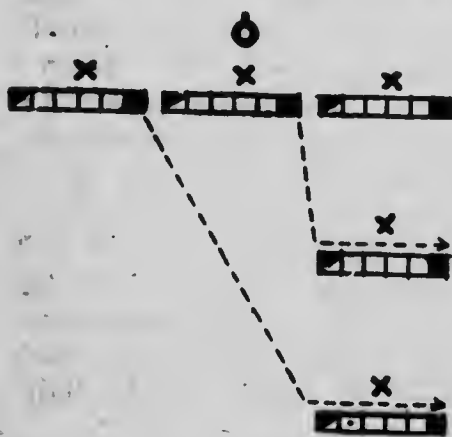
"Tell off the parade." On this command Scoutmasters only number in succession from the front, if in column, or from the right, if in line.

"Cover off." On this command, directing Scouts will each dress on the Scout in front of them.

"By the right, (left or centre), quick march." This command should always be given before marching off.

**DISTRICT SCOUTMASTER.**—In all marching formations the District Scoutmaster, or other officer in charge of the parade, should be at the head of the column, preceding the staff and all other units, but behind the band and midway in an interval of about ten yards which should be left between the band and the head of the column.

**"Form column."** If it is desired to change from line formation to "column," that is to lines of patrols one behind another, the following command should be given: "On the right, form column of patrols, remainder, right turn, quick march." The patrol on the right will then stand fast and the remaining patrols will be led by their respective Leaders by the shortest route to the positions indicated in the diagram herewith.



The distance between troops or patrols in column formation is equal to the frontage of the units.

**"Close column on \_\_\_\_\_ Patrol (or Troop.)"** It is sometimes desirable to close up troops and patrols in order that as little space as possible may be taken up. This formation is suggested if an address is to be given. On the above command being given, the leading troop or patrol, or

any other particular unit designated by the officer in charge, will stand fast. The remaining troops or patrols are then given the order "quick march" and halted by their respective leaders when closed up.

**"Column on No. \_\_\_\_\_."** If the troop is in "close column" and column is desired on No. 1, the command should be given "column on No. 1; remainder about turn; quick march." Each Patrol Leader on arrival at "column" distance will give the command "\_\_\_\_\_ patrol, halt; about turn; right dress." If halted in "close column" and the parade is desired to move off in "column," the command will be "\_\_\_\_\_ troop in column; by the right; quick march." No. 1 Patrol Leader will immediately take his place in front of his patrol and move off. When No. 1 Patrol is at "column" distance the Patrol Leader of No. 2 patrol will do likewise, and so on in succession.

"Form fours; right; left wheel." If it desired to change the formation from "column of patrols (or troops)" on the march in order that a narrower frontage may be taken up, the foregoing command should be given which should be preceded by the caution "advance in fours from the right of troops (or patrols)." The patrols (or troops) will then form fours and turn to the right, followed by a left wheel. From this formation it is quite a simple matter to resume "column of patrols (or troops)" by giving the command "on the left (or right) form patrols (or troops)."



"At the halt; into column of patrols right, for ; quick march." It in line, this command should be given if it is desired to bring the troop into

"column." The right hand Scout turns to the right, the remainder forming up on his left and the Patrol Leader taking up his position at the centre of his patrol, and two paces in front.

"At the halt; into line; left form; quick march." On this command the left hand Scout in each patrol should turn to the left, the remainder moving up on his right, halting and dressing. If it is desired to move off or to have the Scouts mark time on arriving at the new position, the words "at the halt" should be left out.

"Change direction, right (or left)." If marching in column and it is desired to change direction, this command should be given. The Patrol Leader of the leading patrol immediately gives the command "——— patrol; right form," each succeeding Patrol Leader on arriving at the wheeling point, repeating this order.

"Patrols from the right (left, or centre); —— paces; extend." This may be done by patrols as well as by the whole parade. If on the march, the directing flank keeps advancing, the rest picking up their dressing on it as they arrive in line.

#### March Past

"——— district, by the right; quick march." On field days and special occasions it is the custom to have Scouts "march past." The officer commanding should give the cautionary-command, "The parade will march past." The District Scoutmaster commanding the leading district should then give

the command "——— district; by the right; quick march" and the district troops will move off. The District Scoutmaster of the following district should, after allowing proper distance between districts, viz., ten paces, repeat the order, and so on.

"——— district, by troops, eyes right (or left as the case may be)." When the District Scoutmaster is ten paces from the saluting base he should give this command. Upon arriving three paces from the saluting base he should himself, eyes right (or left as the case may be), salute, and when three paces past the saluting base drop his hand. The Scoutmaster commanding the leading troop, when arriving three paces from the saluting base should give the command "——— troop, eyes right," immediately come to the salute, and drop his hand when he is three paces past.

"——— patrol, eyes right." Each Patrol Leader, as he reaches three paces from the saluting base, should give this command, at the same time bringing his staff to the shoulder and saluting. The remainder of the patrol only turn their eyes to the right. When three paces past he should give the command "eyes front" drop his hand and return to the trail. Patrol Leaders and troops following should do the same.

#### Meeting Other Troops

**ON THE MARCH.**—When meeting other troops with colours on the march, the commanding Scoutmaster should give the command "eyes right (or left)," when the whole troop will turn eyes right (or left as the case may be). The Scoutmaster and all the officers should salute the colours as they pass, but not the Scouts. When the other troop has passed the command should be given "troop eyes front."

**AT THE HALT.**—When at the halt and another troop passes, the troop should be brought to the "alert," and if without colours the commanding officer only should salute; if with colours each officer should salute as the colours pass him.

**WHEN MEETING FUNERALS.**—When meeting funerals, as when meeting other troops, each officer should salute as the body passes.

#### Colours

**CARRYING OF COLOURS.**—When at the halt, colours should never be "sloped;" They should instead be carried at the "carry" or the order," according as the troops are carrying their staves at the "shoulder" or "order."

When on the move, colours should be carried at the "slope" on the right shoulder, except at the saluting base when they should be at the "carry."

At the "carry" the colour staff should be carried perpendicularly in the belt, which will be worn over the left shoulder. The corner of the colour should be held in the right hand, which will also grasp the staff, level with the forehead.

When at the "order" the colours should be placed perpendicularly on the ground at the right side.

The colours should be let fly as the caution is given for a "royal" or "general salute," and in "marching past," on arriving ten paces from the saluting base until ten paces past, when they should be brought to the "slope."

**POSITION OF COLOURS.**—If in column, the colours should be carried between the two centre patrols, the King's colour on the right covering the Second of the preceding patrol, the rest of the colour party being in line with him, and the troop colour being on the left. A colour party is composed of two Scouts and a Patrol Leader; the Patrol Leader with his staff at the "shoulder," unless the colours are at the "order," the senior Scout carrying the King's colour and the junior Scout the troop colour.

If in column, on the command "general salute" the colour party should double at the "slope" by the right flank and form up three paces in front of the centre of the leading patrol and immediately come to the "carry."

The Scoutmaster in command of the troop should station himself one pace in front of the centre of the colour party and the other Scoutmaster in line with the colour party on its right and left, and remain in that position until ordered to their post.

When in line the colour party should form up between the two centre patrols. If there are an uneven number of patrols to a troop, say three, they should fall in between the second and third, there being always one more patrol in front than behind.

**RECEPTION OF COLOURS.**—The colours should never be brought on parade until after the roll is called, etc.

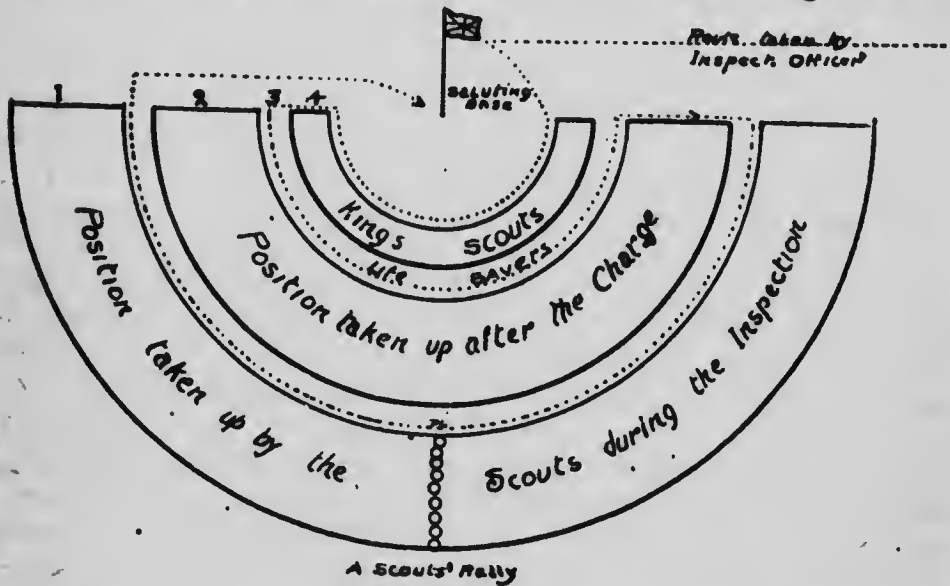
**SALUTING.**—On the caution, "royal salute" the colours should be brought from the "order" to the "carry," and let fly, and upon the command "parade salute" the colour staff should be

lowered parallel with the ground, allowing the colours to rest on the ground.

On the command "alert," the colours should be brought to the "carry," and then to the "order." If Royalty, the Governor-General, the Chief Scout or, if in a foreign country, the King or President be present, the colour staff should be lowered until the head rests on the ground.

**Scouts' Rally**

For the purpose of a "rally" Scouts do not parade like soldiers, in lines, etc., but should take cover and remain hidden away till they are called, when they rush in from all sides, each patrol following its Patrol Leader, cheering and making the patrol calls, and forming a circle round the reviewing officer, at about twenty yards distance from him. All then sing "Be Pre-



pared," and at once "sit at ease" in silence to hear his orders. If there are a large number of Scouts the patrols remain in single file; if a small number they line up to form the circle. If the reviewing officer orders a "figure of eight" or "circle" or "spiral" the order is given "alert, follow your leader." The leading Scoutmaster then moves off through the circle, followed by the nearest Patrol Leader, whose patrol follows him in single file, the next patrol following them in turn and so on, until the whole parade is following in single file at a slow jog-trot, with staves at the trail. The Scoutmaster leads at a slow

pace, describing a big figure of eight or a big circle over the parade ground, or a spiral circle which gradually closes in around the reviewing officer, and then unwinds itself the reverse way. After this the Scoutmaster orders "re-form rally," leads them around, and they re-form on the original circle. When so formed the Scoutmaster orders "sit at ease." The reviewing officer then addresses them, or gives the signal or order to disperse, when all turn about and run quietly away to their original hiding places, each patrol sticking to its Patrol Leader, and ever Scout whistling a long-drawn-out whistle till off the ground.



## CHAPTER XIII

### THE MANAGEMENT OF TROOPS AND PATROLS

The procedure to be followed in connection with the organization of a new troop depends at the outset on whether there are other troops already in existence in the same locality. If the city or town or district has already been organized, which can readily be ascertained by enquiry, it is desirable that the District Commissioner should be consulted at the outset in order that those interested may have the benefit of his experience and advice and also that there may be no friction with other units. If there is only one other troop in the locality and no District Commissioner, it is better to talk things over with the local Scoutmaster or with an officer of the Local Association before organizing the second troop.

If there are no troops in the locality, the wisest course is to communicate with the Provincial Headquarters of the Boy Scouts Association in the province (see page ii for address) which will be glad to render all the assistance in their power, and will, if it is possible or necessary, send some one to the locality to help who is acquainted with organization work. It is not recommended that a number of boys form a patrol independently.

Whether there are Scouts already in the locality or not, these three things are essential to success: (1) a group of boys of Scouting age, that is between twelve and eighteen years, who either are already interested or who can be interested in Scouting; (2) the assurance of adult support and backing in the form of a troop committee, and (3) competent leadership.

As a rule, one has not far to seek for the boys; the difficulty from the inception of the Scout Movement has rather been in finding the right sort of men to lead them, especially since the occurrence of war, for Scoutmasters are in truth the mainstay of the Scout Movement.

First then, wherever a new troop is to be launched you must have a group of boys who either already want to be Scouts or who can be interested in the Scout programme and with them

you must have a prospective Scoutmaster. In practice, many troops originate from the boys' desire to become Scouts. In other cases, the initial steps are taken by clergy, teachers, parents, or others interested in boy life. To ensure permanency, the enterprise must in any case have some measure of adult encouragement and support, not necessarily, however, more than a group of three or four persons for the Scoutmaster to consult with periodically in matters of policy, administration and finance.

Many troops have been successfully organized and carried on among village, town and neighborhood boys without making any use of existing institutions; but better results are generally obtained when troops are connected with well established institutions such as churches, schools and other local organizations.

#### First Train a Nucleus

Troops have come into existence under a great variety of circumstances, but unquestionably the ideal plan of procedure is first to interest and train a small group of the keener or older lads in the principles and practice of Scouting, as a nucleus for the troop. The Patrol Leaders may, in this way, be readily chosen from among those who have shown natural aptitude for leadership or whose preliminary training has qualified them therefor.

Each of the Patrol Leaders and Seconds so selected under the supervision of the Scoutmaster and Assistant Scoutmaster should in turn instruct the boys in his particular Patrol. In this manner the work of instruction may be divided up, enabling the Scoutmaster, Assistant Scoutmaster and Patrol Leaders to be always leading the boys on. Whilst the Patrol Leaders and Seconds are preparing their Patrol members to take the Tenderfoot tests, they can themselves be brought on with the Scoutmaster's help to Second Class and later to First Class Scouts. First Class rank naturally gives the Patrol Leaders and Seconds higher standing in the other members' eyes than they would otherwise command. But apart from this consideration there is a decided advantage in having Patrol Leaders and Seconds who have themselves taken the First Class Training.

#### Start Small

Troops of three, four and even five patrols have been started before any of the Patrol Leaders and Seconds had

taken training for their duties. But organization on this basis is fraught with inherent difficulties.

In Scouting, as in so many other lines, it is generally wiser to begin in a small way. It is a lot easier to start with a small group of boys than a whole troop of twenty, thirty or forty. Remember, it is those who are taken into the troop first who are apt to set the standard of the whole troop in keenness, discipline and general efficiency. Where a new troop is starting up, it is often better not to advertise the fact too broadly at first. These are, however, general considerations and circumstances, as we all know, often alter cases.

The whole troop should not contain more than between thirty and forty boys, otherwise the Scoutmaster would have to be superhuman to give each boy the required individual attention. The membership of boys who are inattentive and irregular in their attendance is a weakness to the troop unless their interest can be quickened by personal attention. Better have a smaller troop with a waiting list than a larger one with weak patrols. Not numbers, so much as efficiency, should be the aim.

#### **The Ideal Scoutmaster**

Not all successful Scoutmasters are themselves expert in the different branches of Scoutcraft, but to succeed the Scoutmaster must be genuinely interested in and have a real love for boys, and be possessed of a general understanding of Scouting and of the mental, moral and physical aims of the Movement, with personal standing and character such as will insure respect and a good moral influence over the boys. A Scoutmaster ordinarily has little or no difficulty in enlisting plenty of expert assistance along various lines, but to hold his own he must also be able by personal knowledge or study to keep himself well abreast of the troop interests in all respects. He should familiarize himself fully at the earliest possible stage with the contents of the present Handbook, which should always be at hand for ready consultation on any doubtful point.

The Scoutmaster's part is rather to give to the boy the ambition and desire to learn for himself. This is done by suggesting to him activities which attract him, and which he learns by experience. It is unnecessary though for any Scoutmaster to train himself to any specified standard of Scouting, because what suits one particular troop may not suit another.

From the inception of the Movement the policy followed has

been to leave wide latitude to Scoutmasters in the arrangement of their own programmes. Scouting covers a considerable range of activities, and it is left to the Scoutmaster to select from among them those which are best suited to the need of the troop. It does not follow though that these are the ones in which the Scoutmaster is himself most proficient, and the thing for the latter to do is to study his boys and in making his selection try to put himself in their place. By all means consult the boys themselves and keep on consulting them, for it is their interests after all that should govern.

Scoutmasters need to be straight themselves, both as to morals and religion, on account of the influence of their example, and those responsible for the selection of Scout officers need to have this first principle well in mind for, however interested, and interesting, and otherwise fit, the candidate for a Scoutmaster's warrant may be, he is not to be trusted as a leader of boys unless his own life and heart are pure.

Happily, Scouting, with its programme of practical idealism, attracts many men of the right sort to act as its interpreters, without whose devoted services troops and patrols could not exist. Under the rules of the Association a Scoutmaster has, however, to serve three months on probation before he is recommended for the Chief Scout's warrant of appointment. The object of this is mainly to give him the opportunity of seeing whether he finds Scouting is, after all, what he expected. It so often happens in similar organizations that a man comes in full of high hopes and ideals, and then finds that he cannot fill in with the views of those in authority or that he has not the gift of dealing with boys. A would-be Scoutmaster, therefore, who finds himself unable to get on with his boys or unable to discipline himself to work in harmony with his local committee or other authority, will do the right thing by resigning his post before his attitude does harm to the lads.

#### Interesting the Boys

Trying to get boys to come under good influence is something like a fisherman wishful to catch fish. If you bait your hook with the kind of food that you like yourself, it is probable that you will not catch many—certainly not the shy, game kind of fish. You therefore use as a bait the food that the fish likes.

So with boys; if you try to preach to them what you consider

elevating matter, you won't catch them. Any obvious "goody-goody" will scare away the more spirited among them, and those are the ones you want to obtain. The only way is to hold out something that really attracts and interests them. Scouting does this. You can afterwards season it with what you want them to have. To get a hold on your boys you must be their friend; but don't be in too great a hurry at first to gain this footing until they have got over their shyness of you. Mr. F. D. How, in his "Book of the Child," sums up the right course in the following story:—

"A man whose daily walk led him down a dingy street saw a tiny boy with grimy face and badly-developed limbs playing with a banana-skin in the gutter. The man nodded to him—the boy shrank away in terror. Next day the man nodded again. The boy had decided there was nothing to be afraid of, and spat at the man. Next day the little fellow only stared. The day after he shouted "Hi!" as the man went on. In time the little fellow smiled back at the greeting which he now began to expect. Finally, the triumph was complete when the boy—a tiny chap—was waiting at the corner and seized the man's fingers in his dirty little fist. It was a dismal street, but it became one of the very brightest spots in all that man's life."

#### **Troop Registration**

The troop once launched, arrangements should be made through the Local Association or with the Provincial Headquarters for its proper registration.

Definite troop and patrol meeting days should also be arranged with the boys.

#### **Ceremonial Investiture**

For the ceremonial to be used in the investiture of a Tenderfoot Scout see page 45 of Chapter I. The boy at Scouting age is impressed with this ceremonial, if it is carried out in a dignified spirit, and there is a good deal to be said for the institution in troops of formal investitures also for the Second and First Class ranks. Whatever is attempted in this respect should, however, be simple.

#### **Troop Headquarters**

Half the battle is to get the loan of a room for certain nights in the week, or to hire one as a club for the Scouts, even if they only consist of a patrol. To prevent depression and bore-

dom, it must be well lighted and ventilated. Pictures of incidents (not landscapes or old portraits) will help to make the place attractive. In winter, if possible, have also a bright fire. Interesting illustrated books and magazines, along with furniture, games, etc., can generally be got from well wishers. The Scouts themselves should do the cleaning and decorating and should make the simple furniture required. Discipline and good order should be kept inside the room and neatness insisted



Troop Headquarters.

*Reproduced by permission from the painting by the late Lieut. Ernest S. Carlos.*

on, Patrol Leaders being made responsible, patrols taking it in turn to be responsible for the cleanliness and good order of the room for a week at a time.

If a bit of ground, even waste ground or a backyard, is available so much the better. It is an advantage to have some place where the Scouts can make huts, light fires, play games, cultivate gardens, make tracks, etc.

As far as possible, make the boys themselves manage the troop affairs. Sit back yourself and let them make their mistakes at first, till they learn sense and responsibility.

The troop headquarters had better not be turned into a lady's

boudoir, as the boys must be able to romp in it occasionally. So you want furniture that will pack away into a corner, such as folding wooden chairs, small tables, and a cupboard in which to put away books, games, etc., when the romp comes on. A better headquarters is one of two rooms—one for quiet games, reading, and talking, the other for play.

But it is still better, if possible, to obtain a house where each patrol has its own room for the furnishing and cleanliness of which it is responsible.

#### Finance

By reference to Chapter I (see page 38) it will be seen that, although the expenditure involved in the organization and upkeep of a troop is small, it is desirable that the problem of finance should be given proper consideration at an early stage. In many troops, the Scouts each pay a small subscription towards rent, lighting, furnishing, etc., the major expenses being provided for by means of some troop work by them, such as garden produce, toys, displays, or entertainments. Let it be understood that, in as far as Boy Scouts are themselves able to contribute towards their troops and patrol expenses, the money should be earned and not solicited.

It is the part of wisdom from the inception of the troop to have the boys do everything possible towards its support, but in practice it may be found that their individual contributions and united efforts may, at times, have to be supplemented by outside subscriptions. Under the Rules of the Association, Scouts are not allowed to solicit money either for their troop fund or any other purpose.

Scout membership should not in any case involve a greater outlay than the poorer boys can afford. Broadly speaking, troop funds should be utilized for troop purposes and patrol funds, if there be any, for patrol expenses. Each Scout should be expected to earn or provide his own uniform and equipment. By all means let there be business like account kept of all receipts and expenditures, and wherever possible let the troop and patrol funds be deposited in a local bank. One of the main purposes of the Local Association is to advise and to assist the local troops in matters connected with finance.

#### Equipment

The ordinary troop is made up of boys of different means, and the problem of the purchase of uniforms and equipment

is one for careful deliberation by the Scoutmaster and troop committee. It will usually be found that the boys are anxious right away to obtain their uniforms. But let those in authority not be unduly hurried by this fact. Remember that whilst uniforms and equipment alike are most helpful they are not absolutely essential to success at any stage and are certainly not so until the troop has been organized and shows at least some of the evidences of permanency. Useful advice regarding uniforms and equipment may be obtained either on application to the officers of the Local Association or from the Provincial Headquarters and the new troop will make no mistake in availing itself of this assistance.

By all means avoid going into debt for these things. Far the best thing is for the boys, whether poor or well to do, to earn the cost of their uniform and equipment by some useful form of service or employment paid for at fair and reasonable rates. By so doing the boy receives a valuable lesson in the working value of money. It is human nature to place more value upon things that we have worked for and gained by our own effort. Where this plan does not commend itself, far better have the boys unite in raising the necessary funds than that things should be given to them for nothing.

Apart from the headquarters accommodation and fittings and the troop colours, there will be need for a first aid kit, road maps, combination cooking outfit, tents, etc., when the troop takes the field or goes into camp; and the troop property will naturally grow in extent with time and internal development. It is a good lesson in co-operation for the lads themselves to have and to hold this property in common, and what has just been said of troop equipment applies as well to the patrol outfit since the patrol rather than the troop is in many ways recognized as the real unit of Scouting activities.

#### Grouping

The Policy, Organization, and Rules of the Association purposely contain no specific directions in regard to the grouping of the boys in either troops or patrols. But, obviously, here is a problem requiring the attention of the Scoutmaster. In making up the troop, care should be taken to have boys of different ages. If, though, there are too many little fellows in the troop, it is apt to drive the older boys out. Let the grouping problem, like a great many other things, be considered in the



main by patrols. Sometimes it happens that many of the boys have formed their own groups either through previous intimacy or common interests, or otherwise. One trouble about the arbitrary grouping of the troop into patrols is that it is apt to separate close friends.

Most, if not all, of the artificial plans of grouping, have their limitations and it is not the purpose of this book to lay down too hard and fast lines for troop management as a great deal of latitude must of necessity be left to the Scoutmaster. Some considerations suggest themselves, however, which it may, perhaps, be helpful to point out. Boys may be grouped by their ages, but this does not always work out satisfactorily because boys' size and mental and physical standard do not always correspond with their years. Another plan of grouping is by height and weight rather than by age. This is the course ordinarily followed in athletic competitions. Still another way is by trying to group the boys in accordance with their school standing and intellectual development. Best of all, perhaps, is the basis of common intimacies, hobbies and interests.

#### Suggestions to Scoutmasters

Scoutmasters have found in many cases that it was easier to start a troop than to keep it going afterward. Sometimes this has been due to initial mistakes in the organization stage. A very great error occurs if a well considered programme of work is not planned with the boys in advance. Let the work be divided up into summer and winter activities, into indoor and outdoor interests, with a strong emphasis on the latter. Let the plan which is adopted be talked over first between the Scoutmaster and his Patrol Leaders and Seconds, either individually or meeting as a Court of Honour; but let it also be thoroughly understood by all, so that every member of the troop may be enabled to see the definite end in view. And don't forget the positive necessity of interweaving plenty of recreation into the programme; for, remember, "All work and no play makes Jack a dull boy." Under competent direction, Scouting can be made recreational through and through. Whatever programme is adopted by the troop should be elastic enough to leave plenty of scope for variety and circumstances. It must not be too rigid or something will surely snap.

The first essential for carrying out this training is to put yourself in the boy's place, look at it from his point of view,

present your subject to him as he would like to have it, and so get him to teach himself without your having to hammer it into him.

Then remember that your own character soon reflects itself in your boys. If you are impatient, they, too, become impatient and all goes awry. But as you come to teach these things you will very soon find (unless you are a ready-made angel) that you are acquiring them yourself all the time. You must "be prepared" for disappointments at first, though you will often as not find them outweighed by unexpected successes.

You must from the first "be prepared," too, for the prevailing want of concentration of mind on the part of the boys, and if you then frame your teaching accordingly, you will have very few disappointments. Do not expect boys to pay great attention to any one subject for very long, until you have educated them to do so. You must meet them half-way, and not give them too long a dose of one drink. A short, pleasing sip of one kind, and then off to another, is what is needed, gradually lengthening the sips till they become steady draughts. A formal lecture on almost any subject very soon palls on them, their thoughts begin to wander, and they get bored, because they have not learnt the art of switching their mind where they want it to be, and holding it there.

Thus, making the mind amenable to the will is one of the important inner points in the Scout training.

For this reason it is well to think out beforehand each day what you want to say on your subject, and then bring it out a bit at a time as opportunity offers—at the camp fire, or in intervals of play and practice, not in one long set address.

Frequent practical demonstrations and practices should be sandwiched in between the sections of the lecture to hold the attention of the boys and to drive theory home. A Scoutmaster has a free hand given him to train his boys in his own way. The proficiency badges give scope and variety for useful training, and though many a Scoutmaster may feel diffident about his own power personally to give such varied instruction, he can generally obtain the temporary service of a friend or expert to help.

Even a small bookshelf containing copies of the present Handbook, and a few books on technical and other subjects of interest to Scouts will be found well worth having, either for the troop or the patrol. Before passing from this phase

of the subject, let a word be said of counsel to the Scoutmaster not to overlook his obligations to those immediately under him who should have the utmost facilities provided for their instruction and encouragement in all respects.

A word of warning may not be out of place against hurrying things too much in the advancement of the boys from one stage to another in the training. A troop in which the members are railroaded through their Tenderfoot, Second Class and First Class tests is not one in which the interest is likely to last. Scouting is not a race to see which boy, by cramming, can pass for the most badges in the shortest time. Care should rather be taken to see that each stage is well mastered in the training before passing on to another. Even in the case of the Tenderfoot and Second Class badges, due care should be taken to make sure that the candidate has fully qualified before the badge is granted. Only a Scout who has shown by his examination that he has a thorough knowledge of the necessary requirements for the test should be recommended.

Officers of troops should aim to make the training progressive, so that the badge of high rank should represent not only a large number of tests successfully passed, but a high degree attained in the development of the real aim of Scouting—character. The best Scout not only wins badges and decorations, but because of his Scout training he becomes more obedient, more observant, more loyal, more thoughtful for others, of greater service to the public, and himself living on a higher physical and moral plane.

#### Notice Board

By all means let there be announcement made on a notice board at troop headquarters, or otherwise, of all matters of common interest, including appointments, promotions, meetings, hikes, camps, sports, parades, competitions, etc. It is a good plan to have notice given of the programme for the next troop and patrol meetings.

#### Proficiency Badges

These are established with a view to developing in each lad the taste for hobbies or handicrafts, one of which may ultimately enable him to discover his own natural aptitudes and thus not leave him hopeless and helpless on going out into the world.

**Story Telling**

The Scoutmaster will find that a good story well told is a very attractive feature around the evening camp fire, and on other occasions when the troop may be gathered together. The value of a good story lies in the attitude of the boy towards the leading characters of the yarn. The listener will naturally associate himself with the hero, and if the experiences described are of a healthy, virile nature, it means much in the directing and strengthening of the boy's character.

In his selection of stories, therefore, the Scoutmaster should keep before him the fact that the story should appeal in a direct way to the boys who are listening. It must be full of action; the imagination must be given plenty of scope, the climax should be reached without long drawn out descriptions, which tire the listeners; and, lastly, the Scout virtues of honour and loyalty must be exemplified in the hero. The questionable or unscrupulous character should be introduced only in contrast with the hero. A good story is often spoiled by having a moral attached to the end of it. The moral should be so self apparent, that the boy cannot fail to make his own personal application of it. Stories should be as varied as possible, and in their choice plenty of room should be left for good, wholesome fun. For a list of books of service in connection with this feature of the Scouting programme see pp. 616-618.

**Plays**

Boys are full of romance, and they love "make believe" to a greater extent than they like to show. All you have to do is to play up to this, and to give rein to your imagination to meet their requirements. But you have to treat with all seriousness the many tickling incidents that will arise; the moment you laugh at a situation the boys are quick to feel that it is all a farce and to lose faith in it forthwith and forever.

To stand on the right footing for getting the best out of your boys, you must see things with their eyes. To you the orchard must, as it is with them, be Sherwood Forest with Robin Hood and his Merry Men in the background; the fishing harbour may be, perhaps, the Spanish Main with its pirates and privateers; even the town common may be a prairie teeming with buffaloes and Red Indians, or the narrow slum a mountain gorge where live the bandits or the bears.

Once you take this line, you see how deadly dreary and how

wasteful seems the dull routine of drill upon which the unimaginative Scoutmaster falls back as his medium of instruction. Think out the points you want your boys to learn, and then make up games to bring them into practice. Bacon said that play-acting was one of the best means of educating children, and one can quite believe him. It develops the natural power in them of imitation, and of wit and imagination, all of which help in the development of character; and at the same time lessons of history and morality can be impressed on their minds far better by their assuming the characters and acting the incidents themselves than by any amount of preaching of the same on the part of the teacher.

The craze for historical pageants is in reality an excellent idea educationally. In places where pageants have been held, both old and young have learned—and learned for the rest of their lives—something of the history of their forefathers and their town; and have learned to sink differences of class, and to do something for the public without expecting payment for it. Instructors will find it genuinely useful practice to make their Scouts act scenes from history or of incidents with which they desire to impress them. When the performances attain a certain degree of merit, they might be used as a means of obtaining funds.

#### **Discipline**

Insist on discipline, and strict, quick obedience in small details; let them run riot only when you give leave for it, which is a good thing to do every now and then. Keep yourself in the background as much as you can. The best disciplinarians are born rather than made. Yet if you have your troubles in this respect much can be accomplished by the exercise of common sense and by taking a leaf out of the more experienced Scoutmaster's note book.

Be very sparing in your commands.

Practise absolute fairness and justice: concealing from notice as well as may be, both your especial likes and dislikes, if there be any.

Be particularly definite in your directions and let everyone see what your plan of discipline is intended to accomplish so that you may create respect and sympathy and co-operation all round.

Let your reprimands be pointed, private and individual rather than indiscriminately scolding and collective.

A nation to be powerful and prosperous must be well disciplined, and you only get discipline in the mass by discipline in the individual. By discipline is meant quick and eager obedience to authority and to other dictates of duty. This cannot be got by repressive measures, but by encouragement and by educating the boy first in self-discipline and in sacrificing of self and selfish pleasures for the benefit of others. This teaching is largely effected by means of example, by putting responsibility upon him and by expecting a high standard of trustworthiness from him. Responsibility is largely given through the Patrol System by holding the Leader really responsible for what goes on amongst his boys. There lies our work.

#### **Good Turns**

It is part of every Scout's duty to try his best to do at least one good turn to somebody every day. Sometimes it will happen that an opportunity offers for a collective good turn in which the whole patrol or troop or district can take part. If so, let the members all take their part loyally in upholding the law and the honour of their unit.

#### **Troop Records**

A complete system of records is essential to permanent success in troop organization and work. It is better to have some one specially appointed, each troop to be responsible for the records of applications for membership attendance, receipts and expenditures, dues, equipment, badge certificates and diary of troop activities. A standard troop record book is published by the Canadian General Council in loose leaf form at a price of \$1.75 net. Copies of this book may be obtained through the various provincial offices.

#### **Troop Problems**

In Scouting, as in other things, initial success is apt to be followed by reaction, and the more rapidly success has come, the more certain reaction is to follow. There was a period in the history of the Scout Movement a few years back when the tremendous initial success of the enterprise gave place to a temporary setback. The same thing is apt to happen in troop affairs, especially if recruits have been taken in too quickly. The first enthusiasm of the boys begins to languish. The novelty wears off and some of the fellows become irregular in their attendance or drop out altogether. A crisis seems to have

been reached with a risk of total collapse. If this happens, let not either the Scoutmaster or his Assistants be discouraged but let them exert themselves instead to fan up the keenness of those who remain, talking as little as may be about the difficulties but pushing on determinedly with the troop work. After a while, it will usually be found that there is a nucleus of good Scouts remaining who have stood by their leaders throughout. Here, then, is a solid foundation on which to build for permanent success.

There will be cases in which individual boys do not "pull" with one another, and sometimes disputes and differences of a more accentuated kind may occur. The experienced Scoutmaster keeps a watchful eye on these occurrences but allows things to work themselves out in their own way without interference on his part, unless the latter becomes absolutely necessary. If any personal disputes reach the stage of open animosity and factional hostility, it may be better to let the boys make new alignments, even if their doing so results in the formation of new patrols.

Guard against the introduction of athletic leagues into the Scouting programme. Where baseball and other competitive games, good in themselves, are substituted for the regular Scouting activities to overcome a seeming lack of interest in Scouting, there is either something wrong with your leadership or with the Patrol Leaders' handling of things under you.

Guard, too, against wasting too much time and energy on indoor activities, for the best part of Scoutcraft is that which is learned out of doors. Scouts who have never gone into camp don't know what they're missing.

In his work the Scoutmaster is sure at different stages to meet with critics ready to present objections aplenty against Scouting principles and practice, such as its supposed relation to militarism or lack of military discipline and drill, the absence of religious education or the absurdity of Scout plays. The Scoutmaster who has mastered his training will not, however, find much trouble in holding his own on any of these points.

Cases may arise in which a Scout or prospective Scout's parents do not approve of his connection with the Movement. A personal call by the Scoutmaster on the parents, with an explanation of Scout aims, will usually overcome this diffi-

culty. But, if the parents persist in their attitude of objection, it is better to drop the boy from the troop.

What has been said regarding parental objections applies with almost equal force to any objections which misunderstanding of Scouting may create among the local clergy. The Scoutmaster must try to work in harmony with the religious institutions with which his boys are connected.

The case will arise in many troops of the working boy with little or no spare time except in the evenings. In Scouting, as in life itself, one encounters many different types of boy life, among others the shy boy, the jovial masterful boy, the mischievous or "smartie" fellow and the bully; the weak and the strong, in mind and body, the foreign born, the girl-struck type, the self-conscious and the unconscious, the neglected and delinquent, the poverty stricken and those who have grown up apart from parental control and discipline. With study and contact will, however, come experience and understanding of problems reaching down to the very roots of our diverse yet common humanity.

### THE PATROL SYSTEM

#### The Patrol the Scouting Unit

The dividing of boys into permanent groups, or patrols, of from six to nine, and treating them as separate units, each under its own responsible leader is the key to success with a troop. Through emulation and competition between patrols you produce a patrol spirit which is eminently satisfactory, since it raises the tone among the boys and develops a higher standard of efficiency all around.

The value of the Patrol System and the Court of Honour for training boys was perhaps too lightly dealt with in the earlier stages of the Scout training. But Scoutmasters have gradually grasped its inner meaning and have developed its use in their troops. It is the one essential feature in which our training differs from that of all other organizations, and where the system is properly applied it is absolutely bound to bring success. It cannot help itself!

The Patrol is the unit of Scouting, whether for work or for play, for discipline or for duty, and since the war it has shown that it is the unit that can be relied on to do its duty well.

An invaluable step in character training is to put responsibility on to the individual. This is immediately gained in ap-



pointing a Patrol Leader to responsible command of his patrol. It is up to him to take hold of and to develop the qualities of each boy in his patrol. It sounds a big order, but in practice it works. With proper emulation established between the different patrols, a patrol esprit-de-corps is developed and each boy in that patrol realizes that he is, in himself, a responsible unit and that the honour of his group depends in some degree on his own efficiency in playing the game.



Patrol orders in camp.

We have now an excellent handbook on the subject, entitled "The Patrol System" by Captain the Hon. Roland Philipps, a Scoutmaster who went through the mill in carrying out the idea to a successful issue. This book (see p. 616) is strongly recommended as it will lighten your labours, however experienced you may be, and to a young Scoutmaster or to a Patrol Leader it explains the why and the how of the whole thing. Since "The Patrol System" was written, Captain Philipps has himself been called to Higher Service. Those who study it will see in it a new meaning underlying the mere instructions for dealing with patrols; every page breathes that spirit with which the author made his happy sacrifice—loyalty to his

leader, and to those he led, a total effacement of self, and a cheerful devotion of his energy—his very life—to the cause he had in hand. This is the Scouting spirit. It is the spirit which we want to inculcate into the boys, a spirit which can be given out, but only by those who have cultivated it in themselves.

Another excellent treatise on the Patrol System is entitled "How To Run a Patrol," by Rev. John Lewis (see p. 616).

Many Scoutmasters and others do not at first recognize the extraordinary value which they can get out of the Patrol System if they like to use it. To get the best results you must give the Leader real, free-handed responsibility and trust him. If you give only partial responsibility you will get only partial results. By thus recognizing our Leaders as responsible officers you save yourself an infinite amount of troublesome detail work. The object, however, of the system is not so much to save trouble for the Scoutmasters as to give responsibility to the boy—since this is the very best of all means of developing character.

The group or gang is the natural unit among boys, whether for play or for mischief, and the boy with the most character among them generally comes to the top as their leader. Apply this natural scheme to your own ends and it brings the best results. The Scoutmaster gives the aim, and the several patrols vie with each other in attaining it, thus automatically raising their standard of keenness and efficiency all round. The practical effect can be seen in several instances in the Boy Scout Movement, where, the Scoutmaster having departed, the troop runs itself perfectly well under Patrol Leaders inured to responsibility.

#### Selection of Patrol Leader

It follows from what has just been said that the selection of the Patrol Leader is a matter of supreme importance. Under the regulations he may be appointed by the Scoutmasters, or by the vote of the patrol. In some cases the Scoutmaster may find it necessary to exercise his authority but where it is left to the boys the chances are in favour of their picking the natural leader to take command. The appointment had, perhaps, better be for a time provisional. If responsibility is altogether a novel experience to the newly appointed Patrol Leader, it had better be given gradually and with the sympathetic help of the Scoutmaster until the boy becomes accustomed to his duties.

In the last analysis, ability to lead becomes the final test of fitness. Gradually it will come about that the Patrol Leader besides carrying out the Scoutmaster's orders will develop plans and policies of his own. This is in the line of natural progression and should be encouraged.

The regulations allow the Patrol Leader to choose his own Second, and this is a wise procedure because of the close relationship between the two necessary to success. Wherever it is possible, the Patrol Leader should be encouraged to delegate definite authority to his Second in order that the latter may have his share as well in the training for leadership.

#### **The Court of Honour**

The Patrol Leaders and their Seconds with the officers of the troop form a Court of Honour, which manages the internal affairs of the troop. Its institution is the best guarantee for permanent vitality and success. It takes a great deal of minor routine work off the shoulders of the Scoutmaster, and at the same time gives to the boys a real responsibility and a serious outlook on the affairs of their troop. It is mainly due to the Patrol Leaders and to the Courts of Honour that very many of our troops have been able to continue their existence and to carry on useful work during the war, even though their Scoutmasters have gone away on the service of the country.

In its origin this body had to do alone with punishments, awards and important matters in connection with the running of the troop. In its wider application it has also to do with the ordinary routine business. The Court has, therefore, two capacities—the one judicial and the other executive. Its judicial capacity is restricted to dealing with breaches of the Scout Law. The Scoutmaster's power of veto over court decisions means that a Scoutmaster, in practise, will seldom have to exercise his personal authority.

#### **Instruction Through Games**

Instruction in Scouting should be given as far as possible through practices, games and competitions. Games should be organized mainly as team matches, where the patrol forms the team, and every boy is playing, none merely looking on. Strict obedience to the rules should be at all times insisted on as instruction in discipline. Chapter XI of the present Handbook contains a number of selected games and practices. The sug-



**Raw Material.**  
*Reproduced by permission from the painting by the late Lieut. Ernest S. Carlos.*

gestions in the book as to games may, however, be altered by Scoutmasters, where necessary to suit local conditions. The ideas given are indeed merely offered as suggestions, upon which it is hoped that Scoutmasters will develop further games, competitions and displays.

Let there be care exercised to see that patrol competition be used for instruction rather than for display. Care needs also to be taken with patrol camps and hikes to have one of the adult officers in charge in order that no cases may thoughtlessly occur of trespass or of violation of fire and property regulations.

#### Patrol Specialization

Many Scoutmasters also plan the work of their troops or patrols in such a way as to give special attention to certain subjects; thus, one Scoutmaster may have patrols specially trained as Signallers, Missioners, Telegraphists or Ambulance men.

Human nature, even in boyhood, is many-sided, but there is much to be said in favour of patrols specializing in certain badges. In fact this plan of training has repeatedly been urged upon the attention of Scoutmasters since the inception of the Movement.

Badges may be sewn on the patrol flag indicating the subject in which any individual patrol is specializing.

#### A Word to Patrol Leaders

Let Patrol Leaders go on and train their patrols in future entirely themselves because it is possible for them in this way to get hold of each boy in the patrol and make a good fellow of him. It is no use having one or two brilliant boys and the rest no good at all. You should try to make them all fairly good. The most important step to this is your own example, because what you do yourselves your Scouts will also do. Show them that you can obey orders, whether they are given by word of mouth or merely rules that are printed or written, and that you carry them out whether your Scoutmaster is present or not. Show them that you can get badges for proficiency in different handicrafts and your boys will with very little persuasion follow your lead. But remember that you must give them the lead and not the push. That is the difference between our Army and the German Army. In the German Army the officers say, "Go on, men," and shove them

on into the fight. In our Army the officers say, "Come on, men," and lead them to victory. And you Patrol Leaders should do the same in training your Scouts.

#### A Word to Scouts

And to the Scouts, you have seen in the War how victories are won—that is by men obeying and following the lead of their officers, even though in doing so many of them go to their death. But they do it, because they know that if all obey and carry out the work given them like one man, their side will win. It is the same in Scouting. It is only by co-operative endeavour that the individual can hope to serve his day and generation. Obey your Patrol Leader, follow his lead, and your patrol will rise to be second to none.

## CHAPTER XIV

### SUGGESTED PROGRAMMES FOR TROOP ORGANIZATION AND TRAINING

The programmes following cover the organization of a new troop and the training of a selected group of boys up to Second Class Scout standing, at which point their services may be utilized in the training of the other fellows. The tenth programme marks the beginning of the training of the remaining members of the troop in the Tenderfoot requirements. It is not, however, supposed that those who have attained either Tenderfoot or Second Class standing will stop short at these points, but rather that they will advance in due course to First Class and King's Scout rank, and qualify for such of the proficiency badges as may be within their reach.

The programmes have been prepared to meet the need of new Scoutmasters for suggestions which would be of assistance to them in starting their work in a proper manner. They are not, however, to be understood as in any sense binding. On the contrary their scope is entirely suggestive. Yet it is hoped that they may help beginners to avoid some of the pitfalls that experience has disclosed. The further conduct of the troop should be along the lines indicated in the chapter of this book dealing with troop and patrol management.

To what has already been said, let this further word of advice be added, that the new Scoutmaster will make no mistake in acquainting himself fully with the contents of the present Handbook, and in consulting freely with others in the district who have had personal experience in Scouting matters. Particularly should he keep in touch, in all cases, with the district officers where these exist. Where the new troop is being started in an unorganized district, he should consult with the Provincial Headquarters.

#### PROGRAMME I

##### First Meeting

The arrangements for the meeting should be made by the Scoutmaster, who should either himself preside at the initial

meeting, or arrange with someone else prominent in the institution in connection with which the troop is being organized, to do so. The prospective Scoutmaster should, in any case, have a definite part in the programme, the nature of which may depend on the extent to which he is able with advantage to secure others' assistance. The chairman should at the outset explain in a very few words the object of the meeting: viz., the organization of a troop of Boy Scouts.

1. The first feature of this initial meeting should be an address to the boys on Scoutcraft, its aims and objects. This address should be as brief and interesting as possible, and contain an outline of the whole Scouting programme. If the district is already organized this address should be given by one of the leading officers or members of the district organization. If there is no local organization, an effort should be made through the Provincial Headquarters, or otherwise, to secure the presence of a suitable person, that is to say, someone well acquainted with the Scout Movement.

2. Following the address lantern slide pictures of Scouting activities or demonstrations of the same by Scouts will help in more fully interesting the boys and in fixing the Scout training in their minds.

3. Let there also be a talk given on the Scout Oath and Law (see p. iv. and chap. X.). This should be given by the prospective Scoutmaster, or possibly by the prospective Assistant Scoutmaster, if the former has already taken part as chairman.

4. The point has been reached when authority may be asked from the meeting for the definite organization of the troop.

5. A record should be made of the names and addresses of all boys who are desirous of becoming members of the troop and application forms should be handed them to be taken home for their parents' information and consent. The following form is used for this purpose:

Form 1-R

**THE BOY SCOUTS ASSOCIATION  
CANADA**

**APPLICATION FOR MEMBERSHIP.**

Place ..... Date ..... 19.... Province .....

I hereby apply for membership in ..... Troop,  
of the Boy Scouts Association in Canada, and agree to be



guided by the rules of the troop and duly constituted Scout authority.

If at any time I cease to be a Scout through fault of my own, I agree to return upon request of the Scout authorities, my Tenderfoot badge and other badges and decorations which may have been purchased by me or loaned to me.

ON MY HONOUR I PROMISE THAT I WILL DO MY BEST:—

1. To do my duty to God and the King,
2. To help other people at all times,
3. To obey the Scout Law.

..... Boy's Signature.

Residence ..... Phone.....

School or Employer .....

Teacher ..... Address .....

Church connection ..... Nationality .....

I HEREBY CERTIFY THAT ..... was born  
 ..... 19.... I have read the Scout Law and  
 Promise and am willing and desirous that he become a member  
 of ..... Troop of Boy Scouts  
 and I will assist him in observing the rules of the Association.  
 I also certify that he is in good health and physical condition  
 (except .....) )

.....  
Parent (or Guardian).

The boys should also be furnished with printed leaflets to take home with them, regarding the objects and training of the Boy Scouts, copies of which may be obtained on application to the district or Provincial headquarters.

6. An opportunity may be given at this point for the boys to ask any questions they may desire.

7. A definite time and place should be arranged for the next meeting in a week's time.

8. Close the meeting with cheers for the King and the Scout Movement and any good yell which may be improvised.

This meeting should not be of more than one hour and a half duration, beginning at 7.30 p.m., and closing at 9.

**PROGRAMME II****Second Meeting**

1. Before the meeting is called to order, twenty minutes to half an hour of group games should be played (see chapter on Games for suggestions):

2. Call the meeting to order and receive the application blanks given out at the previous meeting. Answer any questions the boys may ask in connection therewith.

Remember that the boy, on joining, wants to begin "Scouting" right away; so don't dull his keenness, as is so often done, by too much preliminary explanation. Meet his wants by games and Scouting practices, and instil elementary details bit by bit afterwards as you go along. The training that does not take account of these considerations is doomed to failure from the outset.

3. Arrange for the election of a temporary secretary who will afterwards enroll the applications in a standard troop record book, procurable through district or Provincial headquarters, at \$1.75. This book includes all the forms in general use for troop purposes.

4. State the desirability of each boy providing himself with a copy of the Handbook.

5. Scout song "Boys, Be Prepared."

6. Experience has shown that it is difficult in practice for an inexperienced Scoutmaster to carry out alone the training of several patrols of boys, entirely unacquainted with Scouting. Unless the Scoutmaster has an abundance of qualified support and assistance it will generally be found advantageous to select at this second meeting a group of eight or ten boys for training up to Second Class Scout standing before entering upon the training of the troop at large. The whole troop should participate in the selection of this nucleus under the Scoutmaster's guidance. It should be explained to the troop meeting that the training of the nucleus will take not less than four weeks' time, but that the whole troop will turn out for at least two afternoon hikes and that as soon as the nucleus is brought up to Second Class Scout standing they will assist in the training of the other lads.

7. Practise the Scouts' Rally Call, to be shouted as a salute, or in a game, or at any time.

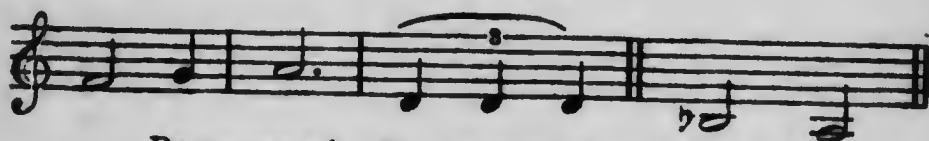
Leader: Be prepared!

Chorus: Zing-a-Zing!  
Bom! Bom!

Stamp or bang something at the "Bom! Bom!")

SOLO (*Leader*).

CHORUS.



Be prepared. Zing-a-zing! Bom! Bom!

8. Practise the Scouts' Call, which is used by a Scoutmaster to call together his troop by bugle; or for Scouts to whistle to attract the attention of other Scouts.



9. This ripping yell has been heard in more than one Province of Canada:

I, ji itta ki!  
I, I, yip!  
Boy Scouts, Boy Scouts,  
Rip, Rip, Rip!  
Canta teeta wa wa,  
Canta teeta tar,  
Go it Scouts, Go it Scouts  
Rah, rah, rah!  
S—C—O—U—T—S!  
Scouts!!!

Although yells may seem at first sight to be odd, especially to those who have never had much to do with boys, yet there is a certain value underlying them as a corrective of self-consciousness. If you want, for instance, to get discipline among your lads it means their constantly bottling up some energy that requires an occasional vent or safety-valve. A yell supplies such vent, but still in a certain disciplined way. Also it forms an attraction to wilder spirits who would never join a band of quieter boys.

Most schools, colleges and athletic teams have their "yells," of which "zing-a-zing," etc., is a type.

10. Dismiss troop meeting and announce that first meeting of nucleus for training in Tenderfoot requirements will be held at a specified time and place. Announce also that the first troop hike will be held on a specified date, to a point of interest in the country or woods, Saturday afternoon following the first meeting of the nucleus is perhaps the best time. Explain that each boy will be expected to bring along a luncheon in a form that will not require cooking. Advise the boys as to what kind of clothes and shoes they should wear.

### PROGRAMME III

#### Third Meeting

Attendance limited to a group of eight or ten boys selected at preceding meeting.

The Scoutmaster should have and use the assistance of his Assistant Scoutmaster in the instructional work to be undertaken at this meeting and subsequent meetings. If the district is one in which there are other Scout troops, it will be found most advantageous to have the help of a few well trained Scouts in demonstrating the requirements for the Tenderfoot and Second Class tests.

1. Call meeting to order by whistle (or bugle). Have tables, note books and pencils for writing.

2. Read over and comment on each feature of the Scout Law in order (see p. 7.) Then have the boys write out each feature of the Law as you enumerate them.

3. Go over the Scout signs, including patrol signs, using a blackboard (see p. 39.)

4. Teach the Scout salutes, full and half, explain where used and impress need of smartness. Explain significance of salute (see p. 90.)

5. The boys, having formed up in line, the Union Jack should be raised, when all present will come to the alert.

Explain the significance and composition of the Union Jack (see p. 495.) Have cards in colours showing each stage of the flag's development. If possible, supply coloured crayons and have each boy make a copy of the St. George's, St. Andrew's and St. Patrick's crosses for himself. Be prepared to answer any questions and discuss any details in connection

with the formation and history of the Union Jack. Show the proper method of flying it; show also how to prepare it for hoisting (see p. 362.) Explain meaning of the Union Jack when flown upside down and at half mast (see p. 495.) Refer to the Canadian red ensign and its proper use (see p. 495.)

6. Instruct in making six prescribed knots. These should always be made with a rope, not with string or shoe laces. Insist also on knowledge of the uses of all knots learned. Have sample knots made with rope displayed on a board where the boys can see clearly how each is made (see page 136).

7. Announce definite arrangements for hike on following Saturday afternoon or other holiday, into the country or woods, for all those whose applications have been handed in. Make each one present responsible for the attendance of a certain number of the other boys. Outline the programme fully for this first hike.

8. Line the boys up for formal dismissal. On the command, "dismiss," each boy will turn to the right and afterwards move quietly away.

#### PROGRAMME IV

##### Afternoon Hike

1. Meet at headquarters at the pre-arranged time, say 2 or 2.30 p.m.
2. Proceed by route previously arranged to country or woods. In arranging place for eating lunch, be sure to pick on some spot where pure drinking water is available.
3. Spend an hour in outdoor group games (see Chapter XI.)
4. Practice Scout's pace over measured distance of one mile (see p. 572).

#### PROGRAMME V

##### Fourth Meeting

This is the second meeting of the selected group of boys.

1. Call meeting to order by whistle (or bugle) promptly at the appointed hour.
2. Review work of previous meeting commencing with a recital of the Scout Law by all present.
3. Test boys on Scout signs, Patrol signs, Scout salutes, etc.
4. Test boys' knowledge of composition of the Union Jack and the making of the six prescribed knots.

5. At this point the Scoutmaster should make a record of the names of the boys who have passed the Tenderfoot tests. Any who have failed to pass should receive special instruction before the next meeting.

6. Outline the requirements for the Second Class badge.

7. Give, or arrange for instruction in first aid requirements on subsequent day. Refer boys for study purposes to p. 440.

8. Run over the semaphore (or Morse) alphabet with flags, and encourage the boys to practise alphabet signals shown on p. 400.

9. Explain (using blackboard) the compass requirements. Refer the boys also to p. 115 for study purposes.

10. Announce group hike for following Saturday afternoon at which take up sections (d), (e), (f) and (g), of Second Class test requirements.

The boys should be warned to come prepared to cook their lunch outdoors, and the equipment necessary should be explained to them. Suggest purchase of Scout haversack by each boy for the carriage of food, etc.; also purchase of Scout billy can for cooking, etc. The latter will be required in connection with "g" test of the Second Class badge requirements.

11. Close evening with a game.

## PROGRAMME VI

### Group Hike

1. Start from rendezvous promptly on appointed hour, leaving Scout signs to be followed by late comers, if any.

2. Have the Assistant Scoutmaster, or one of the group who has been previously instructed, start at least fifteen minutes ahead of the main party and lay a trail, using Scout signs. Trees should not, however, be blazed but pieces of paper or rag may be fastened thereto.

3. On reaching destination, practise semaphore (or Morse) alphabet, using flags.

4. Play a game.

5. Prepare for lunch, demonstrating laying and lighting fires, and cooking requirements for Second Class tests (page 48.)

6. Lunch.

7. Test boys' knowledge of compass.

8. Start for home with a tracking game such as "Far and Near."
9. Scouts' pace may also be practised as opportunity presents itself.
10. Announce winners of game and plans for next meeting.

#### PROGRAMME VII

##### Fifth Meeting

1. Open meeting with a game, preferably one having a bearing on the requirements for Second Class, such as "Find the North," "Quicksight" or "Spot the Rabbit."
2. Review first aid work taken up at last meeting.
3. Practise semaphore (or Morse) signalling, and correct inaccuracies.
4. Play "Kim's Game." (See p. 527.)
5. Have boys describe individually how they would carry out requirements, (e), (f) and (g), of Second Class test.
6. Test boys' knowledge of compass points.
7. Announce hike for all boys on following Saturday, and make group responsible for notifying all boys on roll.
8. Warn boys that Saturday hike means a test for them in Tenderfoot and Second Class work. For the latter it will be necessary that each member of the nucleus group shall provide himself with a Scout billy and with a quarter of a pound of meat and two potatoes each for cooking in the open on a camp fire.
9. Close by a recitation of Scout Law.

#### PROGRAMME VIII

##### Second Hike

Before starting, be assured that all boys have their lunches with them.

Make start for hike objective promptly on appointed time.

1. Impress on boys the importance of close observation and explain that the game of "Fugitives" or "Hare and Hound" will be played en route (see pp. 543, 549).
2. Having reached open country, play tracking game, in which the signs are brought into play. (See p. 544.) Do this for about a mile. The boys will be found to be keen for the foregoing practice, so get them at it as soon as possible.
3. Practise Scout's pace for a mile.

4. Having arrived at destination, make a small camp fire and at the same time draw the boys' attention to forest fire preventive methods.

5. Give each boy something definite to do in connection with the fire lighting and cooking, pairing off members of the nucleus group with other prospective Scouts. Practise fire lighting, cooking, etc., for the Second Class test, keeping the members of the nucleus group under special observation. The Scoutmaster should take down the names of these who are proficient enough in these lines to satisfy the Second Class badge requirements, these to be considered as having passed for the Second Class badge.

6. After lunch, tell a story or read a short yarn taken from a Scout paper. This is a good time to impress upon the boys the daily "Good Turn."

7. Announce result of the Scouting game of "Fugitives" or "Hare and Hound," played en route.

8. Clean up camp and demonstrate safe method of extinguishing camp fire.

9. Start for home, with a Scout yell, followed by the game "Follow the Leader" or, if in winter "Siberian Man Hunt," or some other appropriate game.

10. On arrival home, set time, place and programme for next meeting.

### PROGRAMME IX

#### Sixth Meeting

This meeting should be attended by the entire troop. It should be quite formal as it will mark the completion of the group training and the ceremonial investiture of the nucleus group as Tenderfoot Scouts.

1. Have the group of trained boys fall in and other boys pay attention.

2. Select provisionally the boys to act as Patrol Leaders and Seconds. (See p. 600.) The troop should participate in the election, under the Scoutmaster's guidance.

3. Complete personnel of various patrols (see p. 590).

4. Select patrol names.

5. Form up patrols in troop formation (in line) and explain the Scout Oath and Law.



6. Form up in horseshoe fashion for investiture of Tenderfoot Scouts. Invest group of boys who have passed the Tenderfoot tests. (See p. 45.)

7. Announce names of boys who have also passed Second Class tests.

8. Register all Scouts and give Patrol Leaders roll books.

9. Line up for dismissal, all repeating Scout Law.

10. Play a game.

11. Scout yell.

12. Dismissal.

### PROGRAMME X

#### Seventh Meeting

1. This meeting should mark the beginning of the training of the remaining members of the troop in the requirements for the Tenderfoot badge. The Scoutmaster will find the services of these who have already qualified as Tenderfoot and Second Class Scouts of distinct value in the instruction of the other fellows. The responsibility for this instruction work should, therefore, be impressed on the Patrol Leaders from the very outset and the troop meeting should break up early in the evening into patrols, for training purposes.

The Scoutmaster and Assistant Scoutmaster should visit one after another of the patrols throughout the evening, assisting the Patrol Leaders and Seconds in their work as circumstances may require.

2. The instruction by patrols should be followed by a recitation of the Promise and Scout Law by the whole troop together.

Games should be played for about twenty minutes to one-half an hour either at the beginning of the meeting or just before dismissal.

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The Jungle Book .....	Rudyard Kipling, Macmillan	2.50
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*Note.*—The prices appended to the books in this Bibliography are not guaranteed, and it is suggested that inquiries be made from the local bookseller concerning books it is desired to order.

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5. Homer's Iliad and Odyssey. 2 vols. translated into English prose by ..... Lang and Mayers, *Macmillan.*
6. Goethe's Faust. Translated .... Bayard Taylor, *Houghton* .. 3.00
7. Adam Smith's Wealth of Nations. Everyman's Library, *Dent.*  
 Cloth, 2 vols., each .... .60
8. Palgrave's Golden Treasury. New Edition or Part II. .... *Doran* ..... 2.00
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 Homer's Odyssey, Translated into English prose by ..... Butcher and Lang, *Macmillan* ..... .80

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The Book of Woodcraft .....	Seton, <i>Briggs</i> .....	
Woodcraft .....	O. Jones and M. Woodward, <i>Donohue</i> .....	

*Humour*

Story of a Bad Boy .....	T. B. Aldrich, <i>Houghton</i> ..	1.00
Don Quixote .....	Cervantes, <i>Burt</i> .....	1.25
Huckleberry Finn .....	Mark Twain, <i>Harper</i> .....	1.75

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Innocents Abroad .....	Mark Twain, <i>Harper</i> .....	\$1.75
Prince and Pauper .....	Mark Twain, <i>Harper</i> .....	1.75
Tom Sawyer .....	Mark Twain, <i>Harper</i> .....	1.75
Pickwick Papers .....	Chas. Dickens, <i>Dutton</i> .....	.70
Nights With Uncle Remus .....	J. C. Harris, <i>Houghton</i> .....	1.50
Uncle Remus and His Friends .....	J. C. Harris, <i>Houghton</i> .....	1.50
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The Rose and the Ring .....	W. M. Thackeray, <i>Heath</i> ..	.32

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Country Pastimes for Boys .....	P. A. Graham, <i>Longmans</i> ..	1.50
Boys' Own Guide to Fishing Tackle Making and Fish Breeding .....	J. H. Kerne, <i>Lothrop</i> .....	1.50
Pitching in a Pinch .....	Christy Mathewson, <i>Grosset</i> ..	.60
Textbook on Sprinting .....	P. E. Walker, <i>Grosset</i> .....	.60
(Olympic English and South African Sprint Champion).		
Running and Cross-country Running .....	A. Shrubbs .....	
(Former World's Champion Long Distance Runner).		
Association Football and How to Play It .....	J. Cameron .....	
The Modern Rugby Game and How to Play It .....	E. G. Nicholls .....	
Outdoor Sports and Games .....	C. Miller. (Work and Play Series). <i>Gundy</i> .....	1.00
Games for Playground and Gym- nasium .....	J. Bancroft, <i>Macmillan</i> ....	1.50

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For a list of books relating to various phases of nature see p. 629 under heading Naturalist.

## Books on Proficiency Badge Subjects

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First Aid to the Injured .....	Cantlie, <i>St. John Ambulance Association</i> .....	\$0.50
Aids to Memory for "First Aid" Students .....	L. M. Frank Christian, <i>St. John Ambulance Association</i> .....	.35
Handbook of Instruction .....	<i>Royal Life Saving Society</i> .....	.35
Problems in First Aid—For Competition Study .....		.35
Restore Apparently Drowned .....	Foster .....	.10
First Aid Companion .....		.50

*Airman*

Curtiss' Aviation Book .....	G. H. Curtiss .....	1.35
Mastery of the Air .....	W. J. Claxton, <i>Blackie</i> .....	.90
Aircraft .....	Cobin, <i>Pearson</i> .....	.50
Boys' Book of Airships .....	H. Delscombe .....	1.75
Aeroplane Designing for Amateurs .....	V Loughedd .....	1.00
Aircraft for Boys .....	A. H. Verrill, <i>Harper</i> .....	1.00

*Artist**(a) Drawing and Painting.*

Text-books of Art Education .....	Prang, 7 vols.	
	Books 1, 2 and 3, each ..	.40
	Books 4, 5 and 6, each ..	.50
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Ontario Art Manual .....		.40
Design in Theory and Practice .....	Batchelder, <i>Macmillan</i> .....	1.75
Theory of Pure Design .....	Rose, <i>Houghton</i> ..	2.50
Books of Alphabets .....	Thaylo, <i>Ginn</i> .....	.12
Writing and Illuminating and Lettering .....	Johnston, <i>Macmillan</i> .....	3.00
How to Study Pictures .....	Coffin, <i>McClelland</i> .....	2.50
Apollo: An Illustrated Manual of the History of Art Throughout the Ages .....	S. Reinach, <i>McClelland</i> ....	1.75
Lives of the Most Eminent Painters, Sculptors and Architects .....	Vasari, <i>Bell</i> .....	1.25
Appreciation of Pictures .....	Sturgis, <i>Baker</i> .....	1.50
The Meaning of Pictures .....	Emery, <i>Hendry</i> .....	1.50
Great Masters in Painting and Sculpture .....	Bell .....	1.25

*(b) Architecture.*

Essentials of Perspective .....	Miller, <i>Scribner</i> .....	1.50
How to Judge Architecture .....	Sturgis, <i>Baker</i> .....	1.50
A History of Architecture .....	Sturgis and Frothingham, <i>Doubleday</i> , 4 vols., each ..	5.00

*(c) Sculpture.*

Appreciation of Sculpture .....	Flaxman, <i>Bell</i> .....	2.00
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*Basket Worker*

Basket Work .....	P. M. Hasluck, <i>MacKay</i> .....	\$0.50
Indian Basketry and How to Make Baskets .....	G. W. James, <i>Flanagan</i> .....	2.50
How to Make Baskets .....	Mary White, <i>Doubleday</i> .....	1.10
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Basket Making at Home .....	Mary White, <i>Pearson</i> .....	.90
Raffia Work .....	M. Swannell, <i>Phillip</i> .....	.70

*Bee-keeping*

The A, B, C and the X, Y, Z of Bee Culture .....	A. I. and E. R. Root, <i>Mc- Clelland</i> .....	2.50
Bee Keeping .....	Dr. E. F. Phillips, <i>Macmillan</i> .....	2.00
Bees and How to Keep Them .....	Bulletin 26 .....	Free
Free on application to Publications Branch, Department of Agriculture, Ottawa, Ont.		

*Blacksmithing*

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Collection of Various Marches for Bugles .....	Nehr and Tollet, <i>Laflaur &amp; Sons</i> .....	.40
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The Canoe .....	R. E. Pinkerton, <i>Outing</i> ..	1.00
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*Camper*

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Camping and Woodcraft .....	Kephart, <i>Outing</i> , 2 vols., each	1.50
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The Boys' Camp Book .....	Cave, Doubleday.	
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Winter Camping .....	Carpenter, Outing .....	.80
Camp Sanitation .....	St. John Ambulance Assn. Press .....	.20
Outdoor Sports and Games .....	Miller, Doubleday .....	1.00
Camp and Outing Activities .....	Chesley, Baker .....	1.50

*Carpenter*

Design and Construction in Wood ..	Noyes, Manual Arts Press..	1.50
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The Manual Arts .....	Bennett, Manual Arts Press	1.00
Handcraft in Wood and Metal ....	J. Hooper and A. Shirley Manual Arts Press ....	3.00
Correlated Courses in Woodwork and Mechanical Drawing .....	Griffith, Manual Arts Press.	3.00
Manual Instruction .....	Barter, Whittaker.	
First Lessons in Woodwork .....	Compton, Iverson.	
Wood Carving .....	Lelland, Whittaker.	
Carpentry for Boys .....	J. S. Zerbe, New York Book	1.00
Carpentry and Woodwork .....	Foster, Doubleday .....	1.00

*Clerking**Shorthand.*

Shorthand Manual .....	Gregg, Gregg .....	1.50
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Electricity .....	Corbin, <i>Pearson</i> .....	.50
What Every Boy Should Know About Electricity .....	St. John, <i>St. John</i> .....	1.00
Harper's Electricity for Boys .....	Adams, <i>Harper</i> .....	1.50
Electricity and Its Uses .....	J. F. Woodhull, <i>Doubleday</i> ..	1.00

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Dykes' Automobile and Gasoline En- cyclopedia .....	<i>McClelland</i> .....	4.50
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The Automobile, How It Works ....	A. Williams, <i>Nelson</i> .....	1.25
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Sheep Farming in America .....	Waring, <i>Breeders Gazette</i> .	
Farm Machinery and Farm Motors.	Davidson and Chase, Orange Judd Co.....	2.00
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*Forestry*

Native Trees of Canada. Bulletin No. 61.	<i>Forestry Branch,</i> <i>Department of Interior, Ottawa.</i>	
Training of a Forester .....	Gifford Pinchot, <i>Lippincott</i> .	1.25
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Manual for Northern Woodsmen ..	Austin Cary, <i>Cambridge</i> ..	2.00
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Handbook of Trees of the Northern States and Canada .....	Romeyn B. Hough, <i>Publish-</i> <i>ed by the Author</i> .....	6.00
Manual of the Trees of North Amer- ica .....	Chas. S. Sargent, <i>Houghton</i>	6.00
Timber .....	J. R. Baterden, <i>VanNostrand</i>	2.00
Handbook of Logging .....	R. C. Bryant, <i>John Wiley &amp;</i> <i>Sons</i> .....	3.50
Forest Trees of the Pacific Slope ..	Geo. B. Sudworth.	
Bulletin of the U. S. Forest Service.	<i>Government Printing Office,</i> <i>Washington, D.C., U.S.A.</i>	.60

There are several popular manuals of eastern trees, of which the following may be mentioned:

- The Trees and the Shrubs of North-eastern America ..... C. S. Newhall, Putnams ..... \$2.50  
 Our Native Trees ..... Harriet B. Keeler, Scribner. 2.00

*Friend to Animals*

- Horses and Practical Horse Keeping. F. T. Barton, Bell & Cockburn ..... 1.25  
 Courtenay's Veterinary Medicine .. Ingram & Bell ..... 1.50  
 Diseases of Horse ..... Bureau of Animal Industry, Washington, D. C.  
 Diseases of Cow ..... Bureau of Animal Industry, Washington, D. C.

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 The Backyard Garden ..... E. J. Farrington, Laird & Lee ..... 1.00  
 Home Floriculture ..... Eben Rexford, Orange Judd 1.00  
 Garden Pamphlets, Published by the Department of Agriculture, Ottawa ..... Free  
 A Manual of Gardening ..... Bailey, Macmillan ..... 2.00

*Handyman*

- Harper's Outdoor Book for Boys ... Harper ..... 1.50  
 Harper's Indoor Book for Boys ... Harper ..... 1.50  
 Practical Mechanics for Boys ..... Zerbe, N. Y. Book ..... 1.00  
 Home Decoration ..... C. F. Warner, Doubleday.. 1.00

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 Making Life Worth While ..... Fisher, Doubleday ..... 1.20  
 Life's Beginnings. Boys 12 to 13 .. W. S. Hall ..... .25  
 From Youth to Mannooa. Boys 16, 17 and 18 ..... W. S. Ha' Y.M.C.A. .... .50  
 The Efficient Life ..... Luther Gulick, Doubleday .. 1.35

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- The Horse—His Breeding, Care and Use ..... David Buffum, Outing ..... .80  
 Horses and Practical Horse Keeping. F. T. Barton, Bell & Cockburn ..... 1.25

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- A Study of Various Languages.

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- Laundry Manual ..... Balderson & Limerick.  
 Laundry Work for Use in Home and Schools ..... Sheppard, Webb Pub. .... .60

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Artistic Leather Work .....	E. E. Carter, <i>Spon</i> .....	\$1.00
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Rifles and Ammunition .....	H. Ommundsen and E. H. Robinson, <i>Funk &amp; Wagnalls</i> .....	6.00
The Citizen Rifleman .....	E. J. D. Newitt, <i>Newnes</i> .	
Sharpshooting for War and Defence.	W. W. Greener, <i>Simpkin</i> .	
The Book of the Rifle .....	T. F. Gremantle, <i>Longmans</i> .	

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- The Story of Music ..... W. J. Henderson, Longmans. \$1.00  
 Famous Musical Composers ..... N. H. Dale.

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*Rocks and Minerals*—See Prospector.

*Trees*.—See Forestry.

*Flowers*—

- Gray's New Manual of Botany. A Handbook of the Flowering Plants and Ferns of the Central and Eastern United States and Adjacent Canada 1,036 illustrations ..... B. D. Robinson and M. L. Ferland, American Book Co., New York, 1908.... 2.50

- Elementary Flora of the Northwest. No illustrations ..... T. C. Frye and G. B. Rigg, American Book Co., New York, 1915 ..... .72

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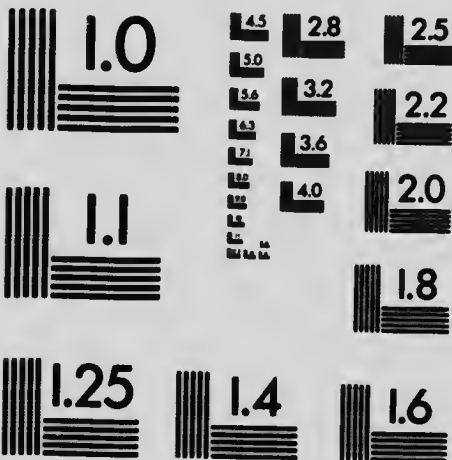
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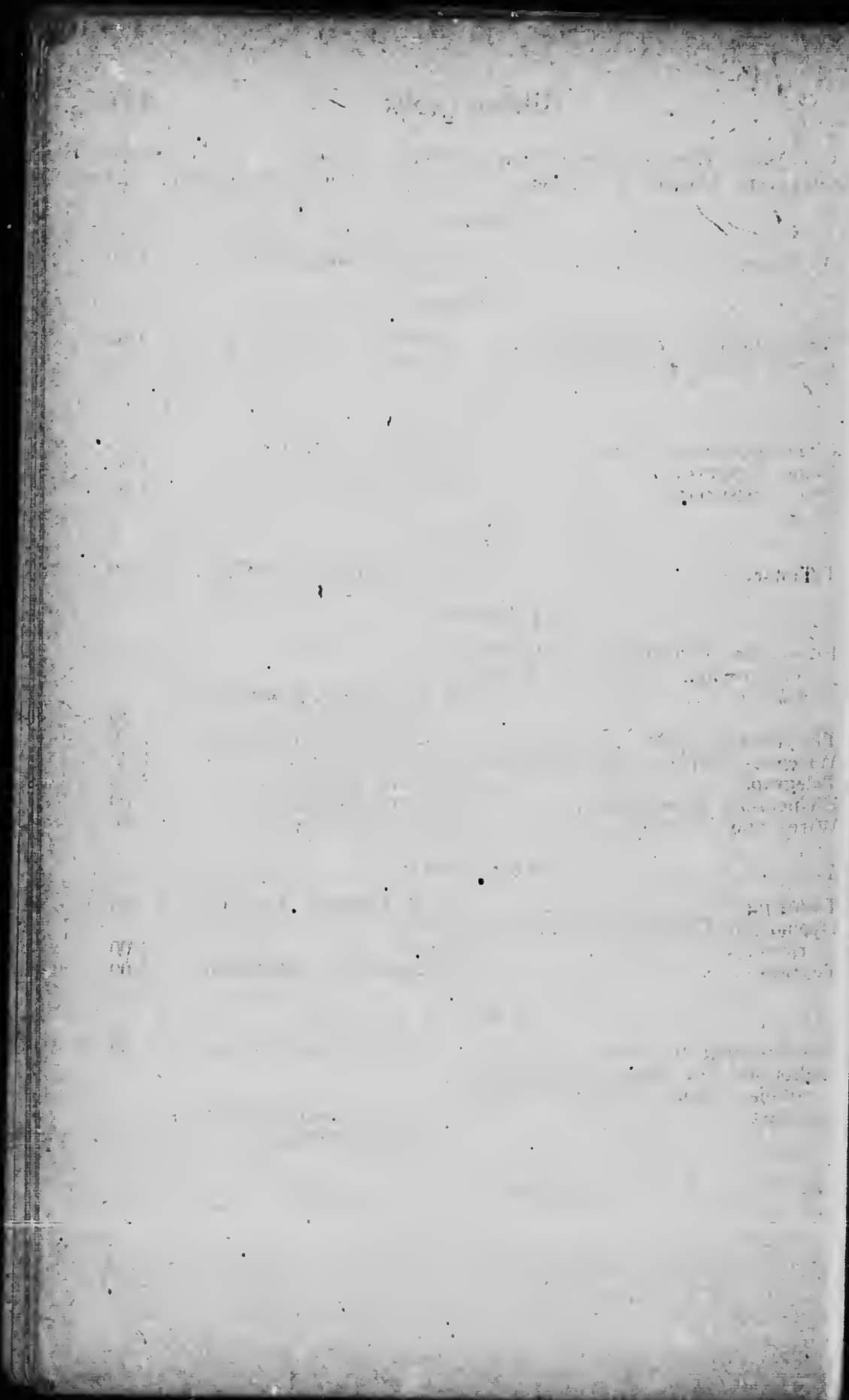
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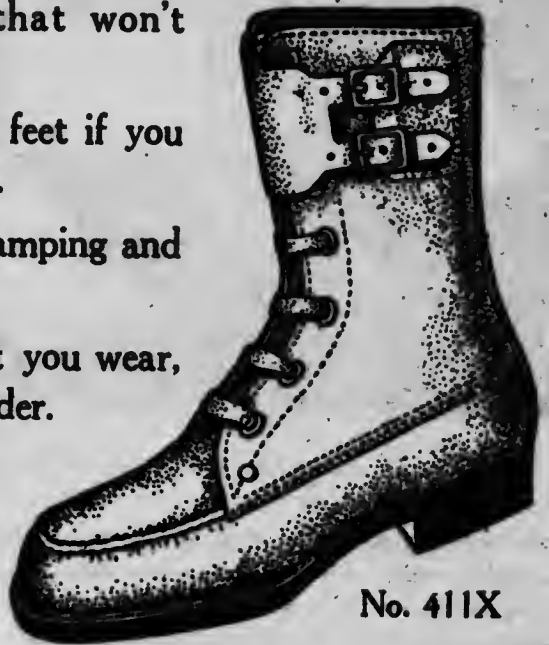
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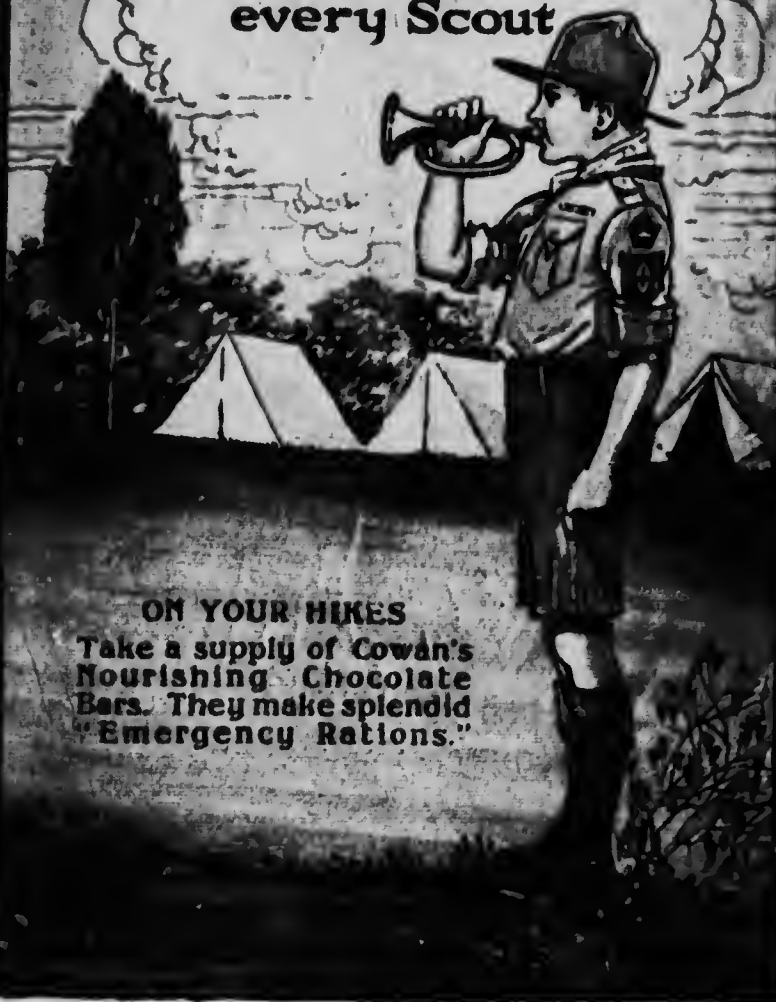
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