

AIDS
TO
RATIONAL THERAPEUTICS



R. W. LEFTWICH

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RATIONAL THERAPEUTICS

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BY THE SAME AUTHOR

AN INDEX OF SYMPTOMS

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AIDS TO RATIONAL THERAPEUTICS

WITH U.S.A. PHARMACOPŒIA EQUIVALENTS

BY

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"A POCKET-BOOK OF TREATMENT," ETC.

"By medicine, life may be prolonged."
CYMBELINE.

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1918

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PREFACE

IN every Textbook of Medicine, no matter in what language it is written, diseases are grouped according to the organ affected; the description of the symptoms of each disease being followed by the treatment appropriate to it.

It is no doubt highly presumptuous of me to question the wisdom of a practice which has prevailed from time immemorial; but I venture to say that, while such an arrangement is admirably adapted for teaching diagnosis, it is wasteful and unscientific for teaching therapeutics. Wasteful, because it involves an enormous amount of repetition; and unscientific, because many of the diseases of a given organ are pathologically unrelated. For instance, under the existing system, the group, Diseases of the Lungs, includes bronchitis, pleurisy with effusion, and gumma of the lung; but it must be admitted that pathologically and therapeutically these have nothing in common.

The shortest practical way of teaching therapeutics is to place in the same group diseases which require the same treatment; and the only scientific way of teaching it is to place in the same group diseases which are of allied pathology. As might be expected, these groups more or less coincide. I have,

therefore, divided diseases into forty groups upon this double basis, and added separately those which could not be so classified. The treatment common to the whole group is supplemented by that which is special to each member of the group where modification is required. Overlapping is got over by cross references. In some instances the pathological link is slight, and this is the case in the Infective Fever Group; but it is this very group which furnishes the most outstanding instance of the great value of the method. There are about twenty-four infective fevers, and it is well known that the main features of the treatment are the same in all. Under the existing system, the student learns the treatment of each disease separately; while under the group system, he learns the whole lot at once. Allowing for the time spent in mastering the modifications of treatment special to each, it is fair to say that the system in this instance enables the student to acquire the same knowledge in one-twentieth of the time. It is unquestionably a "Students' Aid," therefore, and it was for this reason that I complied with the publishers' request to contribute a volume to the series. But it is also of value to the practitioner, for it gives him a broader outlook and enables him to see things from a fresh point of view. I have a great belief in grouping as a means of saving labour. I have grouped symptoms, I have grouped methods of treatment, and I have grouped doses, and I believe that subjects beyond my ken are also susceptible of being grouped.

I have also endeavoured in this work to help the

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student in another way. It is well known that the newly qualified man is of very little use as an assistant until he has been broken in to the work. The student leaving his hospital has had the separate teaching of surgeon, physician, and specialist, each one overestimating the value of his particular line of practice; but nothing is done to give him an idea of the relative value of each. What is wanted is a Chair of Co-ordinated Medicine, for which no one with less than ten years' general practice should be eligible. For it is in the general practitioner that broad views are to be found. When he wants depth, he can get it by calling in the help of a specialist; but when the specialist wants breadth he finds in it an elusive something that cannot be communicated. It will be a bad day for Medicine when, as appears likely, everyone is a specialist. This recognition of the general practitioner would also raise the average of efficiency. At present he is hardly taken seriously even when he has something of great importance to communicate. This was the case with me during the time when I was in general practice. Twenty years ago, when opposition to vaccination was at its height, I pointed out for the first time that the scarifications should be treated precisely as any other operation, by strict asepsis. The method has become universal since; and it is of importance, not only medically, but politically. But the only result was that "conscientious objectors" brought their children to me to be vaccinated; while, as for anything like a recognition of the value of this service, there has not been the smallest.

Pending the advent on the staff of each hospital of a teacher who knows something about the conditions of that form of practice to which 95 per cent. of the students are destined, something may be done by book-teaching. I have therefore inserted an appendix which deals with this part of a student's education. In addition to this, there will be found, scattered through the work, a large number of useful hints and suggestions.

For the benefit of American readers, a table giving Pharmacopœial equivalents has been added.

As regards Therapeutics in general, the sections upon the Automatic Habit, the Hyperæmic Group, and Insanity, should repay perusal.

R. W. L.

36, EBURY STREET,
EATON SQUARE,
LONDON,
February, 1918.

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AIDS TO RATIONAL THERAPEUTICS

INTRODUCTION

THERAPEUTICS is the art of healing or ministering to the sick (*θεραπεύω*, "I tend or minister to") and includes every method by which the patient may be restored to health. The list is long and includes drugs, diet, baths, climate, massage, electricity, exercises, vibration, radium, X rays, vaccines, operations, etc.

These measures are directed against disease. The word "disease," however, considered as the equivalent of the French *malaise*, has an air of futility; for the physician is expected to do a good deal more than provide ease for the uneasy. On the other hand, *morbus* goes to the other extreme, for, according to Skeat, it is allied to *mori*, "to die," and diseases are far from being necessarily fatal.

Anatomically, a disease may be defined as an abnormal change in the position, the relations, the size, or the structure, of an organ or of its parts. Physiologically, as a reduction, an excess, or a perversion, of its function. Few things are more difficult than a satisfactory definition, and no doubt holes can be picked in this. The word "organ" must be taken in a large sense, for it includes, not only the nerves and the bloodvessels, but the blood itself, which, apart from its oxygen-carrying property,

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is just as much an organ as is the liver; and the fact that its stroma during life is fluid does not make it less so. The point is worth remembering, for since the recognition of the influence of toxins and endocrinal secretions it has become of great importance.

The student is apt to think of disease as a perfectly clear and well-marked entity; but this is far from being always the case, as may witness pleuropneumonia. But nothing has upset our notions of disease so much as bacteriology. It is difficult to picture a medical terminology from which the ending "itis" is absent; but the time may come when the causal organism will give its name to the disease, and when, instead of pericarditis, we shall write "Streptococcosis pericardii." But even this may be limited to its little hour, for the problem of mixed infection must be considered. To an outsider, however, it would seem that in every case there is originally only one causal organism, and that others come in later, like Blücher at Waterloo, to reinforce the first.

Therapeutics may be considered under three heads: Causal, Symptomatic, and Opportunist. Etiology is still the Cinderella of medical science, though not improbably with a destiny as brilliant as hers. The reason for this backwardness is evident, since it is only in the first stage of a disease that the cause is likely to be discoverable, and, a fatal result being very rare so early, there is no opportunity for post-mortem investigation. Here the writer would put in a special plea to registrars to watch the onset of an intercurrent disease in cases likely to terminate fatally from other causes, and to notify its presence to the pathologist. Most cases are seen too late to make it possible to remove the cause; but even when it is removed, it does not follow that the effect will cease. To cut off alcohol, for instance, does not

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cure cirrhosis of the liver. Again, an effect may in its turn become a cause. For the original cause often becomes more and more remote as the case advances. To use a trite simile, it is like "the house that Jack built." Thus a bacterium produces a left-sided pleurisy; this leads to effusion, the effusion to displacement of the heart, the displacement of the heart to hepatic congestion, and hepatic congestion to ascites. Each of these conditions becomes a cause in itself, and each "cause" can be adequately treated. In this extended sense, therefore, causal treatment is much more generally applied than appeared to be the case at first.

The expression "Symptomatic Treatment," if we deduct from it what is later described as opportunist treatment, is of limited scope. It is at best a necessary evil; and only applicable when nothing else can be done. And it has its dangers. The suppression of a symptom may invalidate a diagnosis, it may remove the incentive to persevere with the treatment, or it may turn out that the symptom was really beneficial, as is often the case in hæmorrhage from a hyperæmic organ. The expression "Symptomatic," when applied to the removal of a symptom which is having a disastrous effect upon the course of a dangerous disease, is unworthy and inadequate. An instance may be found in the incessant and exhausting cough which sometimes accompanies acute pleurisy. It is of no possible use, for there are no sputa to be brought up, and, by depriving the patient of rest, it increases the risk of a fatal termination. For such treatment as this, which includes the piloting of the patient through manifold dangers in the shape of complications, the writer proposes the term *Opportunist*. The word has been somewhat debased by politicians, but no other expresses so well the art of dealing promptly with difficulties and

dangers as they arise. In other words, it is the treatment of complications; and it is in dealing with these that the highest powers of the physician or surgeon are demanded and displayed; whereas for purely symptomatic treatment an automatic machine would answer nearly as well as a doctor.

The progress of Therapeutics in the past has been much retarded by merciless scrapping of old methods of treatment. No doubt they were overrated, and some reduction of their pretensions is only right; but to abandon entirely a remedy which retained the confidence of the profession for perhaps hundreds of years shows a want of sense. It is inevitable that some germ of truth must have underlain the belief in it. Sooner or later, it comes into vogue again and stultifies those who decried it. Blood-letting no doubt used to be carried to the extreme, but the reaction against it had the same fault. Now we begin to see that it is at least of value when the right ventricle is overloaded, and it is safe to predict that its uses in other directions will be recognised some day. Sir James Paget, in lecturing upon his own illness, pneumonia, said that he had had five attacks, but that nothing gave him such a sense of relief and well-being as the venesection which he underwent in his first attack. After all, it is not an unreasonable treatment in this and other bacterial diseases, where the blood is charged with organisms and toxins, to replace some of the blood by saline solution. In the light of the proved power of resistance to starvation, as shown in the new treatment of diabetes, it is possible, too, that it may be better for the reputation of Graves if his epitaph, "He fed fevers," were erased. Heart failure arises more from toxæmia than from malnutrition. Dr. John Hall, Shakespeare's son-in-law, describes some remarkable cures in his case-book by heroic purging and vomiting.

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Michael Drayton, for instance, was cured thus in a few days of ague, cinchona not having been introduced. He also received syrup of violets; but that could hardly have had much effect. There, again, was a method of starving the disease concurrently with starving the patient, and we may yet return to something like it. It is rather amusing, too, to read the recent advocacy of red blinds and hangings for smallpox to those who know that the plan was adopted by John of Gaddesdon when treating the son of Edward II. for this disease. This to-and-fro swing of the pendulum in therapeutics is very humiliating; let us be content to introduce new remedies without necessarily entirely scrapping the old ones.

The Automatic Habit in Therapeutics.

Physiologists tell us that an act, originally volitional, becomes, by frequent repetition, automatic. The pianist, for instance, has to exercise his intelligence when learning a new piece of music; but, once learnt, he not only plays it without thinking, but may be able to converse on a totally different subject while playing. This automatic working is lost in certain diseases, and notably in locomotor ataxy, where part of the treatment consists in re-educating the patient. The automatic habit now under consideration is not quite on all fours with this, since it does not begin as a volitional act; but it does not very much matter whether the first action was volitional or reflex. The force of habit and the necessity for breaking it is recognised more or less vaguely in certain tics such as stammering; but the writer wishes to urge that the principle may be pushed still further, and that it is largely force of habit that turns an acute and curable disease into a chronic and possibly incurable one. As a matter

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of fact, we do in some cases act as if this principle were impelling us, though in ignorance of the reason for our action. Thus, at the end of an acute illness, we order change of air and the patient benefits. But is it the air that does the good? Evidently not altogether; for a patient who lives in the best air conceivable also derives benefit from a change. But a change of air involves a change of scene and surroundings, and, to use a colloquial expression, takes the patient "out of himself." Now this taking him "out of himself" is purely a psychological agency. The writer suggests that a change of air, therefore, owes its beneficial influence very largely to the breaking of a habit. But there are other ways of effecting this break, such as suggestion, whether deliberate, as is done by those who make a speciality of this method of treatment, or implied suggestion, such as a threat of surgical operation. So far as neuroses go, no one will have any difficulty in admitting that to break a habit is an important part of the treatment; but change of air benefits all cases whether neurotic or not. A child with whooping-cough will go on whooping almost indefinitely; but send him to the seaside, where he leads a totally different and a pleasanter life, and he will soon throw off the habit. The same thing happens with a cough that persists for long after the condition which produced it has passed off. The public has an inkling of this truth. They tell a friend who neglects an ailment that, if he is not more careful, it will "get chronic." Now the writer contends that this tendency to prolong a disorder by automatic repetition has a very extended application. For instance, catarrh of any part begins as a reflex increase and outpouring of a normal secretion, and after this has remained unrelieved for a long time it will go on indefinitely by automatism or habit; and if this is true of catarrh, why should it

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not be true of pus formation, as in empyema, or, on the other hand, of inhibited secretions such as achylia gastrica or dysidrosis? The contention, therefore, is that as a rule, when suggestion treatment is successful, the disease has really been cured for a long time, and that all that suggestion does is to break the habit. The same applies to amulets and to so-called Christian Science. The writer knows of a case of chronic eczema which resisted all the orthodox measures, but was cured by Christian Science! It is difficult to explain this and similar instances that can be inferred from the votive offerings in pagan temples in any other way than by assuming that it is the habit that is broken, not the disease that is cured.

It may be said that, after all, this is a point of academic interest only; but this is not so. The moral to be drawn from the teaching is this: When you have to deal with an acute disease, be sure that you have made a complete cure of it, so that no symptom is allowed to linger on. The second moral applies to the case that shows signs of passing from the acute stage into a chronic and much more obstinate form. Break the habit! If the patient is bedridden, put him in another room with a different aspect; get another nurse, or if his wife or daughter is nursing him, insist upon the necessity for her to take a holiday and let someone else do the work; encourage the visits of cheerful friends! Lastly, if he is at all fit for it, let the patient have carriage exercise, even if he has to be lifted in. The fact that the whoop ceases when a child contracts measles points to another way of breaking the automatic habit. It is not suggested that the subject of a chronic disease be exposed to infection; but possibly sufficient vaccine treatment to produce some pyrexia for two or three days might be of service, and the

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inoculation would also be a form of suggestion. A somewhat similar principle is adopted when we convert an indolent ulcer into an inflamed one. These lingering cases reflect no credit upon Medicine, and it is time for them to be more vigorously dealt with.

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THE HYPERÆMIC GROUP

HYPERÆMIA is the initial stage of inflammation, and where it comes under direct observation, as in the skin and certain mucous membranes, it is associated with dryness; the most familiar instance being the first stage of a cold in the head; but it can be recognised, too, in laryngitis, bronchitis, and measles. Even in cases where the membrane has a special secretion in addition to mucus, the first effect is the inhibition of that secretion and consequent dryness.

Our knowledge of the first stage of disease is necessarily limited (see p. 2); but, reasoning from analogy, the writer suggests that a good *primâ-facie* case can be made out for the existence of an initial dry stage in inflammation of the serous and synovial membranes. The friction sound in acute pleurisy and pericarditis is audible too early to be due to effused lymph, and is much more likely to arise from dryness; and the same may be true, not only of synovitis, but even of acute pneumonia; for if the early crepitation is due to sticky lymph, how comes it to be so well imitated by rubbing between finger and thumb a wisp of *dry* hair?

The suggestion is well worth considering, for it is of great importance. If it be true (and it is true) that coryza can be cut short in the dry stage, the same treatment may abort more formidable diseases. Consulting physicians do not see these cases sufficiently early, and the point is recommended to the attention of the general practitioner.

The group, therefore, may be said to comprise Coryza, Acute Bronchitis and Laryngitis, and, provisionally, Acute Pleurisy, Acute Pneumonia, Acute Pericarditis, Simple Acute Peritonitis, Acute Synovitis, Acute Bursitis, and Acute Hydrocele. Conjunctivitis is an exception on account of the tear gland.

The treatment is as follows: The patient has a very hot bath and then gets into bed between warm blankets, with a hot-water bottle to his feet. When in bed, he is given 15 grains of acid. acetosal, and 10 grains of pulv. ipecac. co., and told to drink large quantities of barley-water. He should not go out before noon the next day. In the case of serous or synovial inflammation, a quick-acting blister should accompany this treatment. *Catarrhe sec*, the rather absurd, because self-contradicting term, given by Laennec to what is usually a gouty condition, does not come within this group. It is best treated by bromides.

When secretion comes on freely, the treatment as regards inflamed mucous membrane will be that of the Catarrhal Group. The second stage of serous inflammation falls under the Effusion Groups.

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THE CATARRHAL GROUP

THE group includes Catarrh of the Air Passages—coryza, laryngitis, tracheitis, and bronchitis; Catarrh of Ducts—hepatic, pancreatic, etc.; Catarrh of the Alimentary Canal—stomach, duodenum, small intestine and large intestine; and Catarrh of the Bladder. The increased secretion of mucus which constitutes catarrh may be due to irritation, but, in general, it arises from bacterial infection. Mucus is an excellent culture medium, and in this way a vicious circle is created so that the attacking organism, like a good commander, draws the supplies from the enemy. The object of treatment, therefore, must be the removal of the mucus, and with it of the organism that evoked its production. In the case of the air passages, Nature does this by a reflex sneeze or cough; while in the alimentary canal the aid of vomiting or diarrhœa is called in. In therapeutics there are three ways of assisting its removal: first, by liquefying or thinning it; secondly, by assisting in its expulsion; and thirdly, by destroying the organism that keeps up the trouble. Mucus can be thinned by alkalies or iodide of potassium, internally; or loosened by paraffin, by steam inhalations, or by oily sprays; expulsion can be assisted by aperients, expectorants and emetics; and the organisms can be destroyed by vaccines, serums, drugs and sprays, the last at the same time reinforcing the expectorants.

The group treatment consists in giving alkalies or

iodide of potassium internally, an expulsive treatment which differs according to the seat of the catarrh, vaccines or serums where available, and antiseptics locally.

The diseases of the group are, strictly speaking, catarrhs; but they have the termination "itis," as if they were examples of inflammation, which is rather an exaggeration.

Acute Laryngitis.

A mustard leaf should be placed over the pomum Adami, compound tincture of benzoin (1 drachm to a pint of boiling water) inhaled every two hours, for ten minutes at a time, and the following mixture given:

R	<i>Spir. Æth. Nit.</i>	..	..	..	℥iv.
	<i>Syr. Scillæ</i>	..	..	..	℥vi.
	<i>Tr. Camph. Co.</i>	..	..	..	℥iii.
	<i>Liq. Ammon. Acet.</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥vi.

M.

One tablespoonful every four hours.

The patient must be in bed in a warm, but well ventilated, room, and should be continually sipping barley water, in which some black-currant jelly has been melted. He must on no account speak above a whisper. When the acute symptoms have passed off, 10-grain doses of ferri et ammon. cit. should replace the sp. æth. nit. in the above prescription; while the following spray should be substituted for the benzoin inhalation:

R	<i>Ol. Pini</i>	..	..	..	℥xx.
	<i>Ol. Eucalypt.</i>	..	..	..	℥v.
	<i>Parolein.</i>	..	..	..	ad ℥ii.

M.

S. : The Spray. To be used with an atomiser every three hours.

If there is a good deal of tough mucus, an alkaline spray is better:

R	<i>Sodii Bicarb.</i>	..	..	..	ʒi.
	<i>Glycerin. Boracis</i>	..	..	..	ʒii.
	<i>Sodii Chlorid.</i>	..	..	..	gr. xx.
	<i>Aq.</i>	..	..	..	ad ʒii.

M.

S. : *The Spray.*

Chronic Laryngitis.

The treatment of the second stage of the acute form applies also to this condition; the oily spray replacing the alkaline one at the end of a fortnight. The use of a vibrator to the pomum Adami is also advantageous, and a course of treatment at Salsamaggiore or the Mont Dore should be recommended in obstinate cases.

Acute Bronchitis.

The patient must be in bed in a room with a temperature of 62°. The bronchitis kettle should be at hand; but if used continuously, it is too debilitating. It is enough to keep it boiling for twenty minutes every two hours, and the addition of 10 drops of oil of eucalyptus each time is often advantageous. If there is much dyspnœa, poultices will be required; otherwise it is enough to pour, on a hot flannel, turpentine and camphorated oil, 10 minims to the ounce, and keep it applied to the chest. The following medicine should be given:

R	<i>Ammon. Carb.</i>	..	..	..	ʒi.
	<i>Pot. Bicarb.</i>	ʒii.
	<i>Syr. Tolu.</i>	ʒi.
	<i>Aqu. Anisi</i>	ad ʒvi.

M.

One tablespoonful every four hours.

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Liquid diet should be given as long as the temperature is over 101°. When the sputa become loose and abundant, *inf. senegæ* may replace the *aq. anisi* in the last prescription; and when the attack is passing off, the sputa diminishing, and the cough getting worse, the following mixture should replace it altogether:

R	<i>Tr. Ferri Perchlor.</i>	..	..	̄ii.
	<i>Oxymel Scillæ</i>	..	..	̄vi.
	<i>Tr. Camph. Co.</i>	..	..	̄iii.
	<i>Syr. Tolu.</i>	..	..	̄i.
	<i>Aq.</i>	..	..	ad ̄vi.

M.

One tablespoonful every four hours.

It is not quite clear how acetic acid acts; pharmacologists say it has a drying effect upon mucous membranes. That is not quite what is wanted; but being interpreted, it probably means that it lessens secretion, and this, though contra-indicated in the first stage, is now beneficial. Ordinary diet can be gradually resumed, and the kettle is not wanted, though an oily spray as ordered for laryngitis is useful. Should the attack leave a troublesome dry cough, 1 drachm doses of glycerine of acetomorphine (B.P.C.) should be given occasionally.

Chronic Bronchitis.

This is treated like the second stage of the acute form. Persons who get a return every winter should try vaccine treatment, and if this fail, spend the season in a milder climate—the Riviera for choice, or, failing that, Torquay.

Bronchorrhœa.

Bronchitis sometimes goes on to this form, the sputa being enormously increased in quantity owing

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usually to some bronchiectasis. The oily spray may be continued, but expectorants are not required. A better treatment is by the syrup of the hypophosphites, together with guaiacol capsules. The lamp recommended for whooping-cough (p. 77) is desirable if there is much fœtor.

Plastic Bronchitis.

In this form, the sputa, if placed in a glass of water, show tree-like casts. The liquefying effect of iodide of potassium must be taken advantage of, and the drug, combined with a tonic, given in 10-grain doses three times a day. Expectorants are injurious, but a cocain spray is valuable.

R	<i>Cocain.</i>	..	..	..	..	gr. v.
	<i>Menthol.</i>	..	..	..	..	gr. x.
	<i>Parolein.</i>	..	..	..	..	ad ʒi.

M.

S. : *The Spray.*

Acute Bronchitis in Infants.

Children at an early age have not the sense to expectorate, and emetics are required occasionally if the tubes become loaded. At twelve months of age, a drachm of vinum ipecac. should be given in a wineglassful of warm water, and after that more warm water with salt in it, till he vomits. It is not safe to repeat the ipecac. Sometimes it is necessary to follow its action with 10 drops of brandy. Poul-tices are required in most cases; but they must be watched, and if the pulse should weaken, they must be replaced with hot flannels well sprinkled with camphorated oil. The same caution is required in the use of the bronchitis kettle, and for this an inhalation of tr. benzoin. co. (p. 12) must be substituted. Many an infant has died of heart failure from the injudicious

use of these otherwise valuable remedies. The following mixture should be given:

R	Ammon. Carb.	..	..	..	gr. xx.
	Pot. Bicarb.	..	..	..	ʒss.
	Ext. Glycyrrhizæ Liq.	..	..	..	ʒiv.
	Aq. Anis.	..	..	..	ad ʒii.

M.

One teaspoonful every four hours. For a child twelve months old.

The infant should be taken up in the nurse's arms at frequent intervals to prevent hypostatic congestion. Rhythmical pressure made upon the lower ribs at the back is also valuable for this purpose. When the dyspnoea grows less the following mixture should be substituted:

R	Oxymel. Scillæ	..	..	..	ʒiss.
	Vin. Ferr.	..	..	..	ʒiss.
	Syr. Tolu.	..	..	..	ʒss.
	Aq.	..	..	..	ad ʒii.

M.

One teaspoonful three times a day. For a child twelve months old.

Later, cod-liver oil should be given.

Broncho-Pneumonia.

The treatment of bronchitis in infants applies to this, except that the ammonia, being too stimulating an expectorant, should be replaced by syr. scillæ in 15-drop doses. At the end of the acute stage most children require brandy in 10-minim doses every two or three hours, in the milk, and if heart failure seem imminent, strychnine must not be withheld. The dose for an infant a year old is $\frac{1}{4}$ minim of the liquor. The same applies to infantile bronchitis.

Cod-liver oil and Parrish's food are required in

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convalescence, together with the most nourishing food the child can digest. Lastly, as these cases are apt to end in tuberculosis, a change to sea air should be made as soon as it is safe.

Hay Fever.

About six weeks before the expected reappearance of the attack, the patient should start taking 10 grains of lactate of calcium three times a day with meals, and at the same time keep his general health at a high standard. When the attack begins, the nostrils should be douched several times a day with hazeline in salt water, 1 drachm to 2 ounces. Later, a cocain and adrenalin spray should be substituted:

R	<i>Cocain. Hydrochlor.</i>	..	2 per cent.
	<i>Liq. Adrenin. Hydrochlor.</i>		
	(B.P.C.)	.. ..	20 per cent.
	<i>Aq. Chloroform.</i>	.. ..	ad 100.

Dissolve the cocain in the chloroform water and add the adrenin solution. S.: The Spray.

A course of syrup of hypophosphites will help to prevent the case going on to neurasthenia, as very commonly happens. The best place for a person who is subject to hay fever is a quiet road in the heart of a town, or, better still, in a towny seaside place like Brighton. In the writer's experience pollantin is of little use.

Iodism.

Iodine produces catarrhal and bronchial symptoms when taken over a long period in many people; but susceptible persons have been known to get iodism even from 1 or 2 grain doses, and, curiously enough, they sometimes escape when they take 5 or 6 grain doses. The symptoms soon subside under the action of adrenalin provided the drug is withdrawn. Other

persons get catarrhal symptoms from dust and scents, or even from the presence of a cat in the room. For Influenza, see p. 72. Whooping-Cough, p. 77. Measles, p. 73.

Gastric Catarrh.

Alkalies liquefy the mucus, and bismuth not only helps to expel it mechanically, but it has a soothing effect upon the mucous membrane. The treatment should begin with a dose of calomel, followed the next morning by some cascara and this mixture:

℞	<i>Sodii Bicarb.</i>	..	..	..	℥ss.
	<i>Bismuth. Carb.</i>	..	..	..	℥ii.
	<i>Pulv. Trag. Co.</i>	..	..	..	q.s.
	<i>Aq. Ment. Pip.</i>	..	..	..	ad ℥vi.
				M.	

One tablespoonful every four hours.

In severe cases, or in those of long standing, it is better to treat the condition by rest of the stomach. The patient should be kept in bed with a hot-water bottle over the epigastrium, and take nothing but Benger's Food, peptonised milk, Carnrick's peptonoids or panopeptone, and only a little of these at a time. The period necessary is from one to three weeks; but the sacrifice is worth this, if it prevents a lifelong history of discomfort.

To prevent a return, effective mastication is of great importance, and experience shows that this is easier when the meal is eaten dry. The practice of taking the liquids after the meal is not to be recommended; for, since three or four hours will elapse before the stomach is empty, the effect is to dilute the gastric juice. Half a tumbler of liquid, therefore, should be taken half an hour before a meal. Dental defects must be made good and, if possible, the patient should lie down for half an hour after each meal.

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Fatty food rarely agrees with persons of weak digestion, and pork, salmon, mackerel, eels, herrings, and made dishes (which contain much butter), should be avoided, as also must crab, lobster, twice-cooked food, and cured meat. The best drink is weak whisky and water or a white wine like Graves; thin cocoa or ovaltine taking the place of tea.

In general, an aperient is required systematically, and for this purpose cascara is about the best. The liquid preparations are better than tablets. The directions given above are of very general application, but idiosyncrasies are common and must be taken into consideration.

Duodenal Catarrh.

Catarrh of the duodenum is specially important, because the mucus is liable to block up the orifice of the common bile duct and cause, on the one hand, jaundice; and on the other, pancreatic concretions or cysts. Further, there is some connection between it and diabetes. The group treatment holds good; but, as is the case throughout the alimentary canal, the alkaline effect is liable to be neutralised by the acidity of the gastric juice, unless large quantities of soda or potash are given. The indication to expel the mucus is of cardinal importance here, and is best effected by giving 5 grains of calomel four hours after the last meal, and following this with 2 ounces of mist. sennæ co. the next morning. This should be repeated once or twice a week while the condition remains. Concurrently the mixture here prescribed should be given:

R	<i>Bismuth. Carb.</i>	..	..	..	ʒii.
	<i>Sodii Bicarb.</i>	..	..	..	ʒss.
	<i>Tr. Rhei Co.</i>	..	..	..	ʒvi.
	<i>Syr. Zingiber.</i>	..	..	..	ʒi.
	<i>Aq. Ment. Pip.</i>	..	..	..	ad ʒvi.

M.

One tablespoonful every four hours.

Catarrh of the Bile Duct.

This is generally an extension of duodenal catarrh, and is treated in the same way. It is the commonest cause both of a "bilious attack" and of catarrhal jaundice, which is much the same thing in a chronic form. The former is very liable to recur, and to prevent this the patient should take the following pill once a week:

R *Pil. Hydrarg.* gr. iss.
Pil. Colocynth. Co. ad gr. v.
Fl. Pil.

Some patients may find that two pills are required.

Catarrh of Pancreatic Duct.

This, if diagnosed, which is difficult, must have the same treatment.

Catarrhal Jaundice.

The treatment is the same as that for duodenal catarrh, but the mixture requires modification, so as to correct the intestinal decomposition which often accompanies it. Thus:

R *Bismuth. Salicylat.* ℥ii.
Sodii Bicarb. ℥ss.
Ol. Creasoti ℥xx.
Pulv. Trag. Co. q.s.
Aq. Cinnamom. ad ℥vi.
M.

One tablespoonful every four hours.

This will also relieve the flatulence.

The patient should be in bed on a milk diet, but drinking also large quantities of water. If vomiting should set in, the mixture must be replaced temporarily by the following:

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R *Sp. Armoracæ Co.* ℥vi.
Sod. Bicarb. ℥ss.
Aq. ad ℥vi.
M.

R *Pulv. Acid. Cit.* ℥ss.

Div. in pulv. xii.

One tablespoonful of the mixture, with a powder added, should be taken effervescing every three hours till relieved. Alternatively, $\frac{1}{2}$ -grain doses of calomel may be taken every hour, stopping at the sixth.

As long as there is any yellowness about the conjunctivæ, the diet should not be advanced beyond fish and chicken. The following mixture is suitable:

R *Sodii Bicarb.* ℥iii.
Syr. Zingib. ℥ss.
Inf. Gentian. ad ℥vi.
M.

One tablespoonful three times a day.

A person subject to attacks of bile should avoid fatty food and take plenty of exercise.

Catarrh of the Small Intestine (Diarrhœa).

This is generally set up by tainted or undigested food, and the indication is to expel it and thus remove the cause. For this purpose an ounce of castor oil should be given first, and the most palatable way of taking it is sandwiched between hot coffee at the bottom and a teaspoonful of brandy at the top. The coffee is heavier than the oil and the brandy lighter. This alone will often suffice; but should it not, it must be succeeded by chalk mixture or the following:

R *Tr. Catechu* ℥i.
Tr. Chloroformi et Morphicæ ℥ii.
Aq. ad ℥vi.

One tablespoonful after each relaxed motion.

The diet should be of milk and ground-rice pudding or blanc-mange. It is a good plan to flavour the milk with cinnamon.

Lienteric Diarrhœa.

If undigested food is habitually passed, the mixture following upon the oil should be this:

R	<i>Glyc. Pepsin.</i>	..	..	..	̄iss.
	<i>Liq. Bismuth. et Ammon. Cit.</i>	..	..	..	̄i.
	<i>Tr. Card. Co.</i>	..	..	..	̄vi.
	<i>Aq.</i>	..	..	..	ad ̄vi.
	M.				

One tablespoonful at the beginning of each meal.

Rice should take the place of vegetables.

Summer Diarrhœa of Infants.

The treatment begins with castor oil, a dose on the large side being necessary. The following mixture is intended for a child twelve months old:

R	<i>Bismuth. Carb.</i>	..	..	..	̄iss.
	<i>Pulv. Cretæ Aromat.</i>	..	..	..	gr. xx.
	<i>Mucilag.</i>	..	..	..	q.s.
	<i>Glyc.</i>	}	..	..	..
	<i>Aq.</i>				
					āā ̄i.

One teaspoonful every three hours till relieved.

In a bad case, pulv. cretæ aromat. c. opio, in 1-grain doses, may replace the other preparation, nothing but boiled water being given for four or five days, when some glucose may be added to it. Brandy, 10 minims every hour, is generally required, and subcutaneous injections of saline solution are often called for.

Dysenteric Diarrhœa of Infants.

This is a kind of acute mucous colitis. Castor oil is again indicated, and followed in a mild case by

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the castor oil emulsion every four hours. In more severe forms of the affection some opium will be needed, thus:

R	<i>Tr. Opii</i>	..	..	..	..	℥viii.
	<i>Glyc.</i>	}	..	..	..	āā ʒi.
	<i>Mist. Ol. Ricini</i>	}	..	..	..	āā ʒi.
			M.			

One teaspoonful every four hours.

This is intended for a child twelve months old. Should drowsiness supervene, the opium must be omitted. The diet should be of whey and peptonised milk.

Asiatic Cholera.

The old treatment, which was never very successful, is now superseded by that of Sir Leonard Rogers. It consists in giving two kaolin-coated pills (2 gr.) of permanganate of potash every half-hour till the stools become green and less copious; and, finally, eight pills on the second and third morning. For the collapse, a hypodermic injection of liq. strychninæ ℥iii. may suffice; but frequently a rectal injection of hypertonic saline is needed; and if the blood-pressure be below 80, the saline must be given intravenously. The formula is:

R	<i>Calcii Chlorid.</i>	..	..	..	gr. iv.
	<i>Pot. Chlorid.</i>	..	..	..	gr. vi.
	<i>Sodii Chlorid.</i>	..	..	..	ʒii.
	<i>Aq.</i>	..	..	..	ad Oi.
			M.			

To be injected warm.

In strong patients, total abstinence from food for the first thirty-six hours is indicated; in others, whey or peptonised milk and cinnamon powder may be given, together with some old brandy. The

There is a great tendency to depression in this complaint. It is best combated by cheerful society, motor-drives, and a tonic such as this:

R	<i>Tr. Nucis Vom.</i>	..	..	..	ʒii.
	<i>Acid. Nitro Hydrochlor. Dil.</i>	..	..	..	ʒii.
	<i>Syr. Zingiberis</i>	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	ad ʒvi.
	M.				

One tablespoonful three times a day before meals.

But as it is due to toxins, the antiseptic treatment should suffice, and continued depression would raise a suspicion that the one selected was not efficient.

Ulcerative Colitis.

The borax douche is also useful here, but it must, be more copious, 5 pints being slowly gravitated into the bowel with the patient in the knee-elbow position. It requires to be done five times a week. The internal treatment is the same as for mucous colitis. Confinement to bed and open windows are necessary. In obstinate cases, short-circuiting is the remedy.

Proctorrhœa.

This is caused by some irritant, such as a piece of bone, thread-worms, bilharzia, etc., or some condition which would be revealed by the speculum. The cause must be removed, and if the flow persist, an injection of hazeline and water should be ordered.

THE PLASTIC EFFUSION GROUP

THIS group includes Acute Peritonitis, Acute Appendicitis, Acute Pleurisy, Acute Pericarditis, and Adhesive Teno-Synovitis.

The group treatment consists in applying at once a counter-irritant, such as painting with strong tincture of iodine, or, when the area is small, a blister. It is useless to waste time with mustard leaves. A long clinical experience has convinced the writer that our predecessors as well as veterinary surgeons are perfectly right in their belief that vesicants are able to arrest local inflammation if applied before this has reached the stage of adhesion, whether it acts by attracting blood from the inflamed area or produces the same effect reflexly. And, after all, a blister is not a particularly painful or lowering remedy. Internally, opium is essential. This is well known to have a drying effect upon mucous membranes and not less upon serous membranes, and this dryness must have an inhibitive effect upon the effusion of lymph. But, in addition, it has a beneficial power of equalising and steadying the circulation, and arrests peristalsis.

The patient must be kept in bed, both for general reasons and because the warmth of the bedclothes also equalises the circulation. It is usual to add belladonna to a mixture containing opium, in order to lessen the tendency to constipation, and that should be done here, for, fortunately, belladonna also

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has a drying effect upon membranes. The following mixture, therefore, is indicated:

R *Tr. Opii* ʒi.
Tr. Belladonnæ ʒiiss.
Aq. Anisi ad ʒvi.
M.

One tablespoonful every four hours.

The diet must depend on the temperature (see p. 70), but is usually of milk and beef-tea to begin with.

When the attack is past, save for adhesions, the following may be given:

R *Pot. Iod.* ʒiiss.
Syr. Aurant. ʒi.
Tr. Cinchonæ ʒvi.
Aq. ad ʒvi.
M.

One tablespoonful three times a day.

The iodide of potassium is given with a view to promote the absorption of the effused lymph; but it is not very effective. Fibrolysin has been given for adhesions in some cases with success. The dose is 3 grains injected into the skin of an adjacent part.

For some time after recovery the patient must guard himself from a local chill by wearing a square or belt of flannel.

Acute Appendicitis.

But it will be said, "Does the group treatment apply to appendicitis?" In the writer's opinion, it does, if not carried so far as to lose valuable time; for he ventures to argue that the immense increase of this disorder in modern times is due to the neglect of old methods which would have inhibited the effusion of lymph. No good reason has been shown for this increased prevalence in our times, and if it

had been as common formerly as it is now, the old doctors, who were in many respects better clinicians than ourselves, would certainly have recognised it, and the chances are that foreign bodies were much commoner in old times when food was less pappy and gave a greater residue. No; what happens is this: From some cause similar to that which produces pleurisy, there results that local inflammation which used to be fairly easily manageable under the term "perityphlitis"; and, for want of active measures, exudation takes place. This goes on later to pus formation, or produces gangrene by strangulation. Appendicitis is common now, because steps are no longer taken to nip it in the bud.

This view will not commend itself to surgeons or, at present, to examiners. Surgeons are hardly fair. They want to have it both ways. They add to the cures which are due to their operation those which, at that early period, would have recovered without it; and these last are by no means few in number, for the writer, who was a student long before appendicitis was heard of, can affirm that when active measures were taken early, perityphlitis was nearly always cured in a few days. When, therefore, the surgeon points out the necessity for early operation, there are fallacies in his reasoning.

The surgeon objects, too, to the methods of the physician and refuses him the employment of counter-irritants. But why? There is no destruction of the true skin, and an intact epidermis is not necessary to healing. And what objection can there be to iodine? It is a powerful antiseptic, and the surgeon himself often orders the skin to be painted with it preparatory to operation. But the poor physician's other remedy is also condemned by the surgeon. "On no account," he says, "give opium. By easing the pain it makes the patient appear better

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than he is, and obscures the diagnosis as well." The physician worth the name, however, does not rely upon the patient's statement that he feels better, and as for the effect upon diagnosis, tenderness is much more important than pain and is much less affected by opium than is the latter. Moreover, the drug would not alter the feeling of local resistance, which is quite as important. No. The surgeon first ties the physician's hands and then mocks at his failures! To be fair, the surgeon must include all cases that are fatal within a fortnight of the operation as unsuccessful.

The writer, therefore, would plead for two days' active medical treatment, provided the case is seen by him at the beginning, and believes better results will be obtained. It consists in painting over the tender area the solution of iodide given on p. 207 and covering it with hot flannel; while, to arrest peristalsis, opium is given internally and all nourishment except glucose and water withheld. Formerly, enemata were given from the onset, but, as these would excite peristalsis, perhaps they are better avoided. The opium should suffice to counter the effects of irritating contents.

Acute General Peritonitis.

The area here is too large for iodine or blistering, and a better local application is a turpentine stupe followed by bran poultices. At the onset a soap enema should be given, and for the next few days the bowels must take care of themselves. This is of the less consequence because the diet should be as nearly as possible non-residual such as beef-tea, peptonised milk, Benger's Food, and whey. The group treatment will suffice, but many cases depend upon causes which demand operation.

Acute Pleurisy.

The group treatment is efficient; but the cough is annoying, and it is usual to order something to relieve it, such as the following:

R	<i>Tr. Camph. Co.</i>	..	..	..	̄iii.
	<i>Oxymel. Scillæ</i>	..	..	..	̄vi.
	<i>Liq. Ammon. Acet.</i>	..	..	..	̄i.
	<i>Aq.</i>	..	..	..	ad ̄vi.

M.

One tablespoonful when the cough is troublesome.

To afford rest to the inflamed part, a roller is commonly ordered for the chest, as for a fractured rib, or, alternatively, two or three strips of strapping, placed horizontally, away from the friction area. It is open to question, however, whether this is quite wise; for it would certainly tend to promote adhesions. Perhaps further clinical experience in the light of these observations will decide that it is better for the patient to put up with the pain of coughing and take his reward in that freedom from adhesions which would result from their repeated breakdown by coughing. The same argument applies against the use of strong opiates. Attempts are rarely made to break down adhesions in convalescence; but something can be done by deep-breathing exercises. The writer remembers a patient who could not properly inflate the chest all through a winter that followed an attack of pleurisy. When spring came, he resumed cricket; and in bowling round-arm, he felt a snap in his side, spat up a little blood, and inflation has been normal ever since. Another patient whose breathing on one side was seriously hampered after pleurisy had, some three months after it, an attack of acute gastritis, and the result of the vomiting was the complete restoration of bilateral breathing power. Since then the writer

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has ordered sternutatories and large-range arm movements. Of medical methods, fibrolysin injected in 3-grain doses under the skin of the back gives good results sometimes, while iodide of potassium has some effect in promoting the absorption of the effused lymph. In convalescence it may be advantageously combined with a tonic as in the group mixture.

The tendency of acute pleurisy to go on to serous effusion and empyema is very great and, to counteract it, the treatment at the onset must be very vigorous.

For Pleurisy with Effusion, see p. 34.

Acute Pericarditis.

However sceptical some practitioners are about blisters, few dispute their efficacy in pericarditis. They are, in fact, a *sine quâ non*. An area about $2\frac{1}{2}$ inches in diameter should be painted over the præcordium, with its centre at the point of maximum friction, and when it has risen it should be cut and treated with resin or savin ointment, so as to keep up some irritation. It is not at all uncommon for a blister to abort an attack of pericarditis. The alternative is ice-bags; but, in the writer's opinion, these are unscientific and are better avoided. If they could be applied right round the heart, something might be said in their favour; but applied to the front only, the probable effect would be to drive the inflammation to the posterior aspect of the pericardium or to evoke endocarditis.

The opium mixture for the group requires the addition of sodium salicylate in doses of 10 grains. When the temperature has fallen, the iodide and cinchona medicine should be substituted. If there is marked systolic retraction in the præcordial intercostal spaces, fibrolysin should be given a chance.

For Pericardial Effusion, see p. 34.

Acute Teno-Synovitis.

The group treatment is indicated, the strong iodine being painted along the course of the tendon. When the acute symptoms have passed off, it should be replaced by inunctions of ungu. hydrargyri and the iodide mixture taken. At the same time passive motion must be begun, and, later, massage may be necessary. Neglected cases may require the application of radiant heat, or, failing that, the adhesions may have to be broken down under chloroform. In traumatic cases, where a gap is left in the continuity of the tendon, this may have to be bridged with rabbit tendon.

Diphtheria, plastic bronchitis, and even acute pneumonia (which was christened by Niemeyer "croupous pneumonia"), have some claim to be included in this group; but "plastic" implies the idea of adhesiveness, and other groups have a greater right to them.

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THE SEROUS EFFUSION GROUP

THIS group includes transudates, as in the hydrothorax which is apt to complicate mitral disease, and exudates, such as that of acute pleurisy. The diseases, therefore, are Hydrothorax, Pneumo-hydrothorax, Pleurisy or Pericarditis with Effusion, Hydropericardium, and some cases of Cancer of the Pleura or Lung—in the chest. In the abdomen, it includes Ascites and Acute or Tuberculous Peritonitis; while, in the tunica vaginalis, there is Hydrocele. The number of diseased conditions of which hydrothorax and ascites are occasional concomitants is very large, the latter alone numbering thirty-six.

When the quantity of fluid is very small and recent, it is often possible to get rid of it without having recourse to tapping. Salt must be excluded from the diet and the quantity of drinks allowed reduced to a minimum. Unless the kidneys are affected, diuretics are indicated, and perhaps the best is diuretin, which may be given thus:

R *Theobrom. et Sodii Salicyl.* .. ℥ii.
Aq. Chloroform. ad ℥viii.
M.

Two tablespoonfuls every four hours.

Hydragogue purgatives are more particularly serviceable for transudates. Sulphate of magnesia ℥ss, taken with a minimum quantity of water, fasting, and repeated every four hours till a copious

34 AIDS TO RATIONAL THERAPEUTICS

motion results, is as good as any; though pulv. scammoniaë co. or pulv. jalapæ co. are satisfactory alternatives. But if the febrile stage is passed without absorption, most cases will come to tapping.

Paracentesis Thoracis.

The trocar is inserted in the sixth or seventh space near the posterior axillary fold, the patient lying on his back with the shoulders raised and the skin perhaps frozen with ethyl chloride. The fluid should be removed slowly, the negative pressure in the aspirator being slight. It is not necessary to remove all the fluid; what remains is generally absorbed without difficulty. In debilitated subjects it is advisable to give an injection of strychnine before the operation and some brandy after it.

Paracentesis Pericardii.

This is a more serious matter, and is not very often necessary. The trocar is inserted in the fifth space in the parasternal line or near the left sternal edge, and if clear fluid shows itself the aspirator is connected. Marfan's method, however, seems to be superseding the old plan. In this the puncture is made in the middle line immediately below the xiphoid cartilage, the trocar being directed upwards and backwards.

Paracentesis Abdominis.

The bladder having been emptied previously, the patient should sit up with a many-tailed bandage placed behind him. A small trocar is then thrust suddenly in halfway between the umbilicus and the pubes, and as suddenly withdrawn, leaving the canula with several feet of tubing in position; the other end of the tubing dips into water contained in

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a vessel on the floor. At the same time the ends of the bandage are drawn upon so as to support the abdomen. It will have to be tightened at intervals while the fluid is coming slowly away and should be worn for some days afterwards.

Hydrocele.

The trocar is inserted at a spot free from veins on the anterior aspect of the scrotum, about the junction of the upper with the middle third. Pressure should be made while the flow continues. The fluid, however, soon collects again unless some curative treatment is adopted. The usual plan is to inject 2 drachms of a freshly prepared 5 per cent. solution of eucaïne through the canula as soon as the flow ceases. This is retained half a minute, and then $\frac{1}{2}$ ounce of tr. iodi mitis is injected and the orifice closed. Inflammation follows in about twenty-four hours; but no lead or other cooling lotion must be applied unless it is excessive, though a little opium may be given internally. It generally means a week in bed and a suspensory bandage for a month. The cutting operation is more successful, though more troublesome.

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THE PURULENT EFFUSION GROUP

THE group includes Empyema, Pyopneumothorax, Pyopericardium, Antral Empyema, and Sinus Empyema.

The treatment is by drainage.

In empyema and pyopneumothorax the opening is usually made in the eighth intercostal space a little in front of the angle of the scapula. If the ribs overlap much, a portion of the ninth rib is resected, or, in the case of local empyema, a portion in the area of maximum dulness. A $\frac{1}{8}$ -inch rubber tube, provided with a gutta-percha shield, is then inserted; and such adhesions as are within reach are broken down. The tube is then lightly packed with cyanide gauze and covered with cottonwool and a bandage. Washing out the cavity is sometimes attended with danger. It should be done at low pressure, if at all. When the fluid has become scanty and serous, the tube may be dispensed with. After the operation the patient requires good food, hygienic surroundings, and iron or cod-liver oil.

If tubercle is suspected an initial dose of tuberculin (T.R.) of from $\frac{1}{10000}$ to $\frac{1}{2000}$ mgm. should be injected, thereafter gradually increasing the dose.

In pyopericardium, the drainage is usually carried out by Allingham's method.

Empyema of Antrum.

The offending tooth is extracted and the tube inserted through its socket. Should this not suffice the front aspect of the bone must be removed.

Frontal Sinus Empyema.

This can frequently be evacuated by syringing salt and water in an upward direction. A small syringe is useless; the most effective one is a Higginson. In other cases an operation must be performed, but, as a rule, an autogenous vaccine should be tried first.

THE PURULENT FLOW GROUP

THE group includes Otorrhœa, Ozæna, Urethritis, Gonorrhœa, Leucorrhœa, Pyorrhœa, Fistula, and Sinus. The treatment consists of injections and autogenous vaccines.

Otorrhœa.

In syringing the ear, it is important to allow for the free exit of the liquid used. For this reason, a short length of small-bore rubber tubing should be connected with the nozzle, which is not itself inserted. When not in use, it must be kept soaked in carbolic lotion 1 in 20. In uncomplicated cases it is sufficient to use warm boric acid solution; but in all cases it is necessary to dry the meatus thoroughly afterwards. When the discharge becomes thinner and less copious the syringing is replaced by instillations of spirit containing 10 grains of boric acid to the ounce three times a day. Should crusts form, however, the syringe must be employed occasionally.

If the otorrhœa is due to necrosis or other serious condition, an operation is called for.

Ozæna.

The nasal cavities must be first cleared of crusts. This can be accomplished by a syringe or a douche; if the former is used, it should have an olive-shaped nozzle. The liquid commonly used is a warm solution of kitchen salt and borax, a teaspoonful of each

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to the pint; but to save making it fresh every time, it is better to use half this quantity of water and direct the patient to add an equal quantity of hot water to it when needed. If the crusts are difficult to detach, a preliminary oily spray is advantageous. After a time, the crusts will cease to form, and it is sufficient to inject a saturated solution of boric acid with an ordinary syringe. It is a good plan to pass an oiled camel-hair brush up each nostril after syringing.

Simple Urethritis.

It is very important to recognise this condition, or serious trouble of a legal nature may arise. It differs from gonorrhœa in that the organisms found in the discharge are all Gram-positive, whereas those of gonorrhœa are Gram-negative. Injection with warm boric acid lotion preceded by a smart purge usually suffices to cure it. The possibility of a urethral chancre must be borne in mind.

Gonorrhœa.

In the acute stage, warm injections of boric acid should be employed. Better still, perhaps, are night and morning irrigations of warm permanganate of potash solution, 1 in 3,000, as much as 5 to 6 pints being drawn each time from a gravity tank placed about 2 feet above the urethra.

The patient must be in bed on a liquid diet, which, however, does not include tea, coffee, or alcohol. The following mixture should be given:

R	<i>Tr. Hyoscyami</i>	..	..	..	℥vi.
	<i>Pot. Bicarb.</i>	..	..	..	℥ii.
	<i>Pot. Cit.</i>	..	..	..	℥ss.
	<i>Inf. Buchu</i>	..	..	..	℥vi.

M.

A tablespoonful to be taken in a wineglassful of water every four hours.

In addition to this, $\frac{1}{2}$ ounce of sulphate of magnesia should be taken every morning fasting.

When the discharge becomes thinner, and the scalding has nearly gone, santal-oil capsules should replace the mixture. Cold protargol injections, 2 grains to the ounce, should now be commenced; the strength being gradually increased to 5 grains to the ounce. The bulk of each injection should not exceed 3 drachms. The diet may now include fish and chicken. When the "morning drop" stage is reached, the permanganate irrigation must be resumed, but cold instead of warm. This is also the best remedy for gleet, though protargol wax bougies, to be retained all night, are also useful. In all cases syringing must follow micturition, and each injection must be retained for three minutes by compressing the meatus. Autogenous vaccine should be tried in obstinate cases.

Leucorrhœa.

If the case is associated with torn cervix, this must be treated with iodised phenol, applied on cotton-wool fixed to a Playfair's probe. After two or three applications, a quart of warm boric acid solution should be injected night and morning for a week, and then replaced by sulphate of zinc 3 gr. to the ounce, three times a day. A tonic should accompany the latter treatment:

R	<i>Quin. Hydrochlor.</i>	..	..	..	̄ss.
	<i>Tr. Ferr. Perchlor.</i>	..	..	..	̄ii.
	<i>Syr. Aurant.</i>	..	..	..	̄i.
	<i>Aq.</i>	..	..	..	ad ̄vi.
				M.	

One tablespoonful three times a day after meals.

An aperient will be required occasionally.

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any local treatment, and in the case of young girls and hysterical women general measures should be tried first. Good nourishing food is an important accessory.

Pyorrhœa Alveolaris.

Extraction of teeth for this complaint and its alleged consequences has been carried to an absurd extent. Treatment by massage of the gums and free washing with peroxide of hydrogen will cure nearly all cases, provided that stumps and decayed teeth are extracted. No tooth-powder or gritty dentifrice should be used. Cases due to amoebæ should have hypodermic injections of emetin.

Blind Fistula and Sinus.

The stock treatment is to keep the orifice patent and syringe with carbolic lotion; but Beck's Paste is perhaps better. It is made of bismuth subnitrate 6 parts, white beeswax and hard paraffin 1 part each, and vaseline 12 parts. Introduced originally for X-ray work, it turned out to have a curative effect. It is injected into the sinus melted, and is especially valuable for tuberculous cases, as in hip disease; but for large surfaces, as in empyema, it is dangerous. The galvanic cautery is used chiefly for fistula. It should be inserted with the current off until the bottom of the sinus is reached, when it is turned on momentarily; the cautery is then withdrawn. Syringing every day with carbolic lotion follows, and every fifth day the cauterisation is repeated; the sinus, healing from the bottom, gets shallower and shallower till it closes.

See also Sloughs, p. 43.

THE ABSCESS GROUP

THE group includes abscess in muscle, glands, bone, liver, lung, or mediastinum, around the cæcum or kidney, under the skin, and in or around the tonsil.

The group's treatment consists in letting the pus out as soon as fluctuation is detected, or, in the case of an abscess near joint, bowel, or bladder, without waiting for fluctuation. In some cases this involves an operation, as in an abscess in bone; and, in others, an operation is not permissible. After the removal of the pus, the cavity may have to be packed or a drainage tube inserted. In the after-treatment, quinine and iron and good nourishing food are required.

Vaccine treatment is especially indicated for recurrent abscesses, the organism being usually a staphylococcus. Passive hyperæmia in the form of Klapp's suction cups sometimes succeeds in aborting an abscess.

Actinomycosis.

An actinomycotic abscess is treated in the same way, but internally iodide of potassium must be given in 10-grain doses. Vaccine treatment is also employed for this form.

For Tuberculous Abscess, see p. 116.

Quinsy.

When the abscess is forming, suppuration must be accelerated by the inhalation of steam. The incision should be made with a bistoury guarded with strapping.

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THE NECROSIS GROUP

Gangrene.

SEPTIC cases require a boric fomentation which should reach above the line of demarcation. Aseptic cases must be kept so by thorough cleansing and by covering the part with salicylic wool and a bandage.

Traumatic cases, in which no pulsation can be detected, must undergo amputation high up as soon as the shock symptoms have passed off; but if pulsation is still present, the line of demarcation must be waited for. Senile cases and those complicating diabetes require early amputation.

Lung, Gangrene of.

The chief feature is the abominable odour of the breath. The following spray mitigates this, and must at the same time make the parts around the necrosed tissue healthier:

R	<i>Menthol</i>	..	..	..	..	gr. xv.
	<i>Eucalyptol</i>	..	..	..	..	℥v.
	<i>Parolein</i>	..	..	..	..	ad ʒi.

S.: *The Spray.*

Sloughs.

The usual treatment of sloughs, after removal of as much as is possible with the scissors, is to apply warm boric lotion or boric starch poultices. The writer's impression is that the "contemptible" linseed poultice gave much quicker results, and it is really more scientific. For, since a slough is normally

got rid of partly by bacteria, a bactericide can only be a hindrance. More recently it has been found that leucocytes have a slow tryptic action, and boric and salicylic acid, if not other bactericides, inhibit at any rate gastric digestion. The fact is that a remedy which has stood the test of tens, if not hundreds, of years, although it may be modified, should not lightly be discarded. It occurred to the writer that if leucocytes can digest a slough in, say, a month, pepsin might do the same in a few hours. The necrosed area in the stomach that, digested, forms a peptic ulcer, furnished an analogy. By injecting a sinus such as a bullet track with glycerin of pepsin, and sealing it up for a few hours, the necrosed tissue could hardly fail to be digested, and the bullet might be safely left in, as others are when there is no sloughing. The writer does not practise surgery; but he has commended the idea to the notice of surgeons in a recent number of the *Lancet* (September 29, 1917).

Large sloughing areas might be treated with lint wrung out in glycerin of pepsin.

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THE HÆMORRHAGIC GROUP

THIS group includes Hæmoptysis, Hæmatemesis, Dysentery, Hæmophilia, Purpura, Epistaxis, Trauma, etc.

The group treatment consists of rest in bed, the lowering of the blood-pressure, the employment of hæmostatics or of drugs which increase the coagulability of the blood, and finally the use of ligatures and local styptics.

Complete rest in bed has the incidental advantages of prolonging the patient's power of resistance and of helping to lower the blood-pressure; the effect is increased by the administration of morphia, for this overcomes the restlessness which so commonly accompanies hæmorrhage. A hypodermic injection of $\frac{1}{3}$ grain of morphia should therefore be given at the onset. To reduce the blood-pressure, tincture of aconite in 1-minim doses every hour is perhaps the method that is least open to objection. Nitrites are inadmissible, for they might aggravate matters by dilating the arterioles; and iodides are too slow. To increase the coagulability of the blood, 10 grains of the lactate of calcium given three times a day will suffice for most cases; but where the danger is imminent, a drachm in 10 ounces of water should be injected *per rectum*. General hæmostatics such as tannic and gallic acids, acetate of lead, etc., are of very little use, for their remote action; and, except for uterine hæmorrhage, ergot and adrenalin are worse than useless, for they raise the blood-pressure.

It is difficult also to believe in swallowed ice for remote hæmorrhage such as hæmoptysis, and it is conceivable that it may do harm; for, if one set of bloodvessels be made to contract, those adjacent, from which the blood comes, may compensate this by dilating. The same reasoning applies to the use of ice-bags for deep-seated hæmorrhage such as hæmatemesis; but they are not much used now. The local value of ice, adrenalin, perchloride of iron, and hazeline, as styptics, is a different matter, and where one of these can be made to reach the part it may render a great service. The lactate of calcium should be continued for some time after the hæmorrhage has ceased; but an excess in the blood is said to be as bad as a deficiency, so that it is wise to omit it two days out of every seven.

Pulmonary Hæmorrhage.

Hæmoptysis occurs in 60 per cent. of cases of pulmonary tuberculosis; but it is found in many other conditions, such as aortic regurgitation, ruptured aneurysm, arterio-sclerosis, carcinoma, myeloid, pulmonary embolism or thrombosis, and syphilitic lung. In all cases the patient must lie on his back, and he must not speak above a whisper. He is then given morphia, and this is followed by the use of adrenalin spray:

R *Liq. Adrenin Hydrochlor.* (B.P.C.) ʒiiss.
Aq. Chloroformi ad ʒi.
 M.

S.: *The Spray.* To be used every hour.

It is generally advantageous to give $\frac{1}{2}$ ounce of sulphate of magnesia in the first stage. If the pulse is strong, the tincture of aconite is indicated, so as to lower the blood-pressure. It is very important to minimise the strain of the cough, and for this purpose

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10 drops of tr. chloroformi et morphinæ should be given at frequent intervals. In bad cases 20 c.c. of horse serum may be injected into a vein. When the hæmorrhage has subsided the lactate of calcium treatment should be begun, and continued for a month. The rest of the treatment depends upon the cause.

Gastric Hæmorrhage.

Hæmatemesis may arise from ulcer of the stomach, cancer of the stomach, gastrostaxis, cirrhosis of the liver, portal thrombosis, valvular disease, rupture of an aneurysm, corrosive poisoning, hæmophilia, purpura, and some malignant fevers. The special treatment is that of gastric ulcer, but it applies practically to all forms of hæmatemesis.

Gastric Ulcer.

At the onset the patient must be continually sucking small pieces of ice, but he must be warned against swallowing air with it. It is best to stop all food by the mouth until forty-eight hours after the disappearance of blood from the stools, and replace it by rectal feeding. There are, however, not many foods that are really absorbed and digested in the rectum. If such feeding is necessary over a short period only, glucose is the best; but if long, the following is indicated:

The yolks of two eggs.

<i>Dextrose</i>	..	..	..	..	3i.
<i>Salt</i>	..	..	..	..	gr. x.
<i>Pancreatized Milk</i>	..	..	..	..	3xss.

Even of this not much more than 50 per cent. is assimilated. The nutrient enema should be alternated with saline solution, to which $\frac{1}{2}$ drachm of lactate of calcium has been added. The quantity

injected each time should not exceed 5 ounces, or it will not be retained. Septic parotitis often accompanies rectal feeding; but a fairly good preventative is chewing-gum or pellitory. The first food given by the mouth should be Benger's Food, peptonised milk, or whey, in quantities not exceeding a wine-glassful at a time; then, after a fortnight, minced fish and chicken may be given, and a fortnight later ordinary diet may be resumed. The Lenhartz diet is a good alternative. In the past, many cases of gastrostaxis have been wrongly diagnosed as gastric ulcer, especially in young women; for it has now been shown that the sex incidence in them is only as 125 to 100. Still, if the hæmorrhage is considerable, it is better to treat it as if there were no doubt about the case.

In cases of slight hæmorrhage this severe treatment is not desirable. Indeed, if the cause be portal obstruction, as in cirrhosis of the liver, a little loss of blood will do good.

Intestinal Hæmorrhage.

This may occur in a large number of affections—namely, gastric, duodenal, typhoid, tuberculous, or syphilitic ulcer; hæmophilia, purpura, aneurysm, portal obstruction, mesenteric embolism, papilloma, villous tumour, cancer, dysentery, hæmorrhagic proctitis, and piles. The list has involved some overlapping, however.

The group treatment is more or less applicable to all these diseases. *Duodenal ulcer* is treated like the gastric variety; other ulcers need also the treatment of the disease of which they form a part. *Intussusception* may have a short period of treatment by injection of air through a Higginson's syringe and manipulation, but an operation must not be delayed. *Hæmophilia* may yield to thyroidin or, if accessible,

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to local freezing; but transfusion of blood is the last resource if the bleeding continues; on the other hand, if it has stopped, and syncope is threatened, large subcutaneous or rectal injections of saline may suffice. Piles are treated by injections of hazeline or sulphate of copper, or, these failing, by operation (see p. 195).

Purpura.

The patient must be kept in bed and, in addition to the calcium treatment, must be given iron and arsenic. Thus:

R	<i>Tr. Ferri Perchlor.</i>	..	..	..	̄ii.
	<i>Glycerin.</i>	..	..	..	̄vi.
	<i>Liq. Arsen. Hydrochlor.</i>	..	..	..	̄xl.
	<i>Aq.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful three times a day after meals (omitting Sundays).

Sometimes a few drops of turpentine on sugar will succeed where iron fails. Lately, subcutaneous injections of sterilised gelatine (Merck) are said to have given extraordinarily good results. Stimulants and even oxygen inhalations may be required in severe cases.

Henoch's Purpura is treated by opium.

Dysentery.

The group treatment is good for the hæmorrhage, but there are other things to consider. The amœboid form is now very successfully treated by Rogers' method, a hypodermic injection of emetin hydrochlor., $\frac{1}{2}$ grain, dissolved in 2 c.c. of sterilised saline solution three times a day. Alternatively, 3 grains of emetin bismuth iodide may be given every night for twelve nights by the mouth. For bacillary

dysentery, Shiga's polyvalent serum is given in two doses of 10 c.c. each, six hours apart. The diet in the acute form and in the exacerbations of the chronic form must be limited to peptonised milk and lime water. Opium enemata may be necessary if tenesmus should be marked. For the bacillary form, however, the old treatment was often quite satisfactory. It consisted in giving a drachm of sulphate of soda in hot water every two hours till fæces appeared. For old-standing dysenteric ulcers, the best treatment is a daily enema of albargin, 30 grains to a pint of water. If the case is complicated by malaria, quinine must be added to the other treatment. For some time after recovery vegetables and sweets should be excluded from the diet, and salicylate of bismuth given.

Epistaxis.

When this occurs at the menopause, or is preceded by headache and throbbing in an elderly person, it is better to leave it alone, unless very excessive. In addition to the group treatment, the clots should be cleared out by a douche of salt and water; this is followed by adrenalin spray, or, if severe, by packing with adrenalin tape. Rarely it may be necessary to plug the posterior nares by means of Bellocq's sound. Lactate of calcium should be given for some time afterwards, and the patient should be warned not to stoop or become excited.

Metrorrhagia.

The first thing to do is to squeeze out the clots by deep pressure upon the hypogastrium, and then put firm pad and tight bandage over the part to prevent fresh ones forming. A hypodermic injection of ergotin should follow; or alternatively two $\frac{1}{4}$ -grain

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tablets of cotarnin phthalate every four hours. Recently, *tr. cannabis indicæ* has been recommended. In bad cases packing may be necessary, and in others curetting, removal of fibroids, polypi, etc. The patient should continue to wear a pad and bandage for some time. The anæmia that follows is best treated by arsenic and bone-marrow, the objection to iron being that it excites menorrhagia. Still, if started three days after, and left off three days before, a period, it may usually be given with advantage.

Red wine should be avoided in both menorrhagia and epistaxis.

THE CALCIUM INSUFFICIENCE GROUP

THIS group includes Purpura, Chilblains, Chronic Urticaria, Angeio-Neurotic (Edema, Rickets, Mollities Ossium, Cretinism, and that form of Anæmia that is secondary to hæmorrhage.

The supply of the deficiency is in most cases only part of the general treatment, and these diseases are dealt with elsewhere; but in chronic urticaria and pernio (chilblains) it is a principal feature. The group treatment is by lactate of calcium 10 grains three times a day, followed by a long draught of water.

Acute Urticaria.

For convenience, this form of the disease is dealt with here; but it is doubtful whether calcium deficiency has much to do with it.

If the patient has partaken of mussels, crustaceans, pork, veal, meat-pie, or tinned food, within a few hours, an emetic should be given, followed by an ounce of castor oil. If the interval is long, the emetic is of little use. Then follows this mixture:

℞ <i>Bismuthi Salicylat.</i> }	..	..	āā	ʒii.
<i>Mag. Carb. Levis</i> }	..	..	..	ʒiv.
<i>Sodii Bicarb.</i>	..	..	..	ad ʒvi.
<i>Aq. Ment. Pip.</i>	..	..	..	ad ʒvi.

M.

One tablespoonful every four hours.

Very simple food must be taken for some days. The itching can be allayed by starch powder or carbolised oil, 1 in 10. It must be remembered that

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urticaria may be produced by salicin, iodides, anti-pyrin, antitoxin, sulphonal, picric acid, copaiba, antimony, santonin, quinine, and bromides.

Chronic Urticaria.

This is often obstinate and is liable to recur. It is another instance of the automatic habit; the group treatment is of great value; but intestinal antiseptics are also indicated. Such are salol, guaiacol, and, particularly, ichthyol, 5 minims three times a day in capsules. The mixture ordered for the acute form should also be given, and the diet must be very plain. A soda bath, made by adding 4 ounces of washing soda to 30 gallons of water should be taken once or twice a week, and woollen clothing should be replaced by the cellular variety.

Chilblains.

The group treatment by calcium often has a wonderful effect; but it must be supplemented by such clothing as will keep the extremities warm; locally, for unbroken chilblains, the following liniment will be found serviceable:

R	<i>Menthol</i>	..	..	..	..	℥iii.
	<i>Chloroform.</i>	..	..	..	..	℥ss.
	<i>Lin. Aconit.</i>	..	..	..	..	ad ℥iii.
						M.

S.: *The Liniment.*

Soak cottonwool in the liniment and rub the part lightly.

For broken chilblains, ung. picis may suffice, but ichthyol, 3 drachms to 2 ounces of wool fat, is better.

A stimulating tonic is helpful:

R	<i>Tr. Cinchonæ</i>	..	..	..	..	℥vi.
	<i>Ammon. Carb.</i>	..	..	..	..	℥i.
	<i>Aq. Chloroform.</i>	..	..	..	..	ad ℥vi.
						M.

One tablespoonful three times a day.

Elderly people and those with degenerated arteries should be treated by nitrites:

R *Liq. Trinitrin.* ʒss.
Tr. Strophanth. ℥xx.
Aq. Chloroform. ad ʒvi.

M.

One tablespoonful three times a day.

Warm gloves and stockings should be worn day and night.

Angeio-Neurotic Œdema.

The treatment is much the same as that ordered for urticaria; but it not unfrequently fails; more attention should be directed to intestinal antiseptics, and thyroidin has recently been advocated.

Mollities Ossium.

In addition to calcium, phosphorus is indicated. This is best fulfilled by lecithin or the phosphorus pill; phosphates are useless for this purpose, and even hypophosphites are not much better. Indeed, no treatment is satisfactory except an operation; for the disease can be arrested by removal of the ovaries or by Porro's operation.

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THE ANÆMIC GROUP

THIS group includes Simple Anæmia, Chlorosis, Banti's Disease, Jaksch's Anæmia, Aplastic Anæmia, Gaucher's Anæmia, Pernicious Anæmia, and Leukæmia. Anæmia also occurs as a complication in many other diseases, and may have to be treated on group lines.

The group treatment consists in the administration of iron, arsenic, or bone-marrow, together with plenty of fresh air and good food.

In the writer's experience—and in this he found himself in agreement with the late Sir Lauder Brunton—the organic preparations are inferior to the inorganic. In general, the tincture of perchloride of iron is to be preferred:

R	<i>Tr. Ferri Perchlor...</i>	..	..	ʒii.
	<i>Glycerin.</i>	..	..	ʒi.
	<i>Aq. Chlorof.</i>	..	..	ad ʒvi.

M.

One tablespoonful three times a day after meals.

Liq. arsen. hydrochlor. may be added with advantage in many cases. In persons with weak digestion a milder iron preparation may be better, such as the citrate of iron and ammonia. Bone-marrow, not cooked, but given as a sandwich between hot toast, is especially useful for anæmia secondary to metrorrhagia (see p. 50). Iron is very apt to upset the liver, and it is a good practice to order a dose of effervescent saline to be taken every other morning during the

course. The success of Schwalbach and Spa is due to the fact that the carbonic acid gas present enables the patient to take more iron without upsetting the digestion. We have no gaseous chalybeate spring in this country; and the writer has imitated it for many years with success in people who declare that they "cannot take iron," by directing each dose to be taken in a claret glass of soda-water, or by ordering the iron in an effervescent mixture:

℞	<i>Ferri et Ammon. Cit.</i>	..	..	..	℥iiss.
	<i>Pot. Bicarb.</i>	..	..	..	℥iiss.
	<i>Syr. Aurant.</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥viii.
				M.	

Pour one-eighth part into one glass and two teaspoonfuls of lemon-juice into another, mix them and drink at once.

The constipating effect of iron is another difficulty; but is got over in great measure thus:

℞	<i>Ferri Sulph.</i>	..	..	..	gr. xl.
	<i>Mag. Sulph.</i>	..	..	..	℥vi.
	<i>Acid. Sulph. Dil.</i>	..	..	..	℥iiss.
	<i>Syr. Aurant.</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥viii.
				M.	

Two tablespoonfuls three times a day.

For children under six, Parrish's food is one of the best forms.

Arsenic is usually given as Fowler's solution in 3-minim doses after meals. If the tablet form is preferred, a drink of water should be taken after each. All arsenical preparations are cumulative, so that an intermission of two or three days should be enjoined every fortnight; but if the dose is moderate it is enough to tell the patient to observe the sabbath and take none on that day. Iron must be stopped while the menses are on.

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Pernicious Anæmia.

In the acute stage or during an exacerbation, the patient must be in bed on liquid or even predigested diet. A sinapism should be placed on the epigastrium and the following medicine given:

R	<i>Bismuth. Subnit.</i>	..	..	..	̄iiss.
	<i>Acid. Hydrocyan. Dil.</i>	..	..	..	̄ss.
	<i>Spir. Armoraciæ Co.</i>	..	..	..	̄i.
	<i>Aq.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful every four hours.

This will lessen the vomiting; but if there is much pain, some morphia may be given, the lightest form being probably nepenthe.

In the chronic form, or during the intervals, arsenic is better than iron. It may be given thus:

R	<i>Liq. Arsenicalis</i>	..	..	..	̄ss.
	<i>Sodii Bicarb.</i>	..	..	..	̄iii.
	<i>Aq. Aurant. Flor.</i>	..	..	..	ad ̄vi.

One tablespoonful three times a day after meals.

Alternatively, and sometimes with better effect, arsenic may be given in the form of Salvarsan (see p. 120). Antiseptic treatment must be applied to the entire alimentary canal. In the mouth, all stumps and decayed teeth must be removed; a mouth-wash made of equal parts of peroxide of hydrogen and water must be freely used after each meal; and an antiseptic dentifrice such as kolynos used. The stomach must be washed out once a day with boric solution and capsules of guaiacol given; while for the intestines, salol in keratin, or, perhaps better, suct-covered pills, is to be given in 5-grain doses three times a day.

The antistreptococcus serum of Dr. William Hunter has been successful sometimes, and a claim has been

made for X-ray and for thorium treatment. Splenectomy gives no permanent result.

Aplastic Anæmia.

The treatment is the same as that for pernicious anæmia, minus the serum.

Septic Anæmia.

This is usually a complication of other diseases. The treatment is by antiseptics as in the pernicious form; in convalescence it is that of simple anæmia.

Banti's Disease.

The group treatment is fairly successful, but X rays to the spleen should be tried, and if both these measures fail, the one chance is splenectomy.

Jaksch's Anæmia.

The group treatment is indicated; but it must be reinforced by special remedies when rickets, tuberculosis, syphilis, or intestinal catarrh, is associated with the condition.

Leukæmia.

The group treatment, and especially that by arsenic, seems to prolong life; but cure is not to be expected. Benzol in capsules, dose 2 to 5 minims, is said to have been successful, but sometimes it makes matters worse. X rays applied to the spleen, or, better, by Pancoast's method to the medullary canals of the long bones, has also met with some success. Splenectomy is contra-indicated.

Hæmorrhagic Anæmia.

The group treatment is quite successful, provided the hæmorrhage has been arrested. In bad cases transfusion is necessary (see Hæmorrhagic Group).

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THE CELLULITIS GROUP

THE group includes Cellulitis, Erysipelas, and Angina Ludovici. The group treatment is as follows: At the onset, an aperient such as calomel and jalap should be given, and after this has acted, a salicylate mixture:

R *Sodii Salicylat.* ʒii.
Syr. Prun. Virgin. ʒvi.
Aq. ad ʒvi.
M.

One tablespoonful every four hours.

If the temperature is over 100°, the patient must be kept in bed; but the diet should be as generous as he can digest.

Cellulitis and Erysipelas.

The treatment of these is practically identical, and it is probable that they represent merely different degrees of the same affection. The site of entry, if discoverable, must be treated antiseptically, and, if in the skin, it should be touched with pure carbolic acid. In erysipelas faciei it is commonly in the nasal sinuses, and boric acid douches must suffice. The clear skin surrounding an erysipelatous patch should be outlined with $\frac{1}{2}$ -inch band of strong liquor. ferri perchlor., the centre being filled up with ichthyol collodion, or, in severe cases, with nitrate of silver, 15 grains to the ounce.

In erysipelas the salicylate mixture should be replaced by one containing perchloride of iron at the

end of five or six days and the brandy-and-egg mixture is usually necessary. An alternative treatment is a streptococcus vaccine administered early; but it can be hardly said to be established yet. Phlegmonous erysipelas requires multiple free incisions. Isolation is desirable for erysipelas, and it should be continued till the redness and desquamation have disappeared.

Angina Ludovici, or Submaxillary Cellulitis.

This is a serious affection. Free incisions must be made early in the submaxillary triangle in the middle line of the neck, and hot boric fomentations applied. All decayed teeth must be removed and a mouth-wash of peroxide of hydrogen solution used several times a day. The group medicine may be given, but the addition of tr. quinin. ammon. in 1-drachm doses is an improvement. The strength must be kept up by the brandy-and-egg mixture and plenty of milk and beef-tea; but if swallowing is very difficult, nasal or rectal feeding may have to be resorted to (see p. 47). Tracheotomy may be called for at any moment, and everything must be in readiness for it. When the temperature has fallen and pus is discharging freely, iron should replace the salicylate:

R	<i>Tr. Ferri Perchlor...</i>	..	..	℥iiss.
	<i>Quinin. Hydrochlor.</i>	..	..	℥ss.
	<i>Syr. Aurant.</i>	..	..	℥i.
	<i>Aq.</i>	..	..	ad ℥vi.
	<i>M.</i>			

One tablespoonful every four hours.

At the same time, fish and chicken should be begun. Later, the diet must be generous and include port-wine. A visit to the sea completes the cure.

Should much thickening remain, the treatment is that of fibrosis (see p. 61).

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THE CHRONIC FIBROSIS GROUP

THE group comprises those diseases in which the increase of fibrous tissue is a marked feature. Such are: Cirrhosis of the Liver, the Lung, the Kidney, the Stomach and the Pancreas; Arterio-sclerosis, and Fibrositis.

The group treatment is by iodide of potassium, which is more or less useful in all, while as regards those which are accessible to local treatment, the use of fibrolysin is indicated. The position of this is not quite established in practice yet; but its latest form, cicatricine, is very promising. This last should be injected in 12-minim doses under the skin in the neighbourhood of the part affected.

Cirrhosis of the Liver.

One great essential in the treatment of this disease is complete deprivation of alcohol; and this applies even in cases which can be traced to syphilis or, as happens occasionally, to malaria. If the patient is seen before contraction has commenced, he should have a month of milk diet. But, in any case, he must partake sparingly of meat, tea, and coffee, and avoid altogether fatty food and sugar. It is usual to forbid spices; but one indication for treatment is intestinal antiseptics, and spices, and especially cinnamon, tend to promote this. Cinnamon, indeed, is a valuable addition to milk, besides breaking by its flavour the monotony of milk diet pure and simple.

The iodide of potassium acts better in combination with chloride of ammonium:

R	<i>Pot. Iod.</i>	..	..	..	..	ʒi.
	<i>Ammon. Chlorid.</i>	..	..	..	..	ʒii.
	<i>Aq. Cinnamomi</i>	..	..	..	..	ad ʒvi.
						M.

One tablespoonful every four hours.

In addition to this, 2-grain pills of salol coated with suet should be given daily. Portal congestion favours the formation of fibrous tissue, and if present, 3 or 4 grains of calomel should be given twice a week, the dose being followed in the morning by 2 drachms of sulphate of soda in a tumbler of hot water. The cure at Vichy or Karlsbad is beneficial; but in any case fresh air and exercise are needed in convalescence. The following tonic should be given:

R	<i>Tr. Gentian.</i>	..	..	..	..	ʒvi.
	<i>Acid. Nitro-Hydrochlor. Dil.</i>	..	..	..	..	ʒii.
	<i>Syr. Aurant.</i>	..	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	..	ad ʒvi.
						M.

One tablespoonful three times a day.

For Ascites, see p. 34.

Hanot's Cirrhosis.

The treatment is by intestinal antiseptics, of which the best here is β -naphthol, 5 grains being taken in capsules three times a day. Iodides are best given in the form of Donovan's solution. The patient must live in healthy surroundings with a pure water supply and a diet consisting chiefly of milk, eggs, and a little fish.

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Cirrhosis of the Lungs.

The iodide treatment of the group holds with great force here, for in many cases there is a syphilitic element. The patient, if at dusty work, must give it up or wear a respirator. In unilateral cases the compensatory enlargement of the sound lung must be encouraged by deep-breathing exercises. The associated conditions demand opportunist treatment.

See Asthma, p. 160. Bronchitis, p. 13. Bronchiectasis, p. 14. Phthisis, p. 113.

Cirrhosis of the Kidneys.

This condition arises chiefly in association with gout, lead-poisoning, and syphilis. The group treatment by iodide of potassium is the best that can be done; but no treatment is very satisfactory, for at the best it merely prolongs life. Auxiliaries are warm clothing, a warm and dry climate (especially that of Egypt), and measures which relieve the kidneys of some of their work, such as a hydragogue purgative in the form of pulv. jalapæ co. twice a week, or a diaphoretic in the shape of a Turkish bath. Theoretically an exclusive milk diet would be indicated; but the disease runs too long a course for this, and a compromise must be made by permitting fish, a little meat, and much farinaceous food.

Complications are perhaps more common here than in any other disease, so that the patient must be kept under observation more or less during the whole course of the disease. That which gives the least warning is cerebral hæmorrhage, and to ward this off, stooping, straining, excitement, and large meals, must be carefully avoided.

Fibrositis.

The group treatment holds good in all stages; but something may be needed for the pain in the acute stage, and if phenazone do not suffice, some morphia may be given. Fibrositis is very liable to become chronic, and if so it is by no means easy to get rid of. It is therefore worth the patient's while to take complete rest in the early stage, and devote his time to hot fomentations. Not even passive exercise should be allowed at this stage. As the pain subsides the fomentations may be less frequent, and in the intervals between them the following should be rubbed in lightly with a piece of cottonwool:

R *Methyl Salicylat.* ℥iii.
Ol. Olivæ ad ℥i.

M.

S.: *The Liniment.*

When there is no pain, except on movement, the liniment should be replaced by painting the part with strong tincture of iodine. Exercises should now be begun, and later radiant heat, vibration, and ionisation with iodine, or, better, with salicylates, employed. Thiosinamin is worth trying. The diet should include no malt liquors and very little meat.

Dupuytren's Contraction.

This may be considered a form of fibrositis, and while thiosinamin is of some use, surgery offers a better chance. The treatment consists in making thirty or forty punctures subcutaneously, and putting the hand first in a splint and afterwards in extension apparatus. Faradisation is applied to the extensor muscles.

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Arterio-Sclerosis.

Not very much can be done for this, but the iodide of potassium in 10-grain doses three times a day is beneficial in all but very old or very debilitated persons. It may have some absorptive power upon the fibrosis, but it also acts by lowering the blood-pressure. The latter effect is also obtained by giving every night erythrol tetranitrate gr. ii, and by reducing liquids. The treatment must not be carried too far; for, after all, the increased blood-pressure is compensatory, the auxiliary elastic force of the arterial system having been lost. It is well to avoid much milk, soured or not, on account of its calcium content; and spirits and tea, because they send the blood to the head. A warning should also be given against stooping, straining, and sudden exertion. Still, many persons go on steadily for years with this complaint, so that on no account must the patient be turned into a chronic invalid.

Barlow's Disease.

This is also called infantile scurvy; but it differs somewhat from the scurvy of adults. The vitamins of the infant's nourishment have been destroyed by the milk having been boiled or, though to a less extent, by sterilisation. They are also absent from condensed milk and from practically all the advertised infants' foods. If it be necessary to continue the food the child has become accustomed to, he must be given, in addition, some orange-juice and sugar, raw-meat juice, or, for a change, potato-cream. The last is made by passing a thoroughly steamed floury potato through a fine sieve and mixing it with milk until it has the consistence of cream. Iron and cod-liver oil are indicated when the dietetic treatment has been started late. Thus:

R	<i>Syr. Ferri Phos. Co.</i>	..	..	ʒi.
	<i>Ol. Morrhuæ</i>	..	..	ʒii.
	<i>Mucil.</i>	..	..	q.s.
				M.

One teaspoonful three times a day.

The child must have plenty of fresh air; but the nurse must be careful in handling him on account of the fragility of the bones.

Beri-Beri.

The great cause of this disease seems to be polished rice; consequently, if any rice is eaten, it must be the unpolished variety. The diet must be on a generous scale and include green vegetables. There is a great liability to heart attacks, and for this reason the patient must be kept in bed. The treatment is by nitrites, as for angina pectoris; but if cyanosis persists, repeated venesection is the only thing. When the acute attacks have passed off,

strophanthus and nux vomica should be given, and the muscles treated by massage and faradisation (see Flaccid Paralysis Group). As soon as the patient can bear removal, he should take a sea voyage or, at least, move to another district.

Complications to be watched for are anasarca, pleural effusion, and ankylostomiasis.

Rickets.

Vitamine insufficiency is a less important factor here; but some replacement is usually required. The general hygienic conditions are very important. The child should be sensibly clothed with wool next the skin, should take nothing between meals, and should live practically in the open air. At night he must not share his bed with another. The windows must be kept open. Rickety infants always kick off the bed-clothes, and should wear combinations. In bad cases, lateral splints must be worn. Many such children are too fat, and should have their carbohydrates reduced; but even the thin ones must not be allowed to walk or stand much, though to take the place of exercise massage is desirable. A grey powder will be required once a week, and perhaps other aperients in between. Cod-liver oil and Parrish's food, as for infantile scurvy, should be given, preceded, if the stomach be irritable, by a short course of an alkaline mixture.

Complications to be watched for are convulsions, bronchitis, and laryngismus stridulus.

Hereditary Syphilis.

There is generally some vitamine insufficiency here (see p. 119).

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THE INFECTIVE FEVER GROUP

THIS group includes Scarlatina, Influenza, Mumps, Measles, Rubella, Typhus, Typhoid, Trench Fever, Relapsing Fever, Chicken-Pox, Small-Pox, Glandular Fever, Yellow Fever, Weil's Disease, Acute Pneumonia, Whooping-Cough, Dengué Fever, Rheumatic Fever, Follicular Pharyngitis, Glanders, Diphtheria, Ratbite Fever, Malta Fever and Sandfly Fever.

Drugs are of less importance than skilled nursing, and the following prescription will suffice, with modifications, for nearly all cases:

R	<i>Sodii Salicylat.</i>	..	..	..	̄iii.
	<i>Sodii Brom...</i>	..	..	..	̄iiss.
	<i>Syr. Aurantii</i>	..	..	..	̄i.
	<i>Aq.</i>	..	..	..	ad ̄vi.

M.

One tablespoonful to be taken every four hours.

It is not perhaps customary to give bromide at this stage, but in the writer's experience it is of great value in easing the general pain and soreness, as well as the restlessness consequent upon these, and thus indirectly lessening the demand upon the patient's strength. If the general pain is absent, it may be omitted.

In the case of the eruptive fevers, if there should be a delay in the appearance of the rash, a mixture such as this should be substituted:

R	<i>Spir. Ætheris Nitrosi</i>	..	..	̄iii.
	<i>Liq. Ammon. Acet.</i>	..	..	̄vi.
	<i>Syr. Aurantii</i>	..	..	̄ss.
	<i>Aq.</i>	..	..	ad ̄vi.

M.

One tablespoonful to be taken every four hours.

The diet depends upon the temperature.

Temperature 100° to 102° , or subfebrile, diet: Beef-tea, with pounded meat added; broth made from chicken, veal, or mutton; custard, arrowroot, blanc-mange, light milk-puddings, cocoa, ovaltine, or China tea made with half milk; barley-water, or milk.

Temperature 102° to 105° , or perfebrile diet: Broth, beef-tea, milk with one-fourth water and 15 grains of citrate of soda to the pint; home-made lemonade, whey, barley-water, imperial drink, etc.

Temperature over 105° , or superfebrile diet: Whey, peptonised milk, Benger's Food, Allenbury diet, jellies, alcohol, brandy-and-egg mixture, lemonade, barley-water, etc.

This table, which was devised for the writer's reference book on treatment, is equally applicable to most inflammatory diseases, and is sometimes referred to in the text to save space.

There is often great difficulty in getting children to take beef-tea, and a substitute can be found in nutrient lemonade (see *Edinburgh Medical Journal*, 1902). It is made by beating up the whites of two eggs with a pint of home-made lemonade. Children will drink any quantity of it.

The allowance of carbohydrates in the dietary is in excess of that commonly given; but this, right or wrong, is the outcome of the writer's experience, which has convinced him that the condition of the average patient at the end of a bout of fever is one of semi-starvation, and that, in default of anything else, he has been living on his own tissues. And, further, that it is this malnutrition which is largely responsible for bedsores and even for heart failure.

The patient must be confined to bed at least as long as the temperature is 100° or over, or the action of the heart remains weak. The bed gives relative rest to the heart, partly, by the recumbent position

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it involves, and, partly, by lessened resistance in the arterioles owing to their dilatation by warmth. Further, this superficial dilatation, by promoting radiation, lowers the temperature, and it is assisted in this by the cooling effect of evaporation from the skin if this is kept duly moist. Any coverture that interferes with evaporation or radiation must be forbidden, and the worst offender is the eiderdown quilt.

Some "opportunist" treatment is needed in almost every case of fever. For constipation, syrupus cascariæ aromaticus or liquorice-powder may be given, effervescent salines being unsatisfactory for patients confined to bed. For diarrhœa, in cases other than typhoid, a full dose of castor oil should be given first, and if this does not suffice, it may be followed by this mixture:

℞	Acid. Sulph. Aromat.	..	..	ʒii.
	Tr. Opii	..	..	ʒi.
	Syr. Zingiberis	..	..	ʒi.
	Aq. Cinnamomi	..	..	ad ʒvi.
	M.			

One tablespoonful every two hours till relieved.

For vomiting, a mustard leaf should be placed on the epigastrium and ice sucked. If it continue, the effervescent mixture should be given:

℞	Sodii Bicarb.	..	..	ʒiv.
	Bismuth. Oxycarb.	..	..	ʒi.
	Sp. Armoraciæ Co.	..	..	ʒi.
	Aq. ..	..	..	ad ʒvi.
	M.			

One tablespoonful to be taken every three hours together with 20 grains of citric acid.

Alternatively, $\frac{1}{2}$ -grain doses of calomel or 1-minim doses of creosote (on sugar) may be given every half-hour. If the patient is taking an expectorant, it must be withheld.

Other indications may be met as follows: Severe headache, acetanilid gr. iii.; sleeplessness, veronal gr. vii.; active delirium, morphia or hyoscin; muttering delirium, alcohol; thrombosis, citric acid; hyperpyrexia, a bath of 80 degrees preceded by brandy; heart failure, see p. 107. For Convalescent Stage, see p. 213; for Bedsores, see p. 183.

LOCAL AND SPECIAL TREATMENT.

Scarlatina.

The group medicine should be continued till desquamation begins, when iron is generally to be preferred. At the same time, or earlier, the skin should be anointed with carbolised oil 1 in 10. Isolation may cease six weeks after the disappearance of the rash, provided there be no sore throat or nasal or aural discharge.

Aperients have sometimes a serious effect in this disease, and may have to be replaced by enemata.

Complications: Rheumatism, nephritis, endocarditis, otorrhœa.

Influenza.

Should the group treatment not relieve the pain sufficiently, and the state of the heart be good, some phenazone or phenacetin may be added, otherwise nepenthe is better. In the gastric form the following mixture should be given:

R	<i>Tr. Bellad.</i>	..	..	..	̄i.
	<i>Tr. Chloroform. et Morphiæ</i>	..	..	..	̄ii.
	<i>Sodii Bicarb.</i>	..	..	..	̄iii.
	<i>Aq. Chloroformi</i>	..	..	..	̄vi.

A tablespoonful every four hours.

If vomiting be troublesome, a teaspoonful or more of lemon-juice should be taken with each dose.

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Alternatively, $\frac{1}{2}$ -grain doses of calomel, every half-hour, till six have been taken.

Isolation: three days after the temperature has become normal, provided all discharges have ceased.

Complications: Neurasthenia, p. 149; bronchitis, p. 13; neuritis, p. 139; heart failure, p. 107.

Mumps.

After a week of the group medicine, the following should be substituted:

R	<i>Pot. Iod.</i>	..	..	..	..	ʒi.
	<i>Pot. Acet.</i>	..	..	..	..	ʒii.
	<i>Aq. Cinnamomi</i>	..	..	..	..	ad ʒvi.

A tablespoonful every four hours.

If the swellings are very painful and tender, poppy fomentations may be applied; but usually it is enough to cover the parts with a silk handkerchief tied over the head, and rub the swellings with glycerine and belladonna (p. 115). The mouth should be well rinsed out every two hours with hot boric solution gr. xv. to the ounce.

As soon as the temperature is normal, the patient may get up; but he should not go out till the swelling has gone.

Isolate until the swelling has totally disappeared for a week.

Complications: Orchitis, mastitis, pancreatitis, and abscess formation.

Measles.

In addition to the group treatment, the eyes want special attention, such as the application of a little vaseline to the edges of the eyelids and of some 5 per cent. warm boric lotion to the conjunctivæ. The room should be darkened and the patient should be forbidden to read. Many a child rises from an

attack of measles with myopia when this point is neglected. If the cough is troublesome, the invasion medicine may have oxymel scillæ added to it.

When the rash has gone and the cough persists, the following medicine should be given:

R	<i>Oxymel. Scillæ</i>	..	..	..	̄vi.
	<i>Tr. Ferri Perchlor.</i>	..	..	..	̄ii.
	<i>Syr. Tolu</i>	..	..	..	̄i.
	<i>Tr. Camph. Co.</i>	..	..	..	̄iii.
	<i>Aq.</i>	..	..	..	ad ̄vi.

Adult dose a tablespoonful every four hours.

If the child is old enough, an antiseptic spray may be used with advantage to the throat and nasal sinuses:

R	<i>Ol. Eucalypt.</i>	..	..	..	̄ss.
	<i>Ol. Pini</i>	..	..	..	̄ii.
	<i>Parolein.</i>	..	..	..	ad ̄ii.

S.: The Spray.

Anointing the skin with carbolised oil relieves the itching and may lessen the risk of infection.

Complications: Bronchitis, broncho-pneumonia, otorrhœa. For some unexplained reason, children recovering from measles seem to contract whooping-cough very easily.

Isolation: three weeks after the disappearance of the rash, all desquamation having ceased.

Rubella or Rôtheln.

The group treatment will suffice. The patient need not be confined to bed for more than five days in most cases. Isolation: ten days from the disappearance of the rash.

Typhus Fever.

In addition to the group treatment, the patient should drink 5 or 6 pints of water daily. During

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the second week alcohol will be required. Purgatives are apt to set up unmanageable diarrhœa, and must be replaced by enemata.

The sleeplessness is best treated by trional gr. xv., but care must be exercised when there is a tendency to heart failure.

Isolation: five weeks.

Trench Fever.

The group treatment should suffice, but it is an advantage to give an initial dose of 15 grains of quinine in brandy, together with a purge. If the pain in the legs is very severe, 10 to 15 minims of nepenthe should be added to each dose of the mixture. During convalescence, a pill containing iron, arsenic, quinine, and strychnine, is recommended.

Relapsing Fever.

This is treated on group lines. But lately, gratifying results have been obtained by the administration of salvarsan.

Remittent Fever.

A doubtful entity to be treated on group lines.

Chicken-Pox.

Very little medicine of any sort is required; but the patient must keep in bed as long as any unbroken vesicles remain. To avoid pitting, it is as well to anoint the face with carbolised oil 1 in 10.

Isolate till a week after every scab has fallen off.

Typhoid Fever.

Treatment is by diet rather than by drugs, for the old intestinal antiseptics, salol, guaiacum, and others, seemed to be of very little service. Possibly

the recently introduced iodo-ricinoleate of calcium may prove valuable. One to three tabloids should be given three times a day in water. At one time dilute hydrochloric acid was thought beneficial, but it probably makes no difference. The stand-by is a milk diet; but it is often advantageous to add some lactalbumen or citrate of soda to the milk, and if it pass undigested, with the production of offensive stools, some of it must be peptonised or Benger's Food substituted for it. Some physicians declare that patients can take even heavy food with impunity; but few seem inclined to follow this counsel. There is a *via media*, however, and probably a little starchy food, such as arrowroot, is of advantage. Beef-tea is better avoided, for it increases the diarrhœa. A week after the temperature has become normal, custard, light milk-puddings, and a little steamed fish, may usually be given, and an ordinary diet gradually reverted to. Stimulants are not required before the third week, but they can be rarely dispensed with then.

Complications require the following treatment: Constipation, a soap enema; diarrhœa, salicylate of bismuth and opium, together with reduction in the quantity of milk; tympanites, a starch enema with $\frac{1}{2}$ ounce of turpentine; melæna (which by no means necessarily indicates perforation), tr. hamamelis ℥v. every hour, and perhaps Leiter's cold coil to the abdomen. Bright blood with an increased pulse rate is very suspicious of perforation, and an operation may be called for.

In convalescence, iron and quinine are indicated. The patient ought to be fit to go out a fortnight after the temperature has become normal; but he is still infectious. Isolation is necessary till four weeks after defervescence; or longer if he is a "carrier."

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Small-Pox.

Very little treatment is required beyond that of the group, but tepid sponging must be practised daily, and the linen must be changed frequently. If the pain in the loins is severe, phenazone should be given, opium being better avoided, whether for this or for sleeplessness. For the latter, bromide of potassium in 20-grain doses is the safest. To prevent pitting, the face and wrists should be painted with flexible collodion; but a red blind is said to assist by cutting off injurious rays (see Introduction).

Isolation must be kept up for a week after the last scab has fallen off.

Glandular Fever.

The group treatment suffices. The swollen glands should have hot flannels sprinkled with belladonna liniment applied to them.

Whooping-Cough.

The group treatment should be applied during the invasion period, modified as for eruptive fevers. When the paroxysms begin, the patient should take the following:

R	<i>Pot. Brom.</i>	..	..	..	..	ʒss.
	<i>Tr. Belladonnæ</i>	..	..	..	..	℥xv.
	<i>Oxymel. Scillæ</i>	..	..	..	..	ʒii.
	<i>Syr. Tolu.</i>	..	..	..	..	ʒiv.
	<i>Aq.</i>	..	..	..	..	ad ʒii.

M.

Two teaspoonfuls every four hours. For a child aged six years.

At the same time, he should have an antiseptic inhalation.

Special lamps are sold; but a wire tripod, supporting a paté pan, answers just as well. A teaspoonful of cyllin or cresoline should be put in the

pan, and a lighted nightlight placed under it for ten minutes at a time at frequent intervals.

Swabbing the throat with a solution of hydrochlorate of quinine, 1 grain to the ounce, is sometimes valuable; as also is a vaccine made from the *Micrococcus catarrhalis* and the Bordet-Gengou organism combined. Indeed, this sometimes aborts the attack. If the paroxysms are so severe as to appear dangerous, phenazone or phenacetin, or even a few whiffs of chloroform, may be employed in vigorous children; but none of these can be maintained for long. A more recent remedy, much extolled by Fletcher, consists of 3-minim doses of liq. adrenalin 1 in 1,000.

When the febrile period has passed off, the patient may get up; but he must remain in the same room for three weeks in all. After that he may go in the open air; but it is a mistake to let him out in the early period. At the same time, some cod-liver oil will do him good. To complete the cure there is nothing like a visit to the seaside, though motor-drives are not a bad substitute.

It is well to remember that long after he is cured he may whoop when he has nothing but an ordinary cold. This is due to automatic habit (see p. 5).

Isolation must be maintained for at least six weeks from the appearance of the whoop or for ten days after its continuous disappearance.

Complications: Lobular pneumonia, bronchitis, hernia.

Diphtheria.

The treatment begins with the administration of antitoxin. If seen the first day, the dose will be 1,500 to 2,000 units, with a second dose of half this quantity the next day if the membrane show no sign of resolution. For cases seen at a later date, 4,000

to 10,000 units will be required according to the severity of the case. Otherwise, the treatment may be that of the group. Stimulants are generally necessary.

Locally, boric acid lotion should be used as a mouth and nose wash, and the throat should be sprayed with thymol dissolved in water 1 in 2,000 or, better still, pyocyanase.

The usual time for the appearance of paralysis is eight to twelve days after apparent recovery, and when it occurs the patient must go back to bed for at least a week, and be given liq. strychninae and perchloride of iron. Later, massage and faradisation will be required (see p. 137).

Isolate for four weeks after convalescence, provided there be no albuminuria and no discharge from nose, ears, eyes, or throat. For adults this is usually three weeks; but carriers are not uncommon.

Complications: Albuminuria, paralysis, heart failure.

Rheumatic Fever.

This disease has little in common with other forms of rheumatism, and is now regarded as an infective fever.

The group treatment holds good, and there is little to add to it. The dose of sodii salicylat. should be, however, increased to 20 grains, and to prevent the production of salicism the same quantity of bicarbonate of soda should be given with it. Thus:

R	<i>Sodii Salicylat.</i>	..	..	..	℥iv.
	<i>Sodii Bicarb.</i>	..	..	..	℥iv.
	<i>Syr. Pruni Virgin.</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥vi.
	<i>M.</i>				

One tablespoonful to be taken every four hours in water.

When the temperature has fallen, the dose may be reduced to 10 grains. Vaccine treatment is still rather in the experimental stage.

Locally, the joints should be smeared with equal parts of methyl salicylate and olive oil, and then covered with cottonwool and a bandage. If a painless joint swelling persists, it should be painted with iodine and massaged.

After a second attack, or, perhaps, even after the first, it is as well to have the tonsils enucleated, as it is pretty clear that these organs form the channel of entry of the disease.

Complications: Endocarditis, chorea, hyperpyrexia.

Follicular Pharyngitis.

To begin with, from 3 to 5 grains of calomel, followed by a draught of *mist. sennæ co.*, should be given. The group treatment may then be proceeded with. The throat should be swabbed with peroxide of hydrogen (20 vols.), or, if very painful, steamed.

Isolation period, five days.

Glanders.

Mallein is more successful with horses than with human beings, and to get good results it may be necessary to repeat the injection every three days, a course which may incur the risk of anaphylaxis. In any case, the focus of infection must be cut out if within reach, while abscesses must be opened and treated antiseptically. Antiseptic nasal douches are also required. Internal treatment is not very successful, but the group treatment fulfils the indications. Lately, benzoate of soda has been recommended. Generous nourishment and good hygienic surroundings are essential.

Isolation must be continued as long as there is any discharge, and when the patient is fit to be moved, sea air is indicated.

Dengué Fever.

The group treatment will suffice for most cases, but if the pains are very severe, the dose of salicylate must be increased, or phenazone or phenacetin given. To clinch the cure, a complete change of air is required.

Acute Pneumonia.

This disease is now generally recognised to belong to the infective fevers.

The group treatment holds good. Any but very mild expectorants, such as syrup of tolu, which may be added to the group mixture, are contra-indicated until the advent of the stage of resolution. A poultice to the side still holds its own, though in feeble subjects it may be replaced by camphorated oil on flannel. For sleeplessness the best drug is chloralamide in 20-grain doses.

The great danger in this disease is heart failure, so that if the first sound is weak, and still more, if pendulum rhythm is present, the patient requires prompt treatment (see p. 107). But it is well to anticipate this complication in alcoholic patients or those with flabby muscles, and give the following medicine when the resolution stage is nearly over:

R	<i>Liq. Strychninæ</i>	..	..	..	ʒi.
	<i>Tr. Strophanthi</i>	..	..	..	ʒxxv.
	<i>Caffein Cit...</i>	..	..	..	ʒi.
	<i>Aq. . . . .</i>	..	..	..	ad ʒvi.

M.

One tablespoonful every four hours.

Several cases have now been recorded where an attack of pneumonia has been aborted by pneumococcal vaccine or by phylacogen.

The patient must be kept in bed a full week after he appears to be absolutely well.

Malta Fever.

The group treatment gives only temporary results, and salvarsan should be tried. Vaccine treatment with micrococcus melitensis is indicated in chronic cases.

Weil's Disease.

In addition to the group treatment, intestinal antiseptics such as guaiacol, β -naphthol, or salicylate of bismuth are indicated. Good results have been obtained recently from an intramuscular injection of calomel.

Yellow Fever.

At the outset, a full dose of calomel followed by Glauber's salt should be given, and the patient should have a mustard foot-bath and be placed between the blankets. The group medicine may then be given, as both bromides and salicylates are indicated. Should cradling not suffice for the hyperpyrexia, cold sponging must be applied at short intervals. Large quantities of liquid such as Vichy water or water containing 40 grains of pot. bicarb. to the pint are necessary. Apart from this, some authorities believe in starvation for the first two or three days, and in any case only scanty nourishment should be given; the best form consists of frequent small quantities of iced milk. Healthy surroundings are essential.

Ratbite Fever.

The general treatment is that of the group; but drugs have proved of very little benefit. Recently, neosalvarsan is said to have given good results.

Seven-Day Fever.

This is generally considered to be a variety of Dengué fever, and should be treated in the same way.

Sandfly Fever.

The group treatment suffices, as it includes acid aceto-salicylicum, which alone will cut short a mild attack.

THE MALARIAL GROUP

THE group includes Quotidian, Tertian, and Quartan Ague, Æstivo-Autumnal Fever, and Malignant Malarial Fever. In addition, many tropical diseases are modified by the presence of a malarial element, and must be treated with this point borne in mind.

On an attack commencing, the patient must get into bed between the blankets. He is then given 5 grains of pil. hydrarg. c. colocynth., followed by 5 grains or more of phenacetin. Quinine should not be ordered till the sweating stage sets in, when 15 grains are given in solution; thenceforward, the dose is 5 grains every four hours till convalescence has begun, when 2 grains are administered three times a day for a month in conjunction with iron and arsenic. In dangerous cases 5 to 10 grains of a solution of the hydrochloride may be injected intramuscularly or *per rectum*. Patients who cannot tolerate quinine, even in small doses, without getting cinchonism, should be ordered arsenic, or, failing that, methylene blue; while those who get no benefit from quinine or arsenic should receive salvarsan injections. When fit, the patient should be sent to a hilly country. The enlarged spleen is best treated by X rays.

Malignant Malarial Fever.

The best treatment is by intravenous injections of salvarsan or, if that is not available, of quinine. Stimulants will be required.

THE RHEUMATIC GROUP

THE group includes Muscular Rheumatism wherever situated, Chronic Articular Rheumatism, Rheumatic Tonsillitis, and Iritis, Erythema Nodosum, and, with reservations, Gout and Rheumatoid Arthritis.

The group treatment, internally, is by iodide, bromide, and acetate of potassium and salicylates; externally by liniments, paints, massage, and, in the chronic stage, radiant heat, ionisation, and baths.

The following is a good all-round mixture:

R	Pot. Brom.	..	..	..	..	ʒiiss.
	Acid. Acetosalicyl.	..	..	..	..	ʒii.
	Mucil.	..	..	..	..	q.s.
	Aq. Camph.	..	..	..	..	ad ʒvi.

M.

One tablespoonful every four hours.

Muscular Rheumatism.

Some conditions formerly known under this name are now termed fibrositis; but, properly speaking, the latter word ought to be confined to cases of inflamed fibrous tissue, such as that of the ligaments or tendons, leaving muscular rheumatism to those in which the sarcois elements alone are involved (as shown by pain on muscular contraction that is too slight to drag upon attachments). There are cases, however, where the two conditions are combined. Fibrositis is much more liable to become chronic than the muscle-element form of rheumatism.

The writer has found the bromides more effective

for the purely muscular form, and the iodides for the fibrous, while salicylates are of value in both.

The patient seized with muscular rheumatism should in the acute stage keep the part at rest, apply hot fomentations sprinkled with lin. belladonnæ to it.

When the acuteness of the pain has worn off, the following liniment should be well rubbed in and passive exercises be begun:

R	<i>Chloroformi Pur.</i>	..	..	..	ʒiii.
	<i>Methyl Salicyl.</i>	..	..	..	ʒi.
	<i>Lin. Belladonnæ</i>	..	..	..	ad ʒiii.

M.

Fiat Linim.

A great deal of nonsense has been written about exercises in the treatment of rheumatic conditions; the gist of the matter is that in the acutely painful stage they are injurious and when this has passed, they are highly beneficial.

When pain is practically confined to that produced by movement, and the stiffness is great, salicylate ionisation followed by radiant heat should be ordered, together with massage and such exercises as will bring into action all the muscles involved. Turkish baths—and especially the cabinet form, from which the patient can get straight into bed—are of great service in all stages as a preliminary to massage.

Lumbago.

The treatment of the ordinary form is that of muscular rheumatism. The writer would like, however, to endorse the view that there is such a thing as a traumatic form.

TRAUMATIC LUMBAGO.—In this the victim is seized with lightning suddenness and usually when trying to straighten himself after stooping. This suddenness is absolutely inconsistent with rheu-

matism as a cause, and the writer's explanation is that a slight displacement of a tendon or even a subluxation of a vertebra has taken place. In confirmation of this, he has frequently found that a simultaneous movement of flexion and rotation of the spinal column will produce equally sudden improvement, so that nothing but a transient soreness remains.

Rheumatic Tonsillitis.

The group treatment is applicable internally. Locally a pledget of wet lint with some acetosalicylic acid in powder sprinkled upon it should be rubbed over the tonsils three or four times a day.

Erythema Nodosum.

The group treatment suffices, the swellings being painted with tincture of perchloride of iron. In convalescence the patient should have a course of iron internally.

Chronic Articular Rheumatism.

The group treatment holds good, but it is often advantageous to give guaiacol too, a couple of 5-grain tablets of camphorate of guaiacol being taken three times a day. The joints should be painted with iodine, and if necessary supported by a bandage. The cabinet Turkish bath is of great service, and it may be alternated with a pine bath, which is made by adding to 30 gallons of hot water 3 ounces of extr. pini sylvestris. Later, the baths of Droitwich, Bath, Buxton, or the mud baths of Kisch, will be found beneficial, as also will radiant heat and ionisation. A further help will be found in galvanism, a weak current of which should be applied to the affected part for ten minutes daily.

Gonorrhœal Rheumatism.

Autogenous gonorrhœal vaccines are now largely and successfully employed. Whether used or not, it is desirable to treat the posterior urethra with protargol. A 1 per cent. solution should be injected three times a day, either through a special catheter or through a gum elastic female catheter. The group treatment, though of some service, is not very satisfactory, and, in general, guaiacol is better. Phenazone is useful for the pain. Hydropathic treatment is necessary later.

Rheumatoid Arthritis.

This disease has many points in common with the group, whether or not it is pathologically related to it, and is therefore placed in it. In the writer's opinion, if it were recognised at the onset and the patient were kept in bed for six weeks, there would not be so many rheumatoid wrecks. The treatment by autogenous vaccine has opened a new era; but it should be applied early. It must be admitted, however, that it not unfrequently fails, as also does the extraction of all the teeth for what some jump at as the cause—pyorrhœa alveolaris. Both of these plans do marvels in some subjects, and both are utter failures in others. Now, there can be only one answer to this riddle, and that is that there is more than one cause for the disease. The encouragement from wholesale tooth extraction is not great enough to warrant such advice being given to those whose teeth promise otherwise many years of usefulness; and extraction is far from being the only possible cure for pyorrhœa (see p. 41).

Of internal treatment, which, though it may not cure, yet keeps the disease fairly stationary, one of the best is guaiacol, given as for chronic articular

rheumatism (see p. 87). But even salicylates have their uses. They certainly ease the pain in some cases, if not with the certainty that may be expected in real rheumatism, and there is on record a patient who, after a bad attack of salicin poisoning, was thereafter never troubled again by her long-standing rheumatoid arthritis. One suspects, however, that the case might have been one of chronic articular rheumatism. The hydropathic treatment is the same as that for the ordinary articular form of rheumatism, but the great point wherein it differs is in the diet. The patient should live well, taking plenty of cream and a good allowance of meat, and even red wine such as Burgundy; starchy food should be partaken of sparingly. Rest is important, and twelve out of the twenty-four hours should be spent recumbent. From time to time a tonic will be required, thus:

R	<i>Ferr. et Quinin. Cit.</i>	..	..	..	ʒii.
	<i>Liq. Arsenicalis</i>	..	..	..	ʒss.
	<i>Glycerin.</i>	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day after meals.

Rheumatic Periostitis.

The group treatment is sufficient, but painting with iodine is indicated, liniments being inapplicable.

Rheumatic Iritis.

The internal group treatment will suffice. Locally, atropin is instilled and warmth is applied. Before doing this, however, it is necessary to make sure that the case is not one of glaucoma, a disease in which the use of atropin is disastrous. A good rule is not to use atropin if the pupil is already dilated.

An attempt has been made lately to deny the existence of rheumatic iritis; and if the writer is not convinced, it is because he has seen many cases, in which syphilis could be excluded, cured by salicylates.

Gout.

The writer has some misgivings about including gout in this group; but, after all, the pathology of gout may be said to be still in the melting-pot.

With some modifications, the treatment is that of the group.

Acute Gout.

To begin with, the patient should take a pill of calomel gr. iii., made up to five with pil. colocynth. co. Every morning he should have a teaspoonful of Glauber's salt in a tumbler of hot water. The group mixture requires the addition of vin. colchici \bar{z} ss., or atophan given concurrently with it. The foot or hand should be immersed night and morning for ten minutes at a time in hot water, in which some soda has been dissolved, and on removal it should be swathed in lint which has been soaked in a hot solution of salicylate of soda (\bar{z} ii. to \bar{z} x.). This is then covered with cottonwool, oiled silk, and a flannel bandage. The patient should take copious drinks of Vichy or distilled water, and his diet should consist principally of milk and lithia, milk-puddings, and a little fish. Veal or mutton broth is better than beef-tea; but even broth, as well as tea, coffee, and cocoa, should be partaken of only sparingly, while stimulants must be totally excluded.

In the intervals the diet is that of chronic gout. The Glauber's salt should be taken once a week, a Turkish bath as often, and golf or some moderate

exercise taken regularly. Motoring is advantageous, because it favours metabolism; and the writer, with the same idea, has recently obtained prolongation of the intervals by two daily doses of thyroïdin gr. $\frac{1}{2}$; it is indicated chiefly in stout persons.

Chronic Gout.

The internal group treatment should be reinforced by an intestinal antiseptic:

R	<i>Pot. Iod.</i>	..	..	..	̄i.
	<i>Sodii Salicyl.</i>	..	..	..	̄ii.
	<i>Syr. Prun. Virgin.</i>	..	..	..	̄i.
	<i>Mist. Guaiaci</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful three times a day.

Dr. A. Haig's prescription is:

R	<i>Ammon. Phosphat.</i>	..	..	..	̄ii.
	<i>Pot. Cit.</i>	..	..	..	gr. xx.
	<i>Aq. Anisi</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful three times a day.

Atophan, whether what is alleged of it is true or not, often gives good results. Ten grains should be given three times a day in a wineglassful of water. A weekly dose of Glauber's salt is to be taken every morning. The joints should be anointed with methyl salicylate in olive oil 1 to 3, while painful; but when merely stiff, iodine paint is to be preferred. The hydropathic and physical treatment is that of chronic articular rheumatism (p. 87).

The diet is of great importance. To be avoided are all internal parts of an animal except tripe, all meat or fish of a fatty character, such as pork, goose, duck, salmon, eels, mackerel; all crustaceans and bivalves except oysters. Sugar should be replaced

by saccharin; and tea, coffee, cocoa, and soups made with meat stock, partaken of sparingly. A little good whisky or a white wine, such as Graves', Chablis, or Berncastler, may be taken; but red wines and malt liquors are forbidden. Rough cider is unobjectionable.

"Suppressed Gout."

It required some courage to write this heading, for such a diagnosis is supposed to be the last resource of an ignoramus; but this is only a temporary swing-back of the pendulum. It is common knowledge that a careless-living gouty patient does not feel so well if the interval is longer than usual. To a man who begged that his overdue attack of acute gout might be brought on, the writer, knowing that a local injury will effect this, half-jokingly suggested that he might drop a 4-pound dumb-bell on his toe. He jumped at the advice, and, having followed it, was rewarded by a sharp attack which he said left him perfectly fit for many months! Patients who object to this rather drastic treatment should have a course of iodides and colchicum and be more particular in their mode of living.

THE CARDIAC GROUP

THIS group includes Dilatation of the Heart, Mitral Regurgitation, and, with some qualification, Aortic Regurgitation and Aortic Stenosis.

The group treatment during the acute stage is by rest. Later, graduated exercises and Nauheim treatment are indicated. Digitalis should not be given without due consideration.

Since the work of the heart is vital to the organism, complete rest is out of the question. All that can be done is to impose upon it a minimum of work. The recumbent position is one method of achieving this; but unfortunately, the patient may not be able to lie down, and then we are reduced to taking what advantage we can from the lessened resistance to the blood-flow consequent upon the action of the warm bed upon the skin. In addition, nitrites may sometimes be given. But even after he gets about, the heart patient requires ten hours a day in bed, and is all the better for lying down for an hour after lunch.

Exercises come in after the acute stage has passed. They are of great value, provided the ventricle is fairly sound and there is no atheroma. The essential in the Schott-Nauheim exercises is that the movements be slow and regular, and that the resistance applied be not sufficient to cause tremor of the limbs or shortness of breath. He should be erect, and there should be a pause between any two of the seventeen exercises embodied in the system. Oertel's

exercises consist in making the patient walk up inclines of gradually increasing gradient. It is not easy to find the right gradients; but the writer reflected that it would come to much the same thing if, without altering the gradient, the time taken in mounting it were gradually accelerated. The patient is told, therefore, to note how long it takes him to mount two flights of stairs comfortably, and, repeating the exercise perhaps ten times a day, to shorten very gradually the time taken for the task, without quickening the breathing. The special feature about the Nauheim bath is that the water is charged with carbonic acid gas. It can be imitated by using the Zana pads, which have the property of disengaging this gas.

In directing a heart patient as to his mode of living, it is of great importance to make him take a cheerful view of his future. In general he should be told that, provided he observe some simple precautions, his is as good a "life" as anyone else's. The rules to be followed are these:

THE TWELVE COMMANDMENTS FOR A HEART CASE.

1. Ten hours' bed and one hour's rest at midday.
2. No heavy meals. Avoid leguminous and root vegetables (except floury potatoes), bottled drinks, and, in general, anything that produces flatulence. Eat very little salt.
3. Whatever exercise is taken, it must be stopped before the breathing gets quickened enough to make talking irksome.
4. Smoking must be limited to four cigarettes a day.
5. The bowels must be kept regular, and in all there should be about ten actions weekly.
6. The urine must not be allowed to remain red

and concentrated for long. To check this, 10 grains of diuretin should be taken twice a week.

7. The feet and hands must not be allowed to become cold, and the underclothing, which must be of wool, should be such as will keep the body warm without being so hot as to provoke perspiration. Provision, too, must be made against getting wet.

8. The patient must avoid stooping, straining, jerky movements, and excitement.

9. He must have occupation, even if it be only a hobby.

10. Cheerful society, amusements, and nine-hole golf, should be indulged in and solitary moping avoided.

11. An effervescent bath should be taken once or twice a week.

12. The gradient exercises already described should be practised six times a day through life.

Dilatation of the Heart.

In the acute form the patient must be kept in bed until the normal præcordial dulness is approached. The diet should be of a light solid character, with a sparing allowance of liquids, which, however, may include a little whisky.

Digitalis is here best combined with strychnine:

R	<i>Tr. Digitalis</i>	..	..	..	̄i.
	<i>Tr. Nuc. Vom.</i>	..	..	..	̄ii.
	<i>Syr. Aurant.</i>	..	..	..	̄ss.
	<i>Aq.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful every four hours.

After about ten days, *tr. ferri perchlor.* may be added to the prescription with advantage, and, in late convalescence, resistance exercises started. Sleeplessness has a retarding effect upon recovery. Chloral and morphia are contra-indicated, and if

bromide is ineffective, 15 or 20 grains of sulphonal should be given in something thick three hours before it is meant to act; or alternatively, a drachm of paraldehyde; this acts quickly, but patients grumble at the nasty taste it leaves in the mouth.

Mitral Regurgitation.

It is in this condition that digitalis proves so very valuable. Generally speaking, it is best given combined with iron. Thus:

R	<i>Tr. Ferri Perchlor.</i>	..	..	..	ʒii.
	<i>Tr. Digitalis</i>	..	..	..	ʒi.
	<i>Glycerin.</i>	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	ad ʒvi.
	<i>M.</i>				

One tablespoonful three times a day.

But, not uncommonly, the conjunctivæ are yellowish, and iron is not then well borne, the following combination being preferable:

R	<i>Tr. Digitalis</i>	..	..	..	ʒi.
	<i>Sodii Bicarb.</i>	..	..	..	ʒiii.
	<i>Aq. Menth. Pip.</i>	..	..	..	ad ʒvi.
	<i>M.</i>				

One tablespoonful three times a day.

If anasarca begins to show itself, a morning dose of acid tartrate of potash gr. xxx., mixed with twice its bulk of marmalade, should be given. Diuretics in combination are of more value than a strong dose of a single one. Thus:

R	<i>Tr. Digitalis</i>	..	..	..	ʒi.
	<i>Tr. Scillæ</i>	..	..	..	ʒiii.
	<i>Succ. Scoparii</i>	..	..	..	ʒi.
	<i>Caffein Cit...</i>	..	..	..	ʒi.
	<i>Sp. Juniperi</i>	..	..	..	ʒiii.
	<i>Aq.</i>	..	..	..	ad ʒvi.
	<i>M.</i>				

One tablespoonful every four hours.

Liquids should be reduced and salt omitted from the dietary. In advanced cases of general dropsy, Southey's tubes should be inserted into the skin of the legs and left there.

If the right ventricle is greatly dilated, and there are marked dyspnœa and cyanosis, general venesection must be resorted to without delay. In most cases 10 ounces may be drawn from the median basilic vein. Hydrothorax sometimes comes on with great suddenness, and needs prompt paracentesis, especially when, owing to the fluid being in the left chest, the heart is pushed over to the right.

Digitalis has sometimes to be given over a long period in mitral cases; but it must be remembered that this drug is to some extent cumulative, and may lead to arrhythmia or delirium cordis. It is therefore wiser to suspend its use, say on alternate Sundays, as that is easy to remember. Further, digitalis is not very safe in cases where the heart is fatty or the arteries atheromatous. Where the tension is very high it should be combined with a drug having an opposite effect, such as nitrite of soda or iodide of potassium.

Mitral Stenosis.

Digitalis is indicated only if the heart's action is irregular. Iron and nux vomica are the most generally serviceable drugs:

R	<i>Tr. Ferri Perchlor.</i>	..	..	ʒii.
	<i>Tr. Nuc. Vom.</i>	..	..	ʒii.
	<i>Syr. Prun. Virgin.</i>	..	..	ʒi.
	<i>Aq.</i>	..	..	ad ʒvi.

M.

One tablespoonful three times a day.

Attacks of cardiac oppression set in occasionally, and should be met by a tablet of nitro-glycerine.

Aortic Regurgitation.

Digitalis is inadmissible here in the early stages; but it becomes useful later when the right ventricle is involved or when compensation is failing. Many aortic cases are of syphilitic origin, and benefit by iodide of potassium combined with a tonic. Thus:

R	Pot. Iod.	..	..	..	..	ʒi.
	Syr. Aurant.	..	..	..	..	ʒi.
	Inf. Calumbæ	..	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day.

If the kidneys are not acting sufficiently, 10 or 15 grains of diuretin in warm water should be given.

Aortic Stenosis.

Digitalis is better avoided here. Syphilis is a factor in the causation, so that the prescription for aortic regurgitation is suitable. There is a good deal of anæmia in most cases, and iron is indicated:

R	Pot. Iod.	..	..	..	..	ʒi.
	Syr. Ferri Iod.	..	..	..	..	ʒi.
	Infus. Quassiæ	..	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day.

Attacks of præcordial pain and oppression are best met by nitrites, and, owing to the longer duration of its effects, especially by erythrol tetranitrate 1 grain every three hours.

Fatty Degeneration of the Heart.

Digitalis is contra-indicated, and little can be done by drugs. A good deal, however, can be effected by very carefully graduated exercises. The muscles of the unemployed blacksmith undergo a similar degeneration; but they gradually recover their

power when work is resumed, and there is no reason why the heart should not do the same. The writer has found his stair exercise of great service in these cases. On the other hand, if the patient never walks except on the level and leads the life of a valetudinarian, he will not last long.

Acute Endocarditis.

The most complete rest is essential, and the patient for six weeks must hardly raise his head from the pillow. At the beginning, a blister must be painted over the præcordium, though probably our fore-runners' treatment by leeches would be better still. An ice-bag is sometimes used, but it is not quite safe in weakly persons. An aperient should be given at first; but afterwards, it is better to use enemata. If the pain and præcordial distress are great, a mixture containing bromide and opium is indicated; otherwise, quinine is preferable. Salicylates are required if the pain in the joints persist. The rest in bed must be followed by a long period of recumbency on the sofa; but to avoid the weakening effect, systematic massage and, later, passive exercises must be enjoined. The order to rest may be relaxed when standing involves no great rise in the pulse or breathing rate. Normally, the pulse in the recumbent position is from eight to fifteen beats lower than in the erect. In the convalescent stage strychnine will be required.

Septic Endocarditis.

This is hardly a disease in itself; it is rather a form of septicæmia with heart complication, and should be so treated. Good results have been obtained lately from the intravenous injection of 300 c.c. of normal saline, followed by one of 40 c.c. of eusol.

THE HIGH TENSION GROUP

THIS includes Aneurysm, Arterio-Sclerosis, Hypertrophy of the Heart, Lead-Poisoning, Cyanosis, Melancholia, Migraine, Embolism, and Uræmia. For Cirrhosis of Kidney, see p. 63.

The general conditions which reduce high tension are: diminished intake of liquids, the recumbent position, hot baths, hot drink, hot air (including the warmth of the bed), and sleep. The drugs which have this effect are the nitrites, and to a less extent the nitrates, the iodides, chloral, mistletoe, aconite, and cannabis indica. High-frequency and static currents and radiant heat also reduce it.

The problem of dealing with this condition is a difficult one; for, when the high tension is due to inelastic arteries, to sacculated arteries (as in aneurysm), or to viscosity of the blood, the increase is simply the result of an effort of the heart to counterbalance the impediment to the circulation, and an attempt to oppose this effort might do more harm than good. In general one has to choose between two evils. Thus, in arterio-sclerosis and cirrhosis of the kidney it must be reduced if cerebral hæmorrhage seems impending; in aneurysm, the evil of pressure upon the sac must be weighed against the chance of gangrene from inadequate circulation; in hypertrophy of the heart, which, however, is a means of producing the high tension rather than a condition associated with it, interference might produce fatty degeneration of the heart, which is much worse than the

hypertrophy; while in cyanosis the high tension is salutary because of the resistance offered by the viscosity of the blood.

There is little doubt, however, that it is nearly always advisable to reduce the tension when this is due to spasm of the arterioles, as in angina pectoris; though even there the coronary sclerosis which usually accompanies it must be considered, since low tension might increase the liability to fatty degeneration of the heart muscle.

Internal Aneurysm.

As soon as the diagnosis is made, the patient must remain recumbent for six weeks and observe the general rules for the reduction of arterial tension. At the end of that time, if warranted by the improvement that has taken place, two whole days' recumbency a week will suffice. Iodide of potassium in large doses is indicated for many reasons; but it is weakening, and, for that reason, should be combined with a tonic:

R	Pot. Iod.	..	..	..	..	ʒiiss.
	Syr. Zingib.	)	..	..	..	āā ʒi.
	Tr. Cinchonæ	)	..	..	..	ad ʒvi.
	Aq. Flor. Aurant.		..	..

M.

One tablespoonful three times a day.

To help the deposition of fibrinous laminae, two 5-grain tablets of lactate of calcium should be given twice a day (omitting every fourth week). Pain and dyspnoea demand an occasional hypodermic injection of morphia and atropin, though for slight attacks phenacetin may suffice. For attacks of angina, the nitrites are the remedy. The patient must avoid all sudden exertion and excitement, and must eat little and often; but he must fight as long as he can

against chronic invalidism. Injection of gelatin and surgical measures in general seem to be of doubtful value.

Angina Pectoris.

The treatment is by nitrites in some form, and usually by nitro-glycerine in $\frac{1}{100}$ -grain chocolate tablets. Here it may be mentioned that if any basis other than chocolate be used for manufacturing nitrite tablets an explosion may result. The nitrite of amyl is equally effective, but the glass on the handkerchief is a disadvantage, as it sometimes remains on the handkerchief and scratches the face when used later. For cases where the attack is prolonged, erythrol tetranitrate is to be preferred. The action of all nitrites can be reinforced by the hypodermic injection of atropin. Locally, it is often advantageous to apply a mustard leaf to the præcordium.

It has been recommended recently that during the attack the patient should hold on to a bar. No reason was given, but there may be something in it; for, as in eliciting a knee-jerk (for which relaxed muscle is essential), reinforcement is obtained by bringing into action another set of muscles, so, by putting the arm muscles into action, the spasm of the arterial muscle may be relaxed. At all events it should have a trial.

Between the attacks the diet must be light and digestible and the meals taken little and often. Flatulence is often a factor in bringing on an attack, probably by some displacement of the heart. Tea and tobacco are both bad. A course of iodide of potassium over a long period certainly seems to prolong the intervals and lessen the severity of the attack. This is what would be expected, for this drug not only reduces the blood-pressure, but may

have a favourable influence upon the coronary fibrosis. Diuretin in 10-grain doses three times a day has recently been recommended. Patients whose life has become a burden to them should be kept in bed for six weeks, for this sometimes effects, if not a cure, at least a long period of freedom from an attack.

Cyanosis.

The treatment depends entirely upon the cause; but iodide of potassium is often a useful adjuvant. Oxygen inhalation is indicated for bad cases.

Migraine.

The group treatment is indicated between the attacks only. In addition a tablet of nitro-glycerine is to be taken night and morning with this mixture as ordered:

R	<i>Liq. Arsen.</i>	..	..	..	℥ss.
	<i>Tr. Nucis Vom.</i>	..	..	..	℥ii.
	<i>Syr. Zingiberis</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥vi.

M.

One tablespoonful three times a day.

The diet should be purin-free, so that meat, fowl, fish, tea, coffee, cocoa, peas, and beans should be avoided or partaken of sparingly.

When the attack begins, the patient should lie down in a darkened room with a towel tied tightly round the head and the feet kept warm. The medicinal treatment begins with a dose of effervescent saline; an hour after, the following mixture is taken:

R	<i>Phenazon.</i>	..	..	..	℥iiss.
	<i>Tr. Gelsemii</i>	..	..	..	℥ii.
	<i>Pot. Brom.</i>	..	..	..	℥iii.
	<i>Aq. Camph.</i>	..	..	..	ad ℥vi.

M.

One tablespoonful every two hours till relieved.

In gouty patients, atophan gr. xv. every three hours sometimes succeeds better.

Embolism.

The principal seats of embolism are the lung, the kidney, the spleen, the mesentery, the brain, and the arteria centralis retinae.

The treatment is by prolonged and complete rest and the employment of means to reduce the blood-pressure.

The most generally useful drug is iodide of potassium; but the bromide, by subduing restlessness and, in the case of the brain, lessening the supply of blood there, is also valuable. A combination may be given thus:

R	<i>Pot. Iod.</i>	..	..	..	..	ʒi.
	<i>Pot. Brom.</i>	..	..	..	..	ʒii.
	<i>Aq. Anis.</i>	..	..	..	..	ad ʒvi.
						M.

One tablespoonful every four hours.

The diet should be light, meat and stimulants being excluded.

It must be confessed, however, that in the case of emboli arising from vegetations on the valves we are between the devil and the deep sea. On the one hand, rest will tend to increase the deposition of fibrin; but movement, while lessening the risk of this, may do what is worse, dislodge it. On the whole, however, the treatment given above is sound.

For Arterio-Sclerosis, see p. 65; Cirrhosis, p. 63; Lead-Poisoning, p. 170.

THE LOW TENSION GROUP

THIS includes Anæmia, Addison's Disease, Aortic Insufficiency, Diabetes, Dilatation of the Heart, Mitral Insufficiency, Hæmorrhage, Syncope, Shock, and all asthenic conditions.

The group treatment consists in raising the arterial tension. The general conditions to be adopted for this purpose are a nitrogenous diet with abundant liquid, and a cool atmosphere and clothing. The drugs which have this effect are ergot, adrenalin, caffeine, camphor, pituitrin, barium chloride, digitalis, and strychnine.

As in the previous group, care and judgment must be exercised before interfering with the tension. For instance, hæmorrhage would certainly increase if the pressure were raised; and dilatation of the heart would become worse unless the drug employed concurrently strengthened the ventricular contractions, as does digitalis.

Addison's Disease.

The most useful drugs here are strychnine and digitalis; arsenic is dangerous and adrenalin inert. Indeed, the failure of adrenalin to raise the blood-pressure is made use of in diagnosis, and is known as Grünbaum's test.

It must be confessed, however, that no satisfactory treatment has yet been devised. The diet must be nourishing and stimulating, the clothing of wool, and recumbency must be enjoined for a great part of the

day. This is necessary because, otherwise, the weak blood-pressure would increase the tendency to syncopal attacks.

A useful mixture is the following:

R	<i>Tr. Digitalis</i>	..	..	..	̄jī.
	<i>Tr. Nuc. Vom.</i>		}	..	..
	<i>Tr. Ferr. Perchlor.</i>				
	<i>Syr. Aurant.</i>	..	..	..	̄jī.
	<i>Aq.</i>	..	..	..	ad ̄vi.
					<i>M.</i>

One tablespoonful three times a day.

But there are great idiosyncrasies in this disease; for while in some individuals the following are beneficial, in others they have not the smallest effect for good. In this category are thyroidin, glycerophosphates, phosphorus, lecithin, and the removal of a tuberculous suprarenal body.

Complications to be watched for are vomiting, diarrhœa, and heart failure.

In the majority of the diseases included under this heading the treatment is governed by conditions of more importance than blood-pressure.

THE HEART FAILURE GROUP

THIS group includes Heart Failure, Concussion of the Brain, and Shock. The treatment is practically identical. The patient must be recumbent, with the head at a lower level than the trunk, the clothing loosened, and the windows opened. A mustard leaf to the heart, hot-water bottles to the feet, and ammonia to the nostrils, are indicated. These failing, a hypodermic of 1 c.c. of pituitrin, gr. $\frac{1}{2}$ to $\frac{3}{4}$ of pilocarpin, or ℥iii. of liq. strychnin., may be given. Ether is of doubtful value, for if it do not rouse the patient, it will make him worse. Faradisation, too, may do harm unless the stimulus is intermitted synchronously with the diastole. Nitrite of amyl is often of service, as also is an enema of hot coffee and brandy. A recent remedy is the inhalation of oxygen gas bubbled through absolute alcohol. Finally, saline infusion given *per rectum*, subcutaneously, or intravenously, is a valuable resource, and may be given concurrently with other treatment. In otherwise hopeless cases, life has been saved by heart massage through an incision in the epigastrium. The prophylactic treatment of heart failure in cases of auricular flutter or fibrillation consists in large doses of digitalis.

Shock from lightning or the electric current must be treated by artificial respiration.

THE HYPOTHYROID GROUP

THIS includes Myxœdema, Cretinism, Minor Hypothyroidism, some forms of Thyroid Instability, and the abstemious form of Obesity.

The group treatment consists in giving thyroid gland in some form with or without the addition of iodine, which has the power of increasing the secretion of the gland.

Myxœdema.

Half a grain of dried thyroid should be given every night during the first week, 1 grain at night during the second week, and thenceforth 2 grains until the symptoms disappear. For the rest of the patient's life he must take 1 grain or $1\frac{1}{2}$ grains six nights a week.

Cretinism.

The thyroid treatment applies equally to this disease, the dose of the dried gland being about one-half that given for myxœdema. If the patient is of growing age, he should lie down a great deal, so as to prevent curvatures of the limbs.

Minor Hypothyroidism.

This condition, though rarely recognised, is not uncommon. The patient is usually short, stout, and dull, with cold extremities. The treatment is that of myxœdema, though the doses are smaller.

“ Abstemious Obesity.”

The writer suggests this term for the obesity of small eaters. Whether it is a form of hypothyroidism or not, the fact remains that thyroidin has often a remarkable effect in weight reduction. A patient of the writer in whom this form of obesity was accompanied by large fatty deposits about the heart was reduced from 14 to 11 stone in six months without dieting, while the heart deposits practically disappeared, and the walking power increased from half a mile to twelve miles a day.

Whatever disease thyroid gland is given for, the effect upon the heart must be watched; for while some bear it perfectly well, others sometimes develop rather serious symptoms. It is a good plan to direct the patient to omit every alternate dose if faintness or palpitation supervene.

THE HYPERTHYROID GROUP

THE outstanding member of this group is Exophthalmic Goitre; but some forms of Neurasthenia and of Soldier's Heart belong to it.

The treatment of the group lies in the removal or partial destruction of the thyroid gland by operation or X rays, or in the administration of the dried milk of dethyroidised goats or sheep. A convenient form of that from goat's milk is rodagen, which, in doses of $\frac{1}{2}$ drachm three times a day, has given some good results. Faradisation is of very doubtful value, but thymus gland substance is very promising, especially when given thus:

R *Tab. Thymoglandular.* gr. i.
Tab. Suprarenal. (B.P.C.) gr. ii.
One of each to be taken simultaneously.

Exophthalmic Goitre.

An improvement in the general health should be effected by giving good food with abundance of milk and insisting on two hours' rest in the middle of the day. The Weir Mitchell treatment costs about £100, and, except as regards the isolation, which may lead to too much introspection, is distinctly helpful for those who can afford it.

Exercise must stop short at the point where it increases the pulse-rate abnormally. Arsenic and belladonna are often useful:

R *Liq. Arsen.* $\bar{5}$ ss.
Tr. Bellad. $\bar{5}$ i.
Syr. Prun. Virgin. $\bar{3}$ i.
Aq. *ad* $\bar{3}$ vi.
M.

One tablespoonful three times a day after meals.

The rest of the treatment is opportunist. Thus, for the tremors, 3-minim doses of liq. hyoscin. hydrobrom. (1 in 1,000); for the palpitation, a belladonna plaster to the præcordium, or, if the pulse is very irritable, the addition of tr. strophanthi to the above mixture; for diarrhœa, rest and a milk diet, together with an astringent mixture containing opium; for vomiting, lavage and the hypodermic injection of morphia.

Thyroid Instability.

This condition, which was first described by Léopold Lévi, is a combination in varying proportions of hypo- with hyper-thyroidism; the treatment, therefore, is rather complicated, for it depends upon which form preponderates. The aim should be to restore the balance. An allied condition termed "nervous cretinism" occurs sometimes in children.

THE TUBERCULOUS GROUP

THE group includes Tuberculosis of Lungs, Larynx, Pharynx, Kidneys, Peritoneum, Intestines, Bones, Joints, Skin, and elsewhere.

The group treatment consists in open air, the administration of tuberculin, and good nourishment. Children and young adults are all the better for cod-liver oil and malt, or alternatively the syrup of the hypophosphites in doses of a teaspoonful three times a day. Another useful drug is the carbonate of guaiacol, of which 10 to 20 grains may be given daily in cachet form.

The tuberculin in most general use is T.R. (New Tuberculin), and Sir Almroth Wright's method of using it in cases of localised tuberculosis is to sterilise the liquid by heating it for one hour at 60° C., and afterwards to dilute it with saline solution containing 0.25 per cent. of lysol. Of this liquid an initial dose corresponding to $\frac{1}{30000}$ milligramme of the dried substance is regarded as the maximum. Generally speaking, the dose will have to be repeated about every tenth day, but this depends upon the response as calculated by the opsonic curve. The bovine form of tuberculin is now considered not to differ essentially from the human form.

Opinions as regards the benefit of employing tuberculin in phthisis are very contradictory, and in some cases it is said to have done harm. It is rather significant that it has been given up at the Midhurst

Sanatorium. In any case, it must not be administered in the febrile stage. It has, however, been claimed that under its influence the tubercle bacillus disappeared more rapidly from the sputa, and that convalescence started earlier. But while reports are not very favourable in pulmonary cases, good results have been obtained with tubercle elsewhere, and in otherwise incurable cases it should certainly be tried. Tuberculin treatment in some form has probably a brilliant future, but as regards the lungs it is wiser to "wait and see."

THE OPEN-AIR TREATMENT.—At night this means having the windows wide open, though the patient should be protected from a direct current of air by screens, and care taken that the extremities are warm. In cold weather, a fire may be necessary; but, in general, additional bedclothes will suffice. In the daytime he should be in a revolving shelter, which, open on one side, is so turned as to catch all the sunshine. A bed may be placed in this, and he must keep there if the temperature is over 100·5. Otherwise it will suffice if he lie down an hour before and an hour after each meal. Exercise must not involve hurry or overstrain. The diet must include as much milk and fatty food as the patient can digest, care being taken not to press upon him so much food as to excite loathing. If there are signs of this, a temporary complete change of diet must be made, and quinine or strychnine must replace the guaiacol or hypophosphites.

Pulmonary Tuberculosis.

The group treatment applies with particular force; but inhalations are generally indicated. Dr. Lees' continuous method is largely practised. The instrument is a special form of respirator which is worn night and day, and upon it are sprinkled every hour

during the day and twice during the night from 6 to 8 drops of the following antiseptic:

R	<i>Creosoti</i>	}	āā	ḡii.
	<i>Acid. Carbol.</i>						
	<i>Sp. Chlorof.</i>						
	<i>Tr. Iodi</i>						
	<i>Sp. Etheris</i>	}	āā	ḡi.

M.

S.: *The Drops.*

The method has the further advantage that it lessens the risk of infecting others. It is, however, rather a source of worry to the patients, and it is sometimes difficult to get them to persevere with it.

The alternative is an oleaginous spray, such as the following:

R	<i>Menthol</i>	..	..	..	..	gr. v.
	<i>Ol. Pini</i>	..	..	..	..	℥v.
	<i>Eucalyptol.</i>	..	..	..	..	ḡss.
	<i>Parolein.</i>	..	..	..	..	ad ḡi.

M.

S.: *The Spray.*

To be used with an atomiser every two hours.

The cough can be kept under, provided the sputa are scanty, by the following:

R	<i>Vin. Ipecac.</i>	..	..	..	ḡiii.
	<i>Tr. Opii</i>	..	..	..	ḡiss.
	<i>Oxymel Scillæ</i>	..	..	..	ḡi.
	<i>Aq.</i>	..	..	..	ad ḡvi.

M.

One tablespoonful when the cough is troublesome.

The pastilles made of heroin and liquorice are also very serviceable, and have the advantage that they can be taken out of doors. Diarrhoea, which often arises from a habit of swallowing the sputa, especially in the case of children, is best met by salicylate of

bismuth with or without pulv. cretæ aromat. c. opio; but the diet must also be regulated. Atropin will relieve the night-sweats, but it is better avoided. The complication rarely occurs under the open-air treatment; but if it should, the patient's body should be sponged with water containing a little vinegar, followed by a good rubbing down. Good results have sometimes been obtained by artificial pneumothorax; but it is still rather in the experimental stage.

Tuberculous Glands.

It is very rarely that the tubercle bacillus is found in these, and there is no doubt that under this name are included a large number of inflamed glands that are not tuberculous at all. Still, Ritchie has obtained excellent results with tuberculin, and it may be tried if no doubt exist as to the nature of the infection. X-ray treatment by $\frac{1}{4}$ Sabouraud pastille once a week is also well spoken of. If excision is decided upon, it should be done before adhesions have formed, and at that stage other means are quite satisfactory, at least where the organism is not tuberculous. Probably five out of six cases are due to oral infection, and chiefly to carious teeth, though sometimes to tonsillary affections. Decayed teeth, therefore, must be stopped or extracted; and the tonsils, if affected, must be enucleated. After every meal, as well as night and morning, the mouth having been previously well cleaned with plenty of warm water, peroxide of hydrogen, 10 vols., must be vigorously used as a mouth-wash and gargle, while the enlarged gland should be rubbed with a preparation made by rubbing up a drachm of ext. bellad. in an ounce of glycerine. Internally, the group treatment together with cod-liver oil must be employed.

Tuberculous Abscess.

As regards internal and hygienic treatment, that given for the group applies. Locally, the abscess must be opened under strict antiseptic precautions, the contents evacuated, the walls scraped, and sequestra, if present, removed. A drachm of iodoform is then left in the cavity, and the wound sewn up without drainage. The incision for iliac abscess is made above the outer half of Poupart's ligament; for lumbar abscess, vertically along the outer border of the erector spinæ; for psoas abscess, over the seat of maximum fluctuation (which is usually above or below the inner half of Poupart's ligament) or in the loin through the quadratus lumborum. Should the abscess fill again, the treatment must be repeated, and perhaps an attempt made to remove a cause such as a sequestrum. On no account must the incision be left open.

Tuberculous Joint.

In addition to the group treatment, the diseased joint must be protected from movement and pressure by means of a splint. This immobilisation must continue for some time after all pain and tenderness have disappeared; but the patient should not be kept in bed more than can be helped, for such treatment may last for from three to eighteen months. In the cases of the knee, the hip, or the spine, extension by weights is indicated, and even in the arm it is possible to devise a spring extension. Other treatment consists in blisters or cautery; in passive hyperæmia by means of an elastic band kept applied for an hour at a time above the joint, and in the injection of iodoform as in the following formula:

R	<i>Iodoformi</i>	..	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	..	ʒii.
	<i>Glyc.</i>	..	..	..	..	ad ʒx.
M.	<i>Fiat Lotio.</i>					

If an abscess have formed, it may be opened in the way previously described; but an operation is usually necessary, such as partial or complete excision or, more rarely, amputation.

Tuberculosis of Bone.

Group treatment as for other forms is indicated. In the early stage passive hyperæmia by the elastic band above the lesion should be given a good trial; but if an abscess have formed, it must be laid open, the diseased part scraped away, sequestra removed, and the cavity rubbed with iodoform. In the case of finger, hand, or foot, amputation may be necessary; but it is rarely required elsewhere. (See also Sinus, p. 41.)

Tuberculosis of Kidney.

Tuberculin should be tried first; but if the other kidney can be proved to be sound, and there is no tubercle elsewhere, the affected one should be removed.

Tuberculous Prostatitis.

The treatment is that of the group; but, in addition, copious drinks should be enjoined. Morphia and belladonna suppositories will be required for the pain. Only in primary cases should the gland be removed.

Tuberculous Testis.

Early castration is the remedy if there is no tubercle elsewhere; but in bilateral cases, epididymectomy should be done for preference, so as to preserve the effect of the internal secretion of the gland.

Tuberculous Laryngitis.

The tuberculous deposits are sometimes successfully removed by curetting following upon cocainisa-

tion, and then brushing in a 50 per cent. solution of lactic acid. Otherwise the treatment is that of pulmonary tuberculosis.

Tuberculosis of the Fauces.

In addition to the group treatment, the throat should be swabbed with a 50 per cent. solution of lactic acid.

Lupus Vulgaris.

The group treatment is helpful. Locally, Unna's 30 to 40 salicylic-creasote plaster should be applied night and morning, and the sloughs wiped away each time. When the nodules have been reduced to manageable numbers, each one should be punctured with a pointed match dipped in acid nitrate of mercury. Alternative methods of treatment are by X-rays and Finsen light.

THE SYPHILITIC GROUP

THIS includes Congenital, Primary, Secondary, and Tertiary Syphilis. The group treatment is by mercury, iodides, and salvarsan.

Congenital Syphilis.

One-third of a grain of hyd. c. cret. should be given to the infant three times a day; but as the quantity is rather unmanageably small, it is best dispensed with a few grains of white sugar or given with a little cream; if mixed with water, most of the powder is lost; should diarrhœa ensue the grey powder must be mixed with pulv. cretæ aromat. Alternatively, mercury may be given by inunction, a piece of ung. hydrarg. the size of a split pea being rubbed into the axilla every night. For the later manifestations, an iodide should be added to a mercurial salt. Thus:

R	Pot. Iod.	..	..	..	gr. xv.
	Liq. Hydrarg. Perchlor.	..	..	..	ʒiiss.
	Syr. Aurant.	..	..	..	ʒss.
	Aq.	..	..	..	ad ʒii.

M.

One teaspoonful three times a day.

Salvarsan has had a good trial in congenital syphilis, but there have been so many fatal results that it is now almost abandoned. Great attention must be bestowed upon the cachexia which accompanies this disease, for its intensity is the measure of an unfavourable prognosis. Some degree of it is due to insufficiency of vitamins, which may possibly be destroyed by the mercury, so that, in addition to other treatment, the child should have fruit juice

(see p. 66). Cod-liver oil is also indicated. The mother should suckle the child if possible; but a wet-nurse is of course inadmissible. Great care must be taken with the skin, very little soap being used; the child should be dried with a soft towel and only very soft diapers employed. Condylomata should be dusted with calomel and starch-powder 1 to 3; while fissures at the angles of the mouth must, if moist, be anointed with a little mercurial ointment weakened to one-fifth with vaseline.

Primary Syphilis.

Iodoform and boric acid ointment 1 drachm to the ounce should be put on the sore if moist, or, alternatively, *lotio nigra* applied; but if the sore is foul and spreading, stronger measures will be required and pure carbolic acid applied. This is also the treatment for soft sores. For dry chancres, no local treatment is required. The patient's habits must be regular, his food nourishing, and his mouth in a hygienic state. The last indication is met by extraction, stopping, or scaling of the teeth when needed, and the use of a mouth-wash of peroxide of hydrogen. As soon as the diagnosis is assured, internal treatment is begun by administering salvarsan; but mercury should be given concurrently not only to help the cure, but because it lessens the toxic effect of the arsenic. Two intravenous injections of 0.6 gramme of salvarsan are given four weeks apart, and once a week for ten weeks an intramuscular injection of calomel gr. $\frac{3}{4}$ in 17 minims of sterilised olive oil is administered.

Salvarsan is contra-indicated in aneurysm, valvular insufficiency, nephritis, cirrhosis of the liver, chronic alcoholism, and advanced tabes. But even mercury must be given with caution in tuberculosis, severe anæmia, albuminuria, and malaria. Galy

and Joha are said to be as effective as salvarsan and less toxic. The latter can be given intramuscularly. Notwithstanding the great value of salvarsan, the effect is much better when mercury is given as well, and a long course of hyd. c. cret. should follow.

Secondary Syphilis.

Iodides are now indicated in conjunction with mercury. Thus:

R	Pot. Iod.	..	..	..	..	ʒi.
	Liq. Hydrarg. Perchlor.	..	..	..	..	ʒvi.
	Inf. Gent. Co.	..	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day.

Should salivation appear, the medicine must be stopped and tr. belladonnæ in 5-minim doses given three times a day; while a mouth-wash composed of alum and chlorate of potash is used freely. But, if the measures directed for the hygiene of the mouth have been followed, there is not much risk of salivation developing.

An alternative treatment is by mercurialised serum (see p. 124).

Tertiary Syphilis.

In general, the iodides are here more useful than is mercury, though the latter must not be given up entirely. Cinchona, too, is generally required at this stage, and sarsaparilla is again coming into its own (another instance of the medical pendulum). The combination may be given thus:

R	Pot. Iod.	..	..	..	..	ʒi.
	Tr. Cinchonæ	..	..	..	..	ʒiv.
	Ext. Sarsæ Liq.	..	..	..	..	ʒii.
	Aq. Aurant. Flor.	..	..	..	..	ad ʒviii.

M.

One-eighth part three times a day.

Concurrently with this, 3 grains of hyd. c. cret. should be given three times a day.

Skin affections and, especially, rupia and suppurating gummata are best treated with Donovan's solution. Thus:

R	<i>Liq. Arsen. et Hydrarg. Iod.</i>	..	ʒii.
	<i>Syr. Aurant.</i>	.. ..	ʒss.
	<i>Inf. Quassia</i>	.. ..	ad ʒvi.

M.

One tablespoonful three times a day.

Condylomata and mucous patches should be painted with bichloride of mercury, 15 grains to the ounce; while suppurating gummata are best treated with a lotion of perchloride of mercury 1 in 1,000, followed by boracic ointment. Condylomata must be kept dry and dusted with equal parts of starch and calomel. For bad skin affections, the calomel vapour bath is a last resource in store; but plantar psoriasis and serpiginous ulceration can usually be adequately treated by ung. hydrarg. ammon. or orthoform.

Syphilitic persons should undergo a Wassermann test at least once a year, and if it is positive, resume the treatment.

Gummata being so widespread, deserve special study. They occur in the brain, meninges, cord, and cauda equina; in bone, including the skull and the orbit; in joints, penis, urethra, thyroid, tongue, pharynx, larynx, lung, mediastinum, and even in the heart, where they give rise to one form of the Stokes-Adams syndrome. The treatment is by large doses of iodide of potassium, which, beginning at 5 grains, may be gradually raised if necessary to 20 grains. At intervals a little mercury should be given, unless contra-indicated. Salvarsan may be given, but the

other treatment is usually satisfactory. A generous diet will be required. For Cerebral Gummata, see p. 144.

Yaws.

The treatment of syphilis applies equally to yaws.

THE PARASYPHILIS GROUP

THIS group includes Locomotor Ataxy, General Paralysis of the Insane, and some forms of Cerebro-spinal Syphilis.

Until recently, these were regarded as incurable; but the introduction of salvarsan and mercurialised serum has made them more hopeful. Good results have not been very numerous; but they have been sufficiently so to make it worth while to persevere, especially when the case is in an early stage. Salvarsan as usually administered is almost valueless; it is salvarsanised serum that is relied upon. In the Swift-Ellis method, an hour after an intravenous dose of salvarsan has been administered some blood is drawn off, and after standing for a time its serum is removed and diluted with an equal quantity of normal saline. On the following day lumbar puncture is performed, some cerebro-spinal fluid withdrawn, and 30 minims of salvarsanised serum introduced. Ogilvie's modification consists in incubating the serum from 30 c.c. of blood with $\frac{1}{4}$ mgrm. of salvarsan, the dose being 10 c.c. This plan is to be preferred where repetition is necessary. Wardner prefers to inject the serum, after performing lumbar puncture, through a trephined opening beneath the dura mater.

Mercurialised serum is said to have been successful in some cases of cerebro-spinal syphilis. It is made by adding $\frac{1}{3}$ grain of mercuric chloride to 2 c.c. of serum, and dissolving the precipitate in 4 c.c. more serum. The dose is 0.5 c.c.

General Paralysis.

In addition to the group treatment, it is essential that the patient have sufficient sleep, and the best hypnotic is paraldehyde in drachm doses. The patient must also be in the best hygienic conditions and have opportunist treatment when called for. Dr. Townsend has had good results from urotropin in 10-grain doses three times a day.

Locomotor Ataxy.

Besides the treatment given for the group, it is necessary that the patient have ten hours out of the twenty-four in bed, and that he lie down for two hours after his midday meal; while, during the periodical aggravations, he should spend two or three weeks continuously in bed. Suspension treatment is practically abandoned; but Frenkel's exercises are distinctly valuable, though only if they are executed in a quiescent interval. The difficulty in walking, which is chiefly due to articular anæsthesia, can be lessened by making the patient carry weights.

Gastric crises should be treated by phenacetin or phenazone in 20-grain doses or by aspirin; opium should be avoided. Laryngeal crises require bromide of potassium in 20-grain doses. If the blood-pressure is high, a 2 or 3 grain tablet of erythrol tetra-nitrate should be given every four hours. There is a great tendency to cystitis in this disease, but it may be generally warded off if the patient thoroughly empties the bladder every three hours. On its first appearance, 10 grains of urotropin will check it; but if it have become established, the bladder must be washed out with permanganate of potash, 1 grain to 8 ounces of warm water.

THE VICIOUS HABIT GROUP

THIS group includes Chronic Alcoholism, Cocainism, Morphinism, Chloralism, Absinthism, Heroinism, etc.

The treatment consists in the gradual withdrawal of the offending cause, removal to a home with cheerful surroundings, plenty of occupation, and good nourishing food at frequent intervals, to include chocolates and other sweets, as well as plenty of fruit. Lime- or lemon-juice and soda make the best drink. Unless contra-indicated, a cold shower-bath should be taken every morning. A good deal of open-air exercise should be enjoined and outdoor games encouraged.

Chronic Alcoholism.

Heart failure or delirium tremens sometimes follows upon sudden withdrawal, and this should therefore be spread over at least a week. Some depression is a natural consequence at first, and it can be lessened by giving a cachet of citrate of caffeine, gr. v., three times a day. A good deterrent is a secret morning emetic given with the early tea, such as emetine, gr. $\frac{1}{3}$. The majority of patients suffer from sleeplessness, and this must be dealt with by ringing the changes upon the various hypnotics and disguising their taste and colour; for if one only be used, and the patient recognise it, a fresh habit may be contracted. Of course, he should not know that he is taking a hypnotic at all. Paraldehyde in 1-drachm doses is about the best form. It may be given either in capsule or as a mixture as follows:

R *Paraldehyd.* ʒi.
Pulv. Trag. Co. q.s.
Aq. Cinnam. ad ʒiiss.
 M.

Fiat Haustus. To be taken at bedtime.

Another night a drachm of dilute hydrobromic acid with the cinnamon flavouring may be given, and so on with sulphonal, veronal, etc. Morphia and chloral should be avoided. Tonics are very important, and capsicum may be added to them with advantage:

R *Tr. Capsici* ʒii.
Ext. Cinchonæ Liq. ʒiii.
Inf. Gentianæ Co. ad ʒvi.
 M.

One tablespoonful three times a day.

If the conjunctivæ are yellowish, dilute nitrohydrochloric acid may take the place of the cinchona; and if the stomach is irritable, the following mixture may be substituted for a time. Thus:

R *Bismuth. Subnit.* ʒiiss.
Acid. Hydrocyan. Dil. ʒss.
Spir. Armoraciæ Co. ʒi.
Inf. Gentian. Co. ad ʒvi.
 M.

One tablespoonful three times a day.

Drug Habit.

The following treatment applies practically to all drugs. In severe cases the withdrawal should be gradual, but in slight cases sudden withdrawal is much the best, and even if depression follow no alcohol must be given, its place being taken by the citrate of caffeine. The condition is usually asso-

ciated with visceral neuroses, and an alkaline mixture is indicated. Thus:

<i>R Sodii Bicarb.</i>	..	..	..	̄iv.
<i>Bismuth. Carb.</i>	..	..	..	̄iss.
<i>Pulv. Tragac. Co.</i>	..	..	..	q. s.
<i>Aq. Ment. Pip.</i>	..	..	..	ad ̄vi.

M.

One tablespoonful every four hours.

The patient should have cheerful society and surroundings, with plenty of nourishing food.

This has been the stock treatment of such cases; but it must be confessed that it is none too satisfactory. The alternative treatment is the intensive hyoscine method of Cott, for which great success is claimed, and apparently justly. The patient, who must be watched day and night, is first given $\frac{1}{100}$ grain of hyoscine hypodermically, and every hour after this, for from twenty-four to forty-eight hours, a dose of $\frac{1}{200}$ grain, unless the pulse or breathing appear seriously affected, when the treatment must be intermitted for a few hours. The result is a mild delirium, and when this stage is reached only enough hyoscine is given to maintain it for from twenty-four to forty-eight hours, while a little strychnine may be added if the heart is weak.

About thirty-six hours after the cessation of the hyoscine, the mind being then clear, a $\frac{1}{8}$ -grain dose of pilocarpin is injected every hour till sweating is induced, and thereafter, at gradually increasing intervals, until the hyoscine has been eliminated. If sleep is badly needed, a 30-grain dose of bromide of potassium may be given. Massage should be employed for a fortnight, and, to complete the cure, Cott gives bromaurum in 10-minim doses three times a day for two or three months.

Tobacco Habit.

Smoking must be discontinued by gradually reducing the number of cigarettes to nil within a week. Pipes are the worst form of smoking, and neither they nor cigars are allowed at all during this period. The craving is said to be allayed to some extent by chocolate.

A tonic will be needed, and the best is strychnine:

R	<i>Liq. Strychnin.</i>	..	..	..	ʒi.
	<i>Acid. Sulph. Dil.</i>	..	..	..	ʒii.
	<i>Syr. Aurant.</i>	..	..	..	ʒss.
	<i>Aq.</i>	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day before meals.

If anæmia is present, a drachm of sulphate of iron may be added. Nitrites have a favourable effect upon tobacco amblyopia. See also the Automatic Habit, p. 5.

THE MUSCULAR ATONY GROUP

THIS group includes Atonic Dyspepsia, Constipation, Dyschæzia, Enteroptosis (with floating kidney), Flat-Foot, and Lateral Curvature.

The group treatment consists in the administration of strychnine and the use of massage, electricity, cold baths, the Scotch douche, and, where suitable, the use of belts and other apparatus. The patient requires good food, and should live as much as possible in the open air.

Atonic Dyspepsia.

To enable the stomach to recover its tone, it is necessary to prevent undue dilatation, so that only moderate quantities of fluid, and meals of only small bulk must be taken. For the same reason anything calculated to produce flatulence, such as leguminous and root vegetables and aerated or fermenting drinks, must be disallowed. A small cup of consommé before a meal is beneficial, but the meal itself should be eaten dry. After the meal the following tonic should be taken:

R *Tr. Nuc. Vom.*)
Acid. Nitrohydrochl. Dil. } .. āā ʒii.
Syr. Zingib. ʒi.
Aq. ad ʒvi.

M.

Dose, one tablespoonful.

Dilatation of the Stomach.

Some of these cases constitute the second stage of atony of the stomach; but others are associated with cancer or stricture of the pylorus, and must be treated when possible by operation. The group treatment by massage, faradisation, and a cold douche, is indicated; but the special treatment is by lavage. For this purpose warm water containing $\frac{1}{2}$ ounce of boric acid to the pint is introduced into the stomach by the long tube. When no more will descend the patient should make lateral shaking movements of the trunk. At the end of three minutes the funnel is lowered and the stomach contents siphoned off. The treatment in other respects is that of atony of the stomach.

Atonic Constipation.

The want of tone in this and the following conditions is not limited to the muscular wall of the bowel, for as a rule it extends also to the abdominal muscles. The condition of the bowel can be improved by doing everything to prevent dilatation; for if the muscular coat could be kept undilated for, say, six weeks, that alone should remedy the condition. It does not do to be afraid of aperients, for, in the writer's opinion, dietetic treatment by fruit and vegetables makes matters worse by increasing the dilatation. The drug that causes the least tendency to after-constipation is cascara; tamar indien being a good second. Cascara tablets are not so good as the liquid preparations, and "cascara evacuant" is one of the best forms. At punctually the same hour every morning for a fortnight the patient should take enough to produce two actions, and for a month longer, enough to provoke one. Then for three months the following pill should be taken every

other night, and thereafter slowly and gradually dispensed with:

R	<i>Ext. Bellad.</i>	..	..	..	gr. ss.
	<i>Ext. Nuc. Vom.</i>	..	..	..	gr. $\frac{1}{4}$.
	<i>Ext. Cascarae</i>	..	..	..	gr. iiss.
	<i>Ext. Glycyrrhiz.</i>	..	..	..	ad gr. iv.

Fiat Pil. One to be taken every other night.

In addition, the patient should take every night two teaspoonfuls of paraffin through the whole period.

The best exercise for the abdominal muscles is obtained by lying flat on the floor with the toes inserted under a chest of drawers, and then raising the trunk without the help of the hands. This should be done about six times every morning. Deep massage should follow the course of the colon, beginning at the cæcum. The alternate hot and cold douche (Scotch Douche) applied to the abdomen is valuable, and a fitment applicable to the bath-room can be obtained at the large stores.

The assumption of the erect position in man is largely responsible for the prevalence of constipation, since it necessitates the propulsion of the contents of the ascending colon against gravitation; and yet, curiously enough, the ascending colon, by its large lumen and its thin walls, is very ill-equipped for propulsion by peristalsis, nor do X rays prove that this is always the sole motive force. The fact is, as the writer has insisted elsewhere, there is another force at work.* Indeed, were it not so, evolution must have produced a far more muscular ascending colon than man now possesses.

Atonic Dyschæzia.

By this term is meant such loss of tone in the rectum as to impair its power of expulsion, so that

* "Siphonage and Hydraulic Pressure in the Large Intestine" (*Ed. Med. Journal*, 1902).

accumulation takes place in the rectal pouch. It is a very common condition, and should not be confused with ordinary constipation. Here also the nightly dose of paraffin is indicated, and here, too, the indication is to restore the bowel to its proper tone. This cannot be done by exercises or massage, but the Scotch douche used as an enema is of great value. For this purpose the weighted end of a Higginson's syringe is dropped alternately into two jugs placed side by side, and filled with hot and cold water respectively. The douche should be administered immediately after the morning evacuation, for the stream should impinge upon the rectum unimpeded by the presence of fæces. A hint taken from obstetric practice is useful for those who find much difficulty in expelling the contents of a loaded rectal pouch. It is this: the patient when straining should press deeply just inside each tuber ischii with protected fingers. Undue straining when once something has passed is to be deprecated, for it tends to induce hæmorrhoids or prolapse, and, with a little patience, the contractile force of the rectum will usually suffice.

For Constipation due to Dryness, see p. 188.

Sigmoid Accumulation.

In addition to the group treatment, two teaspoonfuls of glycerine should be injected into the rectum every other morning for a time, and paraffin taken overnight. The Scotch enema douche is valuable.

Intestinal Stasis.

This is the result of atony of the colon, and must be so treated; but, in addition, intestinal antiseptics such as guaiacol or salol, and especially the tabloid of calc. iodo-ricinoleate, of which two are taken three

times a day, should be ordered. Antiseptic enemata of boric acid in warm water, 30 grains to the pint, are valuable, and there is no reason why one of lactic acid should not take the place of the rather discredited soured milk treatment. While short-circuiting may sometimes be advisable, the writer's attitude towards the appalling list of ills attributed to intestinal stasis is that of St. Thomas.

Enteroptosis.

This condition is associated with loss of tone in the abdominal walls, and since it occurs chiefly in women and affects even those who have borne no children, it may be connected with the downward pressure of the corsets. Special belts are made with a view to supplying the place of the natural support; but such treatment, though temporarily palliative, is not scientific, for, by relieving the abdominal muscles of their natural work, the belts promote degeneration of muscle fibres. The group treatment meets the case; but the writer recommends in addition that the patient lie on the back with the hips raised, somewhat in the Trendelenburg position, for two hours a day. A practical way of doing this is to rest the shoulders on the seat of a sofa and let the legs hang over one end. The Bergonié chair is a good way of employing electricity to the muscles.

Movable Kidney.

This condition and floating kidney are often only one feature of enteroptosis, and the group treatment fulfils most of the indications; but, in addition, at least for a time, a kidney belt will be required. To get the best results, it should be put on in the modified Trendelenburg position described in the last section. There are some women who declare that

they absolutely cannot wear belts, and the writer has met the difficulty successfully by ordering the air pad to be stitched in the proper situation inside the corsets.

Lateral Curvature.

The success of Bernard Roth's treatment proves that here, too, muscular atony has a large share in its production. The treatment, therefore, comes within the group. The indication is to strengthen the muscles on the convex side of the curve. This may be done by faradisation, exercises, and massage. But much may be effected by trapeze exercise, with the bar placed obliquely and the hand of the concave side holding the higher end; this should be practised for ten minutes several times a day. For the lumbar curve, the seat habitually used by the patient should slope laterally with the higher end on the convex side.

Flat-Foot.

Here also there is always some flabbiness of the muscles, and the stretching of the ligament is secondary. If seen in the early stage, firm bandaging, rest, and the group treatment, will make a permanent cure. Advanced cases require, in place of a bandage, a valgus plate or a special surgical boot; but in the army at the front excellent results have been obtained by nailing a wedge-shaped piece of leather to the inner side of the sole and heel, so as to throw the weight upon the strong outer side of the foot.

Metatarsalgia.

The drop of the head of the metatarsal bone is usually associated with flat-foot, and at an early

stage the group treatment is satisfactory even without special support; but if seen late, Scholl's anterior metatarsal arch support should be worn in addition. Relief, but without permanent cure, may be obtained by wearing a boot with a hollow made to receive the head of the sunken metatarsal bone. The last resource is removal of the head of the offending bone.

THE FLACCID PARALYSIS GROUP

THIS is the lower neurone type of paralysis, which is characterised by wasting of the muscles and lowered or absent reflexes and electric responses. The group includes most forms of Paraplegia, Bulbar Paralysis, Infantile Paralysis, and Paralysis following Neuritis or Nerve Lesions. Mixed forms occur.

The group treatment begins when the acute causal period, such as cerebral hæmorrhage, has passed off. It is mainly directed so as to inhibit or lessen the muscular wasting which, unchecked, might make the paralysis permanent, and includes massage, electricity, exercises, and strychnine. Massage takes the form of *pétrissage* (*pêtrir*, "to knead"), deep kneading being applied to the fleshy part of the muscles. In addition to the visit of the masseuse, the patient or his friends should be taught to repeat it several times through the day for short periods. Electricity is employed in the form of faradisation, the large or indifferent electrode being placed upon the upper part of the back, and the small or exciting electrode upon the fleshy part of the muscles, both electrodes having been previously moistened with warm salt water. Where only a few muscles are involved, the small electrode should be put upon Ziemssen's spots, which are usually to be found at the point where the nerve enters the muscle. When the paralysed area is large, electric baths may be employed with advantage.

As regards exercises other than the passive form, the writer suggests that it may be inadvisable to

begin them early in hæmorrhagic cases, because the will to contract a given muscle would stimulate its centre in the cortex and possibly induce further hæmorrhage. Otherwise the patient should be encouraged to attempt frequent short efforts to put in action the affected muscles. But, even more than in heart cases, the rule holds good to stop short of fatigue. A great deal can be done in this way to make the patient less dependent when he is fit to get up. Later, Müller's special exercises or the Zander machines may be employed. In paraplegic cases great care is necessary to avoid bedsores (see p. 183).

Internally, strychnine is generally indicated, and preferably in the form of *tr. nuc. vom.* Certain precautions, however, must be observed. Thus, it must not be given in cerebral cases as long as a head symptom or rigidity persist; and it is next to useless if the muscles do not respond to faradisation or to the condenser. As regards that elusive substance phosphorus, it is difficult to make up one's mind; but it is indicated at least in cases where there is destruction of nerve tissue, and its best form is lecithin or the phosphorus pill.

Bulbar Paralysis.

In adults the assumption is that the condition is due to thrombosis consequent upon syphilitic endarteritis, and intramuscular injections of mercury together with large doses of iodide of potassium by the mouth are indicated. Nasal feeding is usually necessary. (See the Syphilitic Group.) In children a tuberculous tumour may be present, and if this is inoperable relief must be sought in the treatment of the tuberculous group. If the breathing seem about to fail, artificial respiration must be employed pending the action of a hypodermic injection of strychnine.

Landry's Paralysis.

No time must be lost in giving an initial mercurial injection, whether the case is syphilitic or not; otherwise the treatment is that of the group.

Infantile Paralysis.

The treatment during the acute stage is that of the infective fever group (see p. 69). In addition, a subdural injection of from 5 to 20 c.c. of Flexner's serum should be injected, and repeated every twenty-four hours, according to clinical conditions and indications. Full doses of urotropin are given until the paralysis shows itself, when the affected limb should be placed in aluminium splints, in such a way as to prevent muscle stretching. The angle must be altered from time to time, but it must never exceed that which the patient can get by his own effort. Massage, beginning with effleurage and going on to pétrissage, must be started as soon as the tenderness will permit it; but later, faradisation, or in a neglected case the condenser form of galvanism, will take its place, and at the same time *nux vomica* or the syrup of the hypophosphites may be given internally.

Multiple Neuritis.

In addition to the alcoholic form, which is the commonest, there are those associated with diphtheria, diabetes, influenza, beri-beri, the puerperal state, and cases due to poisoning by lead, arsenic, mercury, benzine, naphtha, and bisulphide of carbon.

During the painful stage, phenazone, phenacetin, or acetanilide give the most relief. Their effect upon the heart, however, must be watched, and in the case of diphtheria, morphia has superseded them. In any

case they should be given in combination with caffeine. Thus:

R	<i>Caffein. Cit.</i>	..	..	..	̄i.
	<i>Phenazon.</i>	..	..	..	̄iiss.
	<i>Sp. Ammon. Arom.</i>	..	..	..	̄ss.
	<i>Aq.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful every four hours.

The most suitable hypnotics are chloralamide, in 30-grain doses in cachets; and paraldehyde, in drachm doses in capsules. The diet at this stage should be semi-liquid, and, at least in alcoholic cases, stimulants must be withheld. The patient must be kept in bed; but on account of the liability to "foot-drop," care must be taken to prevent the weight of the bedclothes from resting upon the toes, or permanent deformity may result. It can easily be managed by some improvised form of cradle, such as a chip hat-box, into which the feet are inserted. It is important, too, to prevent other contractures; the legs, therefore, should be kept extended by sand-bags and, in children, by splints. When the pain is passing off massage and passive exercises should be begun, and a little later faradisation and active exercises must be started. The diet may now be more generous, and, except in the alcoholic form, may include stout or red wine. A tonic will be required, but strychnine is better avoided on account of the contractures; the following will be found beneficial:

R	<i>Ferr. Sulph.</i>	..	..	..	̄i.
	<i>Quin. Sulph.</i>	..	..	..	gr. xxv.
	<i>Mag. Sulph.</i>	..	..	..	̄i.
	<i>Acid. Sulph. Dil.</i>	..	..	..	̄i.
	<i>Aq. Chloroformi</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful three times a day.

Notwithstanding every care, contractures sometimes follow. In that case radiant heat or diathermy should be tried, but failing these, tenotomy may have to be resorted to.

In poisoning cases, eliminatory measures must be ordered as prescribed elsewhere, and in other cases the precautions in use in the factory, or change of work will be necessary.

Muscular Neuritis.

The treatment of the atrophic stage is on group lines. That of the acute stage is the same as for Sensory Neuritis (see p. 158).

For Beri-Beri, see p. 67.

THE SPASTIC PARALYSIS GROUP

THIS is the upper neurone type of paralysis; the lesion lying between the cortex of the Rolandic area and the upper limit of the lumbar enlargement in the pyramidal path. The reflexes here are exaggerated; there is no muscular wasting, and the electric reactions are unaltered.

Spastic paralysis occurs in a very large number of conditions, such as syphilis, syringomyelia, ataxic paraplegia, hereditary cerebellar ataxy, disseminated sclerosis, infantile spastic paralysis, etc.

The treatment is very unsatisfactory. That by electricity is positively harmful, and nux vomica is better avoided. Iron, arsenic, quinine, and mercury, may each do good in appropriate cases, but not much should be expected from their use. Massage, passive exercise, or Frenkel's exercises for re-education of the muscles, may effect some improvement, or at all events prevent matters getting worse. The less the patient is confined to bed the better as a rule. Cases due to pressure, if seen early, may be cured by the removal of the cause surgically. In syphilitic cases, however, amelioration and even a cure may result from treatment by salvarsan and mercurial inunction, and most cases should be so treated, even if the Wassermann reaction is negative. Cystitis is a troublesome complication, which is best treated by urotropin.

The group treatment reflects no great credit upon the curative powers of medicine. Possibly, periodical induction of flaccidity by spinal anæsthesia or curare might be of service or, alternatively, such repeated small doses of the latter as would suffice to neutralise the spasticity.

THE MUSCULAR DYSTROPHY GROUP

THE group includes Infantile Myopathy, Erb's Juvenile Paralysis, Pseudo-Hypertrophic Paralysis, Landouzy-Dejèrine Paralysis, Peronæal Muscular Dystrophy, and the hereditary form of Progressive Muscular Atrophy.

The group treatment, such as it is, consists chiefly in ordering regular muscular exercises; for, when the patient ceases to use a group of muscles, these degenerate rapidly. This is particularly true of walking, and consequently it is often advisable to recommend a walking machine. No drugs seem to be of any avail.

Pseudo-hypertrophic paralysis presents some of the features of hypothyroidism, such as adiposity and hebetude. Possibly, therefore, thyroid treatment might succeed.

THE INTRACRANIAL PRESSURE GROUP

THIS group includes Cerebral and Cerebellar Tumours and Abscesses; Epidural Abscess; Cerebral, Ventricular, and Epidural Hæmorrhage, including Hæmatoma; Fracture of the Skull; and Meningitis of all sorts, whether Simple, Tuberculous, Post-Basic or Cerebro-Spinal.

The group remedy is lumbar paracentesis. The puncture is made on the level of the top of the third lumbar spine, a little to the side towards which the patient is lying.

Some help, too, may be obtained by passing a tight ligature round both thighs.

Cerebral Tumours.

Those of syphilitic origin can be successfully treated by iodide of potassium and other antisyphilitic measures. For other forms, surgical removal is sometimes available.

Hæmatoma of Dura Mater.

The patient may be kept going by group treatment pending the absorption of the clot. Otherwise surgery offers the only resource.

Ventricular Hæmorrhage.

Here, also, lumbar paracentesis may suffice till natural absorption takes place. Failing this, an operation is indicated.

Apoplexy.

The time is near when the treatment will be by operation. At present it is medical. To lessen the flow of blood to the brain, an ice-bag should be applied to the head, a hot-water bottle to the feet, and the head well raised. A purge is indicated, and if the patient is unconscious, half a minim of croton oil in a teaspoonful of castor oil should be pushed to the back of the throat, where it is usually swallowed; if not, it must be mopped out again and a glycerine injection administered. An enema is better avoided if possible, on account of the disturbance involved. A blister to the nape of the neck and even leeches to the temples, though rather medieval, are sometimes remarkably successful, and need not be disdained on that account. When the patient regains consciousness he must not be allowed to speak, must see no one but his nurse, and must have his room kept dark for a week. During the same period his diet must be little more than is enough to keep him alive, and for a month no meat, and certainly no alcohol, must be given to him. The following medicine should be begun about the third day, and taken for the first fortnight, three times a day; for a further six weeks, twice a day; and for a month, at night only:

R	Pot. Brom.	..	..	..	..	ʒiiss.
	Pot. Iod.	..	..	..	..	ʒi.
	Aq. Anisi	..	..	..	..	ad ʒvi.

M.

One tablespoonful to be taken as directed.

The severity of this treatment may have to be mitigated in feeble patients.

To prevent a recurrence, the patient must be warned not to stoop or to strain; he must eat but little meat, take his meals little and often, and sleep with his head

raised. Further, he must avoid excitement, keep the bowels somewhat relaxed, and should he contract a cough, seek advice about it at once. Apoplexy is frequently a complication of kidney and other diseases, so that further treatment may be necessary.

Tuberculous Meningitis.

Lumbar puncture has a good effect, but it is only temporary. Inunction of ung. hydrargyri is said to have given good results occasionally, and bromide of potassium has some effect upon the headache and the vomiting. Recovery is very rare, but should it ensue, the after-treatment will be that of the tuberculous group.

Post-Basic Meningitis.

The treatment during the acute stage is the same as that given for the tuberculous form; but the prospect is much brighter and the indication for lumbar paracentesis stronger. Later, cod-liver oil and syrup of the iodide of iron should be given. In a case in which hydrocephalus persisted, drainage of the ventricles was successful.

Acute Simple Meningitis.

Lumbar puncture is more hopeful here, and the ice-bag to the head more helpful than in the tuberculous form. Otherwise the treatment is the same. Drainage of the ventricles has given good results in some cases.

Cerebro-Spinal Meningitis.

Flexner's serum injected in the following way is now widely used: The quantity of fluid that has escaped from the lumbar puncture (usually about 7 drachms) is measured, and an equal quantity of

the serum injected, the proceeding being repeated every third day. An alternative treatment is that by urotropin in doses of 10 grains every four hours. Concurrently with either treatment, nasal douches of glycothymoline and water 1 to 4 must be administered every four hours. Handkerchiefs must be replaced by cottonwool, which is to be burnt after use.

Abscess, Cerebral or Epidural.

The only remedy is to trephine, release the pus, wash out, and insert a drainage-tube.

Thrombosis of Brain or Sinus.

The treatment is the same as for apoplexy. If the ventricles fill up, they must be drained. When a lateral sinus is involved, a mastoid operation may be indicated. The patient, however, is often debilitated, and must in that case be allowed more nourishment than in apoplexy. Even stimulants may be indicated. Where the cause is syphilis, as in syphilitic endarteritis, salvarsan may be tried; but iodides and mercury are useless.

THE PSYCHOSIS GROUP

THIS includes Hysteria, Neurasthenia, and many cases of Insanity.

The key to the psychological treatment of the group is to be found in combating autosuggestion. The patient must not be allowed time for introspection, and the less his ailment is discussed the better; but he must be left very little alone, and those with him should be of cheerful and rather unsympathetic demeanour. The writer has long been of opinion that toxæmia, and especially the intestinal form, is in close causal connection with these conditions; and when that highly original writer Dr. Savill brought out his book upon neurasthenia, he was pleased to find him of the same opinion. But another cause lies in the endocrinal system, though which particular gland is at fault or whether it is due to a still unrecognised source of an endocrinal secretion (and it is certain that we have not discovered all) is not easy to determine. Some cases have an element of hyperthyroidism in them, as Dr. F. Stoney has shown in the case of soldier's heart, and benefit by partial X-ray treatment. Others improve under a combination of thymus extract and adrenalin or a polyglandular extract such as Carnrick's hormotone; but all are bettered to some extent by intestinal antiseptics, such as the following:

R	<i>Bismuth. Salicylat.</i>	)	..	..	āā	ḡiss.
	<i>Mag. Carb. Levis</i>	)	..	..
	<i>Mucilag.</i>	..	..	..		q.s.
	<i>Syr. Zingib.</i>	..	..	..		ḡss.
	<i>Aq. Cinnamom.</i>	..	..	..		ad ḡvi.

M.

One tablespoonful every four hours.

Alternatively, guaiacol carbonate or salol may be employed.

It may be found later that all psychoses are of endocrinal nature, and that intestinal and other toxæmias owe their effect to their action upon certain of the ductless glands.

Tremor yields to 3-minim doses of a 1 in 1,000 solution of hyoscine hydrobrom.; anæmia must be treated on group lines (p. 55); and sleeplessness by bromides or paraldehyde. The writer has pointed out in an earlier part of this work the immense importance of breaking the "automatic habit," and believes that it is this habit that keeps up the symptoms after the original cause has ceased to act. One way of doing it is to send the patient away for a complete change of surroundings, and, if possible, those which evoke new interests. It is not the change of air that does the good; indeed, sea air has frequently a depressing effect upon neurotic cases. Another way of breaking the habit is by suggestion, or even by so-called Christian Science. These, which are of little or no service in the early stage, when the cause is still operative, are of great value when nothing but the habit remains. In both cases much depends upon the personality of the person from whom the suggestion comes. A more violent and impersonal method of breaking the automatic habit is by the sudden application of a strong faradic current, as is frequently done with success in hysterical aphonia. The writer knows, too, of a case where a chronic hysterical paraplegic was instantly cured by lighting a truss of wet straw at the foot of the staircase leading to her bedroom and shouting "Fire!"

Neurasthenia.

The group treatment needs little or no additions or modifications. In the beginning bromides are of

some use; but they soon cease to benefit, and if continued too long, do harm by undermining the will power of the patient.

Hysteria.

The antispasmodics are of use in the early stage, and possibly are a form of suggestion, their disagreeable taste "suggesting" that the patient would be more comfortable cured. Valerian is said to lower the sensitiveness of the nerves. The following is a good antispasmodic mixture.

R	<i>Tr. Valerianæ</i>	}	..	..	āā	℥̄.
	<i>Sp. Ammon. Fetid.</i>	}	..	..	..	℥̄.
	<i>Ammon. Brom.</i>		..	..	..	℥̄iss.
	<i>Aq.</i>	..	..	..	..	ad ℥̄vi
						M.

One tablespoonful every four hours.

Pseudo-Angina.

This is commonest about the time of the menopause. It is essentially a neurosis, and the group treatment is successful. Possibly the toxin here is derived from the internal secretion of the ovary; and as the corpus luteum has a favourable effect in menstrual neuroses, it would be worth trying here. The antispasmodic mixture prescribed for hysteria is certainly useful in this disorder. Nitrites, which are so valuable for real angina are of no use.

Insanity.

The writer admits at the outset that he has a very limited practical acquaintance with insanity; but to compensate for this, he has had an immense experience of neurasthenia, which may be regarded as the early and curable stage of many forms of insanity. In these strenuous times, however, we are used to

getting suggestions from outsiders, and some of these have proved very valuable. The Stokes gun, for instance, was devised by a manufacturer. Further, there is the excuse that although among the professors of mental science there are some of the most brilliant minds of the day, they seem to devote their energies to metaphysics and theoretical disquisition, rather than to practical results. While every other branch of medicine has advanced enormously of late years, the treatment of insanity stands much where it did in 1837, when mechanical restraint was abandoned; and it is still as much political as it is medical, the chief remedy being imprisonment, not so much for the benefit of the patient, as for that of the community. There are signs of dissatisfaction with treatment now that the war has brought many a family face to face with that greatest of the calamities that can befall it, the insanity of a fighting member! Now, of the symptoms of insanity the following occur in various forms of poisoning, endogenous or exogenous: delirium, depression, folie de grandeur, delusions, illusions, hallucinations, hebétude, paramnesia (mistaken memory), abulia (loss of will power), aprosexia (persistent inattention), obsessions, deterioration of conduct, exaltation, and, in the case of lead and alcohol, even dementia. This is surely evidence that insanity is often merely functional, and it is confirmed by autopsies, which rarely reveal an organic cause. But if it is only a psychosis, why are so few cases cured? In no other condition are experiments upon patients so justifiable as here. Has the influence of the endocrinal system been exhausted by its almost sole application to myxœdematous insanity, an epoch-making discovery in which alienists had no share? That interesting condition the thalamic syndrome rather points to the optic thalamus as possessing an internal secretion which

influences the emotions; but no one seems to have experimented with an extract of it in melancholia. Finally, the writer feels sure that the "automatic habit" is a great factor in the persistence of insanity. Can nothing be done to break the continuity of this habit? Has hypnotic suggestion ever been tried on a large scale? When we have to deal with a chronic indolent ulcer, we convert it first into an acute ulcer, and then we can cure it. Hebra turned incurable chronic eczema into an acute and curable form by rubbing it with liquor potassæ. Something like this should be possible with insanity, for the acute forms are fairly curable. Cannabis indica, perhaps, would turn a melancholia into a mania. Or the intensive hyoscine treatment of the drug habit by Cott's method, which keeps the patient for a long period delirious, may have an application. Although insanity is rarely organic, the word "functional," which is merely a cloak for ignorance, is not helpful. A "functional" disorder is commonly a blood disorder. It is in the blood that the toxins are found, and there, too, will be discovered some day the excess or diminution of each endocrinal secretion, whether or not these variations are due to toxin action, as may well be the case. It is in the blood, then, that the causes of insanity should be sought, and when they are found we shall speak, not of functional, but of hæmatic, nervous affections.

Great energy has been shown in recent years in the examination of the brain at asylums, and in none more than at Claybury; but, it is hardly to be expected that much light would be thrown upon mental diseases by so doing, and, in point of fact, it has not. When changes are found they can be explained in other ways. Atrophy, by disuse; arterio-sclerosis, by the same condition in some endocrinal organ known or unknown; while, as regards softening, the

breaking down of tissue and the absorption of part of the product would necessarily involve some toxæmia. The one recent addition to our knowledge is multiple minute hæmorrhage in shell-shock; but, as shown by subsequent lumbar paracentesis, a very short period suffices for absorption, so that the prolongation of the symptoms must be due to the automatic habit.

Our alienists seem hitherto to have expended their efforts upon building a massive foundation, and they have erected one worthy of a great gun emplacement. But what of the gun? This looks like a patched-up muzzle loader, and appears to have been manufactured by Messrs. Pinel and Conolly.

The reason for this regrettable stagnation lies in the overwhelming administrative work demanded of medical superintendents. Confine them to clinical work, and progress will be made.

THE NEURALGIC GROUP

THIS includes not only Single Nerve Neuralgia, such as Obturator, Supra-orbital, or Anterior Crural, but Pleurodynia, Mastodynia, Gastralgia, Enteralgia, and others. Except in coccygodynia and in the diabetic form of trigeminal neuralgia, the disorder is nearly always unilateral.

The group treatment is by phenazone, phenacetin, acetanilid, aceto-salicylic acid, etc., internally, and local anæsthetics externally. These, save for their action in breaking the automatic habit, are merely palliatives when a structural alteration or some external pressure continues to operate as the cause. There are cases, too, which are associated with certain diseases, as ague, syphilis, diabetes, and anæmia, where the group treatment is subservient to that of the disease in question. Malnutrition is a common predisposing cause of all forms of neuralgia, so that one feature of the treatment must be to combat this by generous living, fresh air, and exercise. Of local applications, menthol or cocaine ointment is of some use, but a solution of chlorbutol in glycerine, 80 grains to the ounce, or the liquor obtained by beating up in a mortar equal parts of chloral, menthol, and camphor, is better; while, if some rheumatism is associated with the neuralgia, olive oil and methyl salicylate in equal parts is more effective.

The writer came long ago to the conclusion that there is some analogy between the pain due to the pinching of a nerve by the contraction of a scar and

that which occurs when a nerve, possibly swollen by congestion, is pinched in the foramen from which it issues; and the good results that ensue from painting a blister at this point confirm the view.

Of internal drugs, phenazone is the most generally useful; but as it depresses the heart's action, the patient should lie down for a while after each dose and take it in combination with a heart tonic. Thus:

R	<i>Phenazon.</i>	..	..	..	̄iii.
	<i>Tr. Digitalis</i>	..	..	..	̄i.
	<i>Caffein. Cit.</i>	..	..	..	̄ss.
	<i>Aq. Ment. Pip.</i>	..	..	..	ad ̄vi.

M.

One tablespoonful every two hours till relieved.

For trigeminal neuralgia, butyl chloral hydrate is sometimes more successful; 5 grains should be dissolved in an ounce of orange-flower water and taken every hour, but after four doses it should be stopped. When the pain is associated with throbbing, the following is better:

R	<i>Tr. Gelsemii</i>	..	..	..	̄ii.
	<i>Pot. Brom.</i>	..	..	..	̄iii.
	<i>Aq. Chlorof.</i>	..	..	..	ad ̄vi.

M.

One tablespoonful every two hours.

Galvanism is occasionally of service, and there are cases where one is tempted to give morphia; but the danger of creating the morphia habit is very great, and especially so in neurotic persons. The treatment is completed by a course of quinine and a change of air.

Pleurodynia.

A belladonna plaster is often of service locally.

Coccygodynia.

Many of these cases are traumatic, but in the neuralgic form the best local application is made by rubbing up together a drachm of ext. bellad. and an ounce of glycerine. In addition, a laxative should be given.

Gastralgia.

Formerly hyperchlorhydria was confused with this, because both are relieved by food; but neuralgic cases are not uncommon where alkalies are useless. During the acute attack the following mixture should be given:

R	<i>Phenazon.</i>	..	..	..	̄ii.
	<i>Bismuth. Subnit.</i>	..	..	..	̄ii.
	<i>Caffein. Cit.</i>	..	..	..	̄i.
	<i>Aq. Ment. Pip.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful every four hours before meals.

Between the attacks, the indication is to improve the circulation in the stomach walls, and this can be done as follows:

R	<i>Liq. Sod. Arsen.</i>	..	..	..	℥x.
	<i>Bismuth. Salicyl.</i>	..	..	..	̄iss.
	<i>Syr. Zingib.</i>	..	..	..	̄i.
	<i>Mucil.</i>	..	..	..	q.s.
	<i>Inf. Gent Co.</i>	..	..	..	ad ̄vi.
					M.

One tablespoonful before each meal.

Enteralgia.

This requires the same treatment as the foregoing. It is sometimes a form of gout (see p. 92).

Mastodynia.

Before diagnosing neuralgia, organic causes must be carefully excluded. The following is a good local application:

R	<i>Tr. Bellad.</i>	..	..	..	..	ʒii.
	<i>Cocain Hydrochlor.</i>	..	..	..	..	gr. x.
	<i>Menthol.</i>	..	..	..	..	ʒi.
	<i>Glycerin.</i>	..	..	..	..	ad ʒii.

M.

To be lightly rubbed in at frequent intervals.

Otherwise the treatment is that of the group.

The pressure of the corsets is sometimes responsible, and riding stays should be recommended.

THE NEURITIS GROUP

THIS group includes all cases of inflammation of a nerve, wherever situated. The nerves the most commonly affected are those which are most exposed to pressure or injury, such as the sciatic, the circumflex, the ulnar, or the peronæal; but sometimes the cause is a general one—*e.g.*, gout, diabetes, diphtheria, or syphilis; while other cases occur in connection with wounds.

In the acute stage, the treatment is by absolute rest of the part, and the patient is better in bed. As in neuralgia, if the nerve issues from a bony or fibrous foramen, as do the sciatic and the supra-orbital, a blister should be painted at the point of exit. To the whole length of the nerve should be applied a hot flannel sprinkled with belladonna liniment and covered with cottonwool and oiled silk. This should be renewed every two hours. A splint may be advisable where the least movement provokes pain. Internally, the patient should have opium in some form. Thus:

R	<i>Pot. Brom.</i>	}	..	..	..	āā ʒii.
	<i>Nepenthe</i>					
	<i>Sodii Salicyl.</i>					
	<i>Aq. Chloroform.</i>		..	..	..	ad ʒvi.
			<i>M.</i>			

One tablespoonful every four hours.

In addition to this, a pill of calomel and colocynth should be taken every night. The diet must be liquid or semiliquid at this stage. As the acute symptoms subside, more solid food is given, and at the same time the hot applications are superseded by

linimentum bellad. c. chloroform., or the local applications specified for neuralgia, and if there is a rheumatic element in the case, by equal parts of olive oil and methyl salicylate. The treatment must also be modified by the cause; thus, gout requires colchicum; rheumatism, acetosalicylic acid; and malaria, quinine. The patient may now get up for part of the day, but the less an affected limb is moved the better. Sleeplessness is best met by veronal or paraldehyde. When the pain becomes of a dull nature, massage and passive exercises should be commenced, and a tonic given instead of the sedative mixture. Thus:

R	Quinin. Sulph.	..	..	..	̄ss.
	Ferr. Sulph.	..	..	..	̄i.
	Acid. Sulph. Dil.	..	..	..	̄ii.
	Aq. Chlorof.	..	..	..	ad ̄vi.
	M.				

One tablespoonful in water every four hours.

It is not rare for the pain of neuritis to hang about for months; but this is generally due to inadequate treatment during the acute stage. The best method of dealing with such cases is by radiant heat, followed by salicylate ionisation, or, alternatively, by diathermy.

Herpes Zoster.

This is essentially a form of neuritis. The internal group treatment requires but little modification. The vesicles should be dusted with boric acid powder and covered with cottonwool, oiled silk, and a bandage. When they burst, the powder is replaced by cocain and boric acid ointment, 5 grains to the ounce.

Motor Neuritis.

The treatment of this condition is dealt with under Multiple Neuritis, p. 139.

THE TRANSIENT SPASM GROUP

THE group includes Angina Pectoris, Cardiac Asthma, Spasmodic Asthma, Nocturnal Enuresis, Œsophageal Spasm, Cramp, Intermittent Limp, Spasmodic Stricture, and perhaps Raynaud's Disease. Some of these, however, are dealt with under other groups. Colic forms a subgroup, and is considered separately.

The group treatment consists in the use of some drug which will relax the spasm, and where possible the application of warmth.

Spasmodic Asthma.

The great stand-by is stramonium fumigation, but the addition of other drugs makes it more efficient. Thus:

R	<i>Pot. Nit.</i>	}	āā	ȝss.
	<i>Pulv. Stramon. Fol.</i>					
	<i>Pulv. Hyoscyam. Fol.</i>					
	<i>Pulv. Bellad. Fol.</i>					
		M.				

About a level teaspoonful should be heaped into a cone on a tin-lid and lighted near the patient; or it may be made into cigarettes.

For slight cases medicated paper suffices. It can be made thus:

R	<i>Pot. Nit.</i>	..	..	..	..	ȝii.
	<i>Ext. Stramon.</i>	..	..	..	..	ȝiss.
	<i>Aq. Calid.</i>	..	..	..	..	ad ȝiii.

Soak strips of white blotting-paper in the liquid; dry, and keep ready for use.

Sprays are specially useful for travellers; but in general they are not so efficacious as fumigations. Thus:

R	<i>Atropin. Sulph.</i>	..	..	..	gr. $\frac{1}{3}$.
	<i>Cocain.</i>	..	..	..	gr. v.
	<i>Menthol.</i>	..	..	..	gr. x.
	<i>Parolein.</i>	..	..	..	ad $\bar{3}$ i.

A hypodermic injection of adrenalin will sometimes cut short an attack. In bad cases oxygen inhalations may be necessary.

The attacks are generally due to a reflex cause, and this may be found in the nose, throat, or ear, or rarely, in the skin, as in ichthyosis. These organs, therefore, must be examined and treated. But in many cases the cause is temporary, such as the inhalation of dust or an attack of indigestion; whilst others are associated with renal disease or uræmia. Between the attacks, therefore, the patient's meals must be light, dry, small and frequent, and include few vegetables. A course of iodide of potassium seems to prolong the intervals; but the best way is for the patient to change his residence; and as it is impossible to say in advance what air will suit him, he should move about from one hotel to another in different districts till he finds an improvement. The value of changed climatic conditions suggests that here again is a case of breaking an automatic habit.

Cardiac Asthma.

This is due to contraction of the lumen of the coronary artery supplying the right ventricle. Nitrite of amyl should be inhaled and brandy given freely, while a mustard leaf should be placed upon the præcordium. During the intervals the treatment is that of arterio-sclerosis (p. 65).

Cramps.

The treatment depends upon the cause, and the commonest cause is flatulence, so that an alkaline and carminative mixture is indicated. A dose of it taken at bedtime will usually ward off the night attacks which are so common. In addition, the diet must exclude leguminous and root vegetables and other causes of distension. Another common cause is a loaded rectum. The serious cases depend upon diabetes, lead-poisoning, cholera, etc. The cramps associated with pregnancy are best dealt with by abdominal support. The local treatment consists in rubbing and hot applications.

Intermittent Limp.

This is a transient spasm of the muscular coat of an artery, usually the iliac. Tetranitrate of erythrol is of service, and if taken regularly there is a chance of preventing recurrence. All that can be done at the time is to rest the limb and employ hot applications.

Nocturnal Enuresis.

The standard treatment is by belladonna, and it is more effective when combined with a bromide. For a child six years old the following mixture is suitable:

R	Pot. Brom.	..	..	..	..	ʒi.
	Tr. Bellad.	..	..	..	..	ʒss.
	Syr. Aurant.	..	..	..	..	ʒss.
	Aq.	..	..	..	..	ad ʒiiss.

M.

One teaspoonful to be taken half an hour before bedtime.

In addition to medicine, other measures have to be employed: thus, the patient must take no drink for three hours before going to bed, and he must lie on a

hard mattress and have no superfluity of bedclothes. But many cases are due to such reflex causes as worms, adenoids, phimosis, calculus, etc., and must be treated accordingly. If the urine is very acid, an alkali must be given. Some cases are permanently cured by galvanism applied to the membranous part of the urethra; and others, by keeping the patient continuously in bed for three days. There is some advantage in preventing the child from lying on his back, and this may be done by fixing a reel of cotton there with strapping. Another plan is to put a pillow under the mattress, so that the pelvis is higher than the shoulder-blades. (See also *Automatic Habit*, p. 5).

Precipitate Micturition.

This is a condition which occurs chiefly in connection with spastic paralysis; but it is benefited to some extent by belladonna.

Spasmodic Stricture.

The catheter is the remedy, but a hip-bath is effectual in slight cases, the patient being enjoined to try to pass water naturally and without straining while in the water; for as in other semi-automatic acts, an intellectual effort means failure. To prevent recurrence, as the urine in these cases is commonly acid and concentrated, the patient should eat largely of green vegetables and drink freely of barley-water. Stimulants are better avoided, except, perhaps, gin or hollands. Many cases have a reflex origin, such as piles, fissure, rectal ulcer, or worms, and others are due to sexual or alcoholic excess. It is important, if possible, to prevent the patient from falling into the catheter habit.

Spasm of Œsophagus.

This, which occurs chiefly in hysteria, is treated by the same internal measures. Locally a sudden strong faradic current with a previously given assurance of relief is often effectual. Alternatively, the Scotch douche should be tried.

Hiccough.

Lalande's treatment, which consists in pulling the tongue forward with the finger and thumb and keeping it there for two minutes, is often successful; and some patients find they can overcome it by sipping water. Lately, compression of the eyeballs has been recommended. For a dangerous case, if nitroglycerine fail, a full dose of tr. chloroformi et morphiæ, or even a hypodermic injection of morphia, should be given. An ice-bag to the epigastrium assists the action of other remedies.

For Angina Pectoris, see p. 102.

THE COLIC GROUP

COLIC is an attempt to shift or remove an obstacle by intermittent muscular contractions. A physiological example is seen in labour pain.

The group includes Hepatic, Pancreatic, Renal, Ureteral, Urethral, Fallopian, Appendicular, Intestinal and Uterine Colic.

The group treatment consists in giving opium and belladonna or administering chloroform. Thus:

℞	<i>Tr. Belladonnæ</i>	..	..	..	ʒiss.
	<i>Tr. Chloroformi et Morph.</i>	..	..	..	ʒiii.
	<i>Aq. Anisi</i>	..	..	..	ad ʒvi.

M.

One tablespoonful every three hours.

Alternatively a hypodermic injection of morphia and atropin may be given. Where possible hot applications should be made externally.

The opiate is given not so much to relieve pain as to relax the muscular fibres in front of the obstruction. Nature, with her usual blindness, contracts the fibres reflexly both behind and in front of the object she desires to remove, just as in diarrhœa she pours out fluid on both sides of it. At all events, it is a clinical fact that the combination does facilitate the passage of the small calculi.

Hepatic Colic.

Five grains or more of calomel given dry on the tongue and washed down with water should precede the opiate. Vomiting rather helps expulsion, and

should not lightly be interfered with; indeed, it is sometimes worth while to give an emetic. Olive oil is a favourite remedy, but it has never given the writer any satisfaction. It is difficult to conceive it creeping into the common bile duct at all; but if it did, it would be more likely to follow the course of least resistance into the pancreatic duct than penetrate the contracted hepatic duct. Very frequently, too, it is vomited immediately. If given, three 2-ounce doses are required at intervals of two hours. It is still more unlikely that Durande's ether and turpentine capsules can have any solvent effect. Intermittent and sudden pressure upon the liver through the floating ribs has been recommended, and may help; but expulsion by thumb pressure upon the gall-bladder, as introduced by Dr. G. Harley, has proved dangerous in some instances. Operation is indicated when recurrences are frequent and when there is a strong family history of cancer; but the writer doubts whether it is often necessary. He can recall a large number of patients who, after one or two attacks, have lived in perfect comfort for a great number of years. The mere presence of a gallstone does not necessitate operation, for it is exceedingly common to find, post-mortem, gallstones with no history of colic whatever. To lessen the chance of recurrence the patient should take a morning dose of Glauber's salt twice a week over a long period, eat little starchy food, and take plenty of outdoor exercise. Tight-lacing must be avoided.

Renal Colic.

The group treatment requires very little modification. Provided micturition has not ceased, it is well to increase the flow of urine by making the patient take copious draughts of water, or in hot weather, when most of this would be excreted by the skin, by

giving him diuretin. The treatment given with the idea of preventing recurrence depends upon the nature of the calculus. If the urine is strongly acid, uric acid is pointed to, and a dose of citrate of potash large enough to keep it just acid, but not enough to make it alkaline, should be given every night. Or, alternatively, Vichy water drunk with meals may be enough. Clinically piperazine seems to be a help, and the writer has had many patients who swear by it; but chemists say it dissolves uric acid only *in vitro*. Organic chemistry, however, should not always have the last word; for, in the past, it has been responsible for many of those backward swings of the pendulum which have hindered the progress of our art. Urodonal is said to be a still more powerful solvent, but one does not like to order a drug of the composition of which one is ignorant, for it may have actions which are deleterious. Whey in large quantities has been recommended. Properly speaking, the patient should live on a purin-free diet; but this involves more self-denial than the prospective benefit would warrant.

Phosphatic calculi are generally associated with alkaline urine containing abundant mucus, and should be treated by dilute hydrochloric acid and nitrogenous diet. Oxalate of lime calculi are associated with hæmaturia, and diuretin should be given:

R *Theobrom. et Sod. Salicyl.* ℥ii.
Aq. Chlorof. ad ℥viii.

M.

One-eighth part three times a day.

The oxalate can be always recognised after rhubarb, gooseberries, asparagus, and strawberries have been eaten, so that these must be barred. It also occurs in connection with dilated stomach (see p. 131). A patient liable to gravel should pass water through a

hair-sieve while under treatment, so as to intercept any particles which the eye might otherwise miss.

Hydronephrosis.

This is due in 59 per cent. of the cases to the impaction of a calculus, so that it is worth while, before deciding upon an operation, to make an attempt to deal with it medically. The calculus is nearly always of the uric acid variety, and the solvents mentioned for renal colic should be tried in conjunction with opium; for the obstruction, being intermittent, is obviously partly due to spasm:

R	<i>Piperazin.</i>	..	..	..	..	gr. x.
	<i>Nepenthe</i>	..	..	..	..	℥x.
	<i>Tr. Bellad.</i>	..	..	..	..	℥v.
	<i>Aq. Anis.</i>	..	..	..	..	ad ℥i.

M.

To be taken three times a day, followed by a glass of Vichy water.

Appendicular Colic.

This differs from recurrent appendicitis in the attacks being slight and in having gone on, perhaps, for years. Consequently the danger of real appendicitis is small. The treatment for the group needs but little modification. In the interval two teaspoonfuls of paraffin should be taken at night, and a soap enema containing an ounce of paraffin administered once a week. Some cases cease to give trouble after a time; but others, if sufficiently inconvenienced must undergo operation.

Intestinal Colic.

This arises much in the same way as does colic elsewhere—*i.e.*, it is an effort to expel an obstruction

in a tube. The obstruction may be a concretion, but it is usually undigested food, such as swollen-up raisins, peas, keratin-coated pills, undissolved tablets, pieces of bone, etc. There is really plenty of room for these to pass, but the reflex spasm generally grips the object instead of propelling it.

The group treatment should be preceded by a large dose of castor oil, if in the small intestine; or a large douche at low pressure, if in the large. Before doing anything at all, however, it is absolutely essential to exclude an organic cause such as hernia, intussusception, growth, or appendicitis, for which an operation is the only remedy. To prevent recurrence, the patient should take, over a long period, a nightly dose of paraffin and a biweekly dose of cascara; his diet should be non-residuary, and he should wear a flannel belt.

Uterine Colic.

This occurs chiefly in dysmenorrhœa, and is due then to clots, membranes, polypi, fibroids, flexions, or contracted cervix; what is termed tubal colic is nearly always due to flexions. The group treatment suffices for cases which do not demand operation. Neuralgic conditions imitate colic very closely, and can be adequately treated by phenazone.

Colic in Infants.

If the attack follow closely upon an improper meal, an emetic should be administered; but if the interval is longer, a full dose of castor oil must be given, followed by an enema slowly introduced. Hot flannels should be applied to the abdomen. To prevent recurrence, strict instructions as to diet must be observed; but sometimes the fault is in the mother's milk. This is generally shown to be the

case by the stools containing curds, and the remedy is to give the infant an ounce or two of warm barley-water before putting it to the breast. A little grey powder twice a week not only clears the bowel, but acts as an intestinal antiseptic.

Lead Colic.

The group treatment suffices for the pain. For elimination, a drachm or two of sulphate of magnesia should be taken every morning, and 5 grains of iodide of potassium three times a day.

THE TONIC SPASM GROUP

TONIC spasm occurs in Tetanus, Tetany, Strychnine Poisoning, Hydrophobia, Thomsen's Disease, and Torticollis. It is also a feature in all upper neurone paralyses.

The group treatment is by chloral and, where possible, hot local applications.

Tetanus.

Treatment by the tetanus antitoxin has superseded all other; but it takes time to act, and during this period chloral is required. Thirty grains should be given at first, and this should be followed by 20 grains every two hours. In a bad case chloroform inhalation may be necessary. The dose of the antitoxin is 10 to 15 c.c. of the fluid serum, or 5 grammes of the dry form dissolved in sterilised water. The injections may have to be repeated several times. If the antitoxin fail or be unprocurable, the chloral treatment should be reinforced by intraspinal injections of 2 c.c. of sterilised 25 per cent. solution of sulphate of magnesia. Brain substance, which is said by Wassermann to have the property of combining with tetanus toxin, has had a certain amount of success. In all cases the wound must be enlarged and treated antiseptically, the room darkened and kept free from noise, and the nourishment (which must be liquid) given, if necessary, through a nasal tube.

Tetany.

This condition generally arises from intestinal irritation; the treatment, therefore, begins with a full dose of castor oil. For the spasm, chloral is the great stand-by; but it is best to give it in combination with other drugs:

℞	<i>Chloral. Hydrat.</i> }	..	..	..	āā	ʒii.
	<i>Pot. Brom.</i> }	..	..	..
	<i>Tr. Bellad.</i> ..	..	..	..		ʒi.
	<i>Aq. Cinnamom.</i> ..	..	..	..		ad ʒvi.

M.

One tablespoonful to be given every hour till relieved.

In bad cases ordinary sedatives are not sufficient, and chloroform must be administered.

Locally, hot applications agree best with most patients; but cold suits some better. The patient must be kept throughout in a warm room on liquid diet.

When the acute symptoms have subsided, an intestinal antiseptic such as salol should be given in 10-grain doses every two hours. Some cases, especially in children, are due to hypothyroidism, and can be cured by thyroidin.

In convalescence, tonics, other than strychnine, will be called for, and special treatment may be required for rickets or dilated stomach. A recent treatment is by parathyroidin. Calcium lactate also may be indicated.

Strychnine Poisoning.

The stomach must be washed out with a strong solution of permanganate of potash two or three times. At the same time an injection of 5 minims of apomorphine should be given, followed by repeated hypodermic injections of chloral hydrate in 5-minim doses. But it may be necessary to administer chloroform or employ artificial respiration.

Hydrophobia.

The patient, after a bite by an indubitably rabietic dog, should be sent without delay to a Pasteur Institute. Temporary relief is afforded by morphia injections or chloroform. The disease has been practically stamped out in Great Britain for many years now, and the patient may be suffering from lyssaphobia only. The writer once had a case with every symptom of hydrophobia, including a history of a bite; but, as something was said about the patient having had a similar attack before, a large dose of chloral was given, and after seven hours' sleep recovery was complete.

Torticollis.

A course of belladonna and bromide, together with massage and a retention apparatus, suffices in mild cases; but more severe ones require tenotomy.

Thomsen's Disease.

The patient is all the better for a life of active muscular exercise, and deteriorates if this point is neglected. Otherwise there is nothing to be done.

Syringomelia and Hæmatomyelia.

No treatment is available for these diseases; but the patient must be very careful to guard himself against injuries, even of the most trivial kind. Further, he must avoid overexertion.

THE CLONIC SPASM GROUP

THIS group applies only to cases in which the spasm is the essence of the disease. It includes Epilepsy, Eclampsia, Chorea, Paramyoclonus Multiplex, Paralysis Agitans, and Spasmus Nutans.

The group treatment consists in giving bromides, hyoscine, or arsenic. The usual bromide salt is that of potassium, but hydrobromic acid or the mixed bromides are sometimes to be preferred, while the action of hyoscine hydrobromide is not entirely due to the base. Arsenic reinforces the bromide action as well as being useful on its own account; but it is too slow for acute cases if given alone.

Epilepsy.

The moment the patient recognises his aura, he should crunch a nitroglycerine tablet, for this will sometimes abort an attack. During an attack care must be taken that the patient does not injure himself; but he should not be held down, for this only exhausts him. The neckwear must be loosened and he must have plenty of air; but no stimulant ought to be given. To prevent him biting his tongue, a stick should be placed between the teeth; and to prevent the tongue falling back, the head should be raised; it is rarely necessary to hold it with the forceps.

The succeeding stupor has a restorative effect, and if interfered with the free interval is likely to be shortened. The treatment henceforth resolves itself

into a course of bromide, the usual dose being 15 grains three times a day, salt being omitted from the dietary. The addition of a little arsenic lessens the risk of producing acne. Thus:

R	Pot. Brom.	..	..	..	..	̄iii.
	Liq. Sodii Arsenat.	..	..	..	..	℥xx.
	Syr. Prun. Virgin.	..	..	..	..	̄vi.
	Aq.	..	..	..	..	ad ̄vi.

M.

One tablespoonful to be taken three times a day.

It is well to omit the arsenic from time to time, otherwise we may be compelled to give the medicine after meals, when it is less efficient. A convenient method for travellers is to have the bromide made into 15-grain powders, and to eat one at the side of the plate in lieu of table salt. When bromism results, bromopin in $\frac{1}{2}$ -drachm doses should be substituted for the potassium salt. Errors of refraction must be corrected.

The diet of an epileptic patient should include no alcohol, very little tea or coffee, and a minimum of meat. In unyielding cases, it should be purin-free. Children, at any rate, need something to counteract the lowering tendency of the bromide, and should take cod-liver oil from time to time; while adults are all the better for an occasional tonic.

Puerperal Eclampsia.

The prophylactic treatment consists in a milk diet, frequent warm baths, and a course of bromide; but when the fits begin a hypodermic injection of morphia gr. $\frac{1}{2}$ should be given, and half this dose repeated every half-hour till the fits cease, providing that the total quantity do not exceed 3 grains. Albuminuria is not a contra-indication here; but

aperients will be required. Should anuria set in, large subcutaneous saline injections must be administered.

Convulsions in Children.

A hot bath is sometimes enough, but it must be followed by a bromine mixture. If it have no effect, 2 grains of chloral should be given to the infant in a starch enema. Status epilepticus requires chloroform inhalation, and this may be used for any severe case. Lancing the gums is now looked upon with scorn; but the writer, who has had far more experience of this disorder than most of those who write about it, is convinced that if limited to cases where the white tooth can be seen under the gum it is both a scientific and an efficient treatment. Why should we not remove a reflex cause? If the gum is thick and a hard scar likely to result from an incision, it is a different matter.

After the attack a grey powder should be put on the tongue. In children past dentition the cause is nearly always intestinal irritation, and a full dose of castor oil is indicated.

Chorea Major.

The patient must be prevented from injury by suitably placed pillows. Both arsenic and salicylates are too slow here. The best remedy is a combination of chloral and bromide:

R	<i>Ammon. Brom.</i>	..	..	..	ʒii.
	<i>Chloral. Hyd.</i>	..	..	..	ʒiiss.
	<i>Syr. Aromat.</i>	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	ad ʒvi.
					M.

One tablespoonful every four hours.

Small doses are useless, and the prescription above given is suitable for a child of ten. As improve-

ment sets in the chloral must be very gradually withdrawn. The treatment then resolves itself into that for chorea minor.

Chorea Minor.

It is important to keep the child in bed till it is clear that there is no endocarditis, and for the same reason it is well to begin with salicylates. Afterwards, the treatment is by arsenic and bromide. Thus, for a child of six:

R *Pot. Brom.* ʒi.
Liq. Sod. Arsenat. ℥xv.
Syrup. Simp. ʒ ss.
Aq. Ment. Pip. ad ʒiii.

M.

Two teaspoonfuls three times a day.

Later, the bromide may be replaced by a tonic:

R *Liq. Sod. Arsenat.* ℥xv.
Tr. Cinchon. ʒii.
Syr. Aurant. ʒi.
Aq. ad ʒiii.

M.

Two teaspoonfuls three times a day after meals.

At the same time massage and re-educating exercises should be instituted. There is a tendency to acute dilatation of the heart in convalescence; the patient, therefore, should be made to lie down after each meal.

Senile Chorea.

This form of chorea does not benefit from arsenic; and if large doses of bromides fail, the following mixture should be given:

R *Liq. Hyoscin. Hydrobrom.* (1 in
 1,000) ℥xl.
Aq. Anisi ad ʒvi.

One tablespoonful three times a day.

Post-Hemiplegic Chorea.

This is treated in the same way as the senile form.

Huntington's Chorea; Dubini's Chorea.

The symptoms are mitigated somewhat by bromides; but arsenic has no effect, and treatment of any sort is unsatisfactory.

Paramyoclonus Multiplex.

The bromide and arsenic mixture does a little good; but not much can be done. Electricity has been recommended.

Spasmus Nutans.

Bromides are of some service; but as the patients are commonly rickety, cod-liver oil, suitable dieting, and fresh air are of more importance. Defective vision must be sought for, as that is sometimes responsible. (See Automatic Habit, p. 5.)

Paralysis Agitans.

Ordinary bromide treatment is useless, but the hyoscin salt recommended for senile chorea is sometimes of signal service, and the parathyroidin treatment appears promising. Some patients benefit by hot baths or regulated exercises, and many find themselves better after a shake-up in an omnibus; this fact led to the introduction of vibratory chairs, but they have not answered expectations.

Disseminated Sclerosis.

Arsenic and iodides seem to do a little good, and passive exercises and massage at any rate help to check the advance of the disease; but it must be confessed that no treatment has proved of much avail.

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The patient should rest twelve hours out of the twenty-four, and his surroundings should be made as cheerful as possible.

Delirium Tremens.

Alcohol must be withdrawn gradually, beginning with about one-quarter the quantity that he has been in the habit of taking. To make up for this deprivation, abundant liquid nourishment should be insisted upon; a male attendant is necessary, and great care must be taken that the patient does not injure himself or others, the window being screwed up. At the beginning of the attack a drachm of pulv. jalap. co. should be given. Then, as long as the delirium is acute, the best drug is hyoscine hydrobrom., of which gr. $\frac{1}{100}$ should be given hypodermically; or, alternatively, 5 minims of the 1 in 1,000 solution by the mouth every two hours. Morphia and chloral are falling into disuse, partly because a habit might be created. Should the heart's action give rise to anxiety, the following mixture is indicated:

R	<i>Caffein. Cit.</i>	..	..	..	ʒi.
	<i>Tr. Strophanth.</i>	..	..	..	℥xx.
	<i>Sp. Ammon. Aromat.</i>	..	..	..	ʒss.
	<i>Aq.</i>	..	..	..	ad ʒvi.
			M.		

One tablespoonful every three hours.

In convalescence the patient should have a complete change of air and surroundings, and is all the better to be away from his family, provided he can get no alcohol (see p. 126).

UNGROUPE DISEASES

Abrasions.

THE modern treatment with iodine is a great advance; but the chloroform solution (1 in 30) appears to be better than the tincture, for it is less painful and it does not destroy cells. In either case the brushing must be deep and thorough, and there must be no preliminary washing.

Achylia Gastrica.

The stomach requires a rest in these cases. The patient should be in bed, and for the first two days have nothing but water. Then for a week he should live on predigested food, such as Benger, peptonised milk or cocoa, panopeptone, etc. He next goes on to whey, malted milk, ovaltine, thin meat soups, and so on through, in succession, arrowroot, milk puddings, omelettes, fish, chicken, and meat. During this last period he should take the following mixture:

R *Glycerin. Pepsini.* $\bar{\bar{3}}$ iss.
Tr. Card. Co. $\bar{\bar{5}}$ vi.
Inf. Gentian. Co. ad $\bar{\bar{5}}$ vi.

M.

One tablespoonful with each meal.

Amenorrhœa.

It is not generally recognised that there is a plethoric as well as an anæmic form.

The plethoric form occurs generally in fat or gouty

subjects. The treatment consists in giving 2 drachms of sulphate of soda every alternate morning in hot water and a capsule of 5 minims of apiol three times a day. Or the following pill may be substituted for the apiol:

R *Ext. Ergotæ* gr. ii.
Pil. Aloes et Myrrhæ gr. iii.
M.

Fl. pil. Two to be taken three times a day.

For the anæmic form 10 grains of Blaud's pill three times a day is often sufficient; but it may be reinforced by a hot hip-bath twice a week. In more obstinate cases give the following in addition to the pills:

R *Ext. Ergot. Liq.* ℥iv.
Acid. Phosph. Dil. ℥ii.
Aq. Chlorof. ad ℥vi.
M.

One tablespoonful three times a day after meals.

The patient requires nourishing food, warm clothing and good air.

Amyotrophic Lateral Sclerosis.

Though treatment is not very hopeful, there is some chance of retarding the progress of the disease by the following:

R *Ferr. Redact.* gr. ii.
Phosphori gr. $\frac{1}{30}$.
Serpi q.s.
M.

Fl. pil. To be taken three times a day before meals.

Cod-liver oil and arsenic are both useful, but strychnine is contra-indicated. Electricity, massage, and passive movements are advisable, and the diet must be generous.

Anuria.

True anuria requires cupping of the loins together with 10-grain doses of diuretin well diluted. In a bad case an intravenous injection of saline will be required.

Asphyxia.

The treatment consists in artificial respiration accompanied by flicking, slapping, or dry rubbing, and the inhalation of ammonia.

The usual method employed for the newborn is slow mouth-to-mouth breathing, with simultaneous deep pressure upon the epigastrium, so as to hinder inflation of the stomach. Other methods are rhythmic traction of the tongue, and interrupted inflation through a catheter inserted into the trachea. Sylvester's method is equally available for infants and adults. The patient lies on his back with a pillow under his shoulder-blades and the tongue drawn forward. The operator, grasping the arms above the elbows, moves them upwards, outwards, and then inwards, till they reach the side of the head. For expiration, the arms are brought down to the front of the chest with a deep compressing action. The manœuvre is repeated every three seconds. Schäfer's method is especially suitable for immersion cases, because the mouth being dependent, the water can run out. A pillow having been placed under the xiphoid cartilage, the operator kneels astride the patient with the hands pressing on the lower ribs and the elbows stiff. Then, every five seconds, the weight of the operator's body is made to press upon his hands. For inspiration, he simply takes the weight off by rising a little and relaxing the elbows.

In either method the movements must be kept up for half an hour if breathing has not been resumed

before. When recovered the patient must be rubbed down, placed between hot blankets, and given hot coffee and brandy. If there is much shock, a strychnine injection must be given.

Bedsore.

To prevent these, the skin must be carefully washed every morning, and when dry sponged with methylated spirit and dusted with boric powder. It is a good plan to roll the patient over from side to side a few times a day. If an air cushion is used, the horseshoe shape is better than the circular. Ointments should be avoided unless there is incontinence of urine. In the broken stage the sore must be washed frequently with lysol 1 in 100, and covered with dry absorbent dressings. In bad cases skin-grafting may be necessary. A little opium helps the healing, if there is no reason against its use.

Bites and Stings.

For snake-bite a tight ligature must be passed round the limb above the wound, and the latter cut out and well swabbed with permanganate of potash in strong solution, while a 1 per cent. solution of the same is injected above the wound. If available, 15 c.c. of antivenene should be injected into the flank. Syncope, failure of respiration, and convulsions, must receive appropriate treatment.

In the case of insects the sting should be squeezed out and weak ammonia applied. For mosquitoes carbolic lotion is preferable. The best preventative is tincture of pyrethrum. Scorpion stings should be treated with powdered ipecacuanha.

Boils.

A boil may sometimes be aborted by injecting into its base a drop of carbolic acid. Otherwise the

treatment is as follows: First, make into it a linear incision and squeeze out the pus. Then, as soon as possible, remove the slough, swab out the cavity with iodine and chloroform 1 in 30, pack it with antiseptic gauze, and over this apply hot boric fomentations. Internally, a 30-minim dose of dilute sulphuric acid in 2 ounces of water should be given every four hours. Later, bark and ammonia are indicated. Good food, healthy surroundings, and, to prevent recurrence, antiseptic washing of contact neck-clothing are needed. Eggs will produce boils in some persons, and milk from unhealthy udders in others.

Bromidrosis.

The feet should be bathed three times a day, and after having been dried, sponged with the following lotion:

R	<i>Tr. Iodi</i>	..	..	..	..	℥xx.
	<i>Pot. Iod.</i>	..	..	..	..	ʒii.
	<i>Aq. Rosæ</i>	..	..	..	..	ad ʒiii.

M.

S.: *The Lotion.*

Alternatively the following powder should be dusted over the entire feet and dropped into the socks:

R	<i>Pulv. Amyli</i>	..	..	..	ʒv.
	<i>Acid. Salicyl.</i>	..	..	..	℥ 45.
	<i>Pulv. Talc.</i>	..	..	..	ʒiii.

Ft. Pulv.

(*Fas est ab hoste doceri!* This is used in the German Army.) The socks must be changed twice a day. Permanganate of potash is effective, but it is apt to bring out pimples.

Burns.

If there is erythema only, a powder composed of oxide of zinc and starch, 1 to 3, should be dusted on the part and covered with cottonwool. If blisters have formed, they should be cut and covered with lint soaked in picric acid solution, antiseptic wool, and a bandage. A splint is often advisable; but oiled silk must not be used. The solution is made thus:

R *Acid. Picric.* ʒss.
Alcohol Absolut. ʒss.

Dissolve and add water to 8 ounces.

This is valuable for burns in all stages; but it will stain the hands unless they are first smeared with vaseline. Later carbolised oil may be substituted. The "third degree" of burn is that where the skin is destroyed. The part must be washed with 1 per cent. lysol after removal of foreign matter such as shreds of clothing; then, the excess of antiseptic having been washed away with normal saline solution, and as much slough cut away with the scissors as possible, the part is dressed with either the picric acid lotion or the following ointment:

R *Iodoform.* gr. iv.
Liq. Carbonis Deterg. ʒii.
Paraff. Moll. ad ʒiv.

Fiat unguentum.

If a large granulating surface is left, the treatment is that of an ulcer (p. 211); if an ugly scar remains, that of keloid (see also Sloughs, p. 43). Shock may have to be dealt with. There is an old maxim that a deep burn on the trunk larger than the patient's hand is dangerous to life.

Bursitis.

In the acute form a poultice should be applied till the tenderness has disappeared, when lint soaked in a lead and opium lotion should be substituted. If suppuration follow, the bursa must be laid open and packed with antiseptic gauze. Chronic bursitis requires painting with iodine, the two tinctures being mixed in equal proportions. Alternatively unguentum hydrargyri may be rubbed in or Scott's dressing applied. Constitutional treatment for gout, rheumatism, syphilis, or tuberculosis may be necessary.

Cancer, Inoperable.

Good results are obtained occasionally by radium, X rays, or diathermy, and in the case of the breast, by oöphorectomy, together with, if the patient is pregnant, induced abortion. Radium buried in tubes is almost a specific for round-celled sarcoma. In the last stage of cancer the chief requirement is morphia, but much can often be done to ease the pain and improve the sense of well-being by careful dressing of the wound, free drainage, and the breaking down of adhesions.

Carbuncle.

Autogenous vaccine is now largely used, and with a considerable amount of success. Otherwise the treatment in the early stage consists in the inunction of glycerine and belladonna (p. 115), and later hot fomentations. The sulphuric acid mixture recommended for boils is also valuable here. In the second stage, when local softenings appear, these should be freely incised, the contents scraped out and the cavity swabbed with pure carbolic acid. Hot boric lint is then laid over the carbuncle and covered with oiled silk and cottonwool. Healing may be promoted

by bridging over the gaping wound with strapping, so as to approximate the edges. Concurrently bark and ammonia should be given internally, and a generous diet, to include port wine, ordered. The digestive method (p. 43) should be tried for large sloughs.

Chalazion.

After a preliminary bathing with hot boric acid lotion, yellow oxide of mercury ointment, 4 grains to the ounce, should be applied. When this fails, the chalazion, if small, should be shaved off; or, if old, either the granulation tissue scooped out or the growth removed after dissection.

Conjunctivitis.

In the muco-purulent form, apply 2 per cent. solution of nitrate of silver once a day for three days, wash out with warm water, and after an interval of two hours employ the following lotion warm in an eye-bath:

R	Zinci Sulph.	..	..	..	gr. viii.
	Acid. Boric.	..	..	..	ʒiiss.
	Acid. Hydrocyan. Dil.	..	..	..	ʒss.
	Aq. . . . .	..	..	..	ad ʒiv.

M.

To be used every four hours with an equal quantity of hot water.

This should be continued for some time after stopping the silver treatment; in mild cases it will serve without it. The edges of the eyelids should be smeared with vaseline to prevent them adhering, and a shade, but no bandage, worn. Internally bromide of potassium is useful. If the pain is excessive, a solution of cocaine hydrochloride should be instilled.

The purulent form, in two-thirds of infants, is

gonococcal; while in the remainder, it is associated with the pneumococcus, the *Bacillus coli*, or the Koch-Weeks bacillus. The eyes must be kept free from discharge by frequent washings with warm boric lotion in saturated solution, and the palpebral conjunctivæ painted once or twice a day with a 2 per cent. lotion of nitrate of silver. Later protargol, which is less painful, may be substituted for the silver salt. This treatment must be continued till the discharge becomes thin, scanty, and quite free from any of the organisms named. If the cornea become cloudy, the following lotion should be dropped into the eye:

R	<i>Cocain. Hydrochlor.</i>	..	..	gr. v.
	<i>Physostigi Sulphat...</i>	..	..	gr. i.
	<i>Aq. dest.</i>	..	..	ad ʒi.

In the gonococcal ophthalmia of adults iced compresses are required in the early stage. Otherwise the treatment is the same.

Constipation, Dry.

The indication is to take more fluid. Many people find a tumbler of hot water taken fasting a great help; but this is certain to lose much of its effect by premature absorption. The writer suggested (*Edinburgh Medical Journal*, 1902) that a colloidal drink would meet the difficulty, and experience has confirmed this view. To make it, a teaspoonful of Nelson's gelatine is put in a tumbler of cold water overnight; the next morning the superfluous water is poured off and the swollen gelatine dissolved by stirring it in very hot water. This should be drunk in sips while dressing.

Drugs should be avoided if possible; but there is no objection to a lubricant, and this is the function of paraffin, two teaspoonfuls of which should be taken

every night. Still, something more than a lubricant is required at times, and the following pill will be found useful:

R *Euonymin.* gr. i.
Ext. Aloes gr. iss.
Ext. Hyoscyami gr. ii.

M.

Fiat pil.

Cornea, Ulceration of.

When the discharge, if any, has ceased, a small piece of boric ointment should be inserted under the lower eyelid twice a day, and the eye covered with a pad of cottonwool and a bandage. If the irritation is slight, an ointment composed of atropin and vaseline 4 grains to the ounce is better than the boric ointment; and if the ulcer is very indolent or threatens perforation, eserin is preferable to either.

In some advancing cases the diplobacillus may be found present; but it is easily destroyed by the instillation of $\frac{1}{2}$ per cent. solution of sulphate of zinc every hour or two. In obstinate cases due to other causes, the ulcerated area having been defined by fluorescin, the actual or galvanic cautery at a dull red heat must be applied. Staphylococcus vaccine has been used successfully for hypopion ulcers, and fibrolysin and dionin for opacities.

Diabetes Mellitus.

The treatment by starvation, recently advocated by Allen, offers a prospect of cure, and in young subjects, in whom the prognosis is so grave, it should certainly have a thorough trial. It is based upon the idea of giving the pancreas a rest; but all cases of diabetes are not entirely pancreatic. Some, like the gouty form, have a large hepatic element, and for them the starvation treatment is less suitable. Cases

which are connected with duodenal catarrh benefit by it, however. The procedure is as follows:

The patient is put to bed and, except water and perhaps a little whisky, is given no food whatever until sugar has been absent from the urine for two days—usually twelve days in all. He is then allowed $\frac{1}{2}$ pound of cooked French beans *per diem*, with weak tea or coffee. On the fifth day lean meat to the extent of 100 grammes is permitted, together with some broth; on the sixth day 40 grammes of potato and one egg are added, and so on, till on the fifteenth day he is receiving in grammes or c.c. his food as follows—Breakfast: coffee 300, cream 20, one egg, cooked fat bacon 30, raw lettuce 100, white bread 15, butter 15. Lunch: Cooked lean meat 60, fat 30, cooked French beans 120, boiled potato 30, butter 60. Tea: tea 300, white bread 15, one egg, butter 30. Dinner: clear broth 200, one egg, cooked cabbage 120, boiled potato 30, butter 60. Every seventh day should be a fast day, or at least a half-ration day. Should sugar reappear, a one day's fast usually removes it. Tuberculosis is a contra-indication. It is evident that such a régime is not to be ordered lightly, and the worst of it is that it is by no means always successful.

The older treatment by diet and drugs enabled patients over forty-five to maintain a fairly active life. This is especially true since the introduction of salicylates. The writer has had excellent results in a very large number of patients from the following prescription:

R	<i>Tr. Bellad.</i>	..	..	..	..	ʒiss.
	<i>Sodii Salicyl.</i>	..	..	..	..	ʒii.
	<i>Nepenthe</i>	..	..	..	..	ʒii.
	<i>Aq. Ment. Pip.</i>	..	..	..	..	ad ʒvi.

M.

One tablespoonful three times a day.

With the aid of this medicine, the patient can be safely allowed one-third of his normal carbohydrates and his usual proteins and fats, and still maintain the percentage of sugar at about 3 per cent. and the quantity of urine at 40 ounces *per diem*, his weight keeping stationary. There can be no doubt that, under the system of refusing carbohydrates to these patients, large numbers died practically of starvation, and it is useless to aim at eliminating all sugar from the urine by strict diet if the result is to lower the vitality to danger-point. It is also a great mistake to reduce the allowance of water, for to do so increases the viscosity of the blood, and this, by putting a strain upon the ventricles, tends to heart failure.

Of carbohydrates, potatoes and oatmeal gruel are the least injurious; the first, indeed, is said to reduce the acidity of the urine, and thus lessen the risk of acidosis. Should this formidable complication appear, starch food and even glucose must be given in addition to 2-drachm doses of bicarbonate of soda, which, in the presence of coma, may have to be given *per rectum* or intravenously.

Diabetes Insipidus.

Fluids should not be restricted, but salt should be withheld. Treatment is unsatisfactory, but the following is useful:

R	<i>Ext. Ergot. Liq.</i>	..	..	..	℥iii.
	<i>Tr. Bellad.</i>	..	..	..	℥iiss.
	<i>Syr. Aromat.</i>	..	..	..	℥i.
	<i>Aq.</i>	..	..	..	ad ℥vi.

M.

One tablespoonful three times a day.

Success has been claimed for galvanism, the protected negative electrode being applied through the nose to the bodies of the cervical vertebræ. The Weir Mitchell treatment, too, has its advocates.

Ear, Boil in.

After applying poultices for a time over the auricle, cocaine ointment should be introduced on long cotton plugs, an incision made, and the poultices resumed, together with syringing if necessary.

Ear, Foreign Body in.

Insects can be persuaded to leave by a few puffs of tobacco-smoke. Small objects can be brought to the surface by syringing, and then removed by bow forceps; larger ones by Guy's forceps, with or without chloroform. When inflammatory thickening has taken place around it, an incision may be necessary.

Ear, Wax in.

The meatus should be syringed with peroxide of hydrogen (10 vols.) first, so as to loosen the wax by the disengagement of gas behind it. The wax is then brought away by strong tepid syringing if necessary.

Eczema.

In the acute form, lotions often agree better than ointments:

R *Tr. Opii* ʒi.
Liq. Plumbi Subacet. Dil. ad ʒiv.

Fiat Lotion.

A linen rag (not lint) should be soaked in the lotion and kept wet on the patch without oiled silk. When the "weeping" has nearly gone, one-third olive oil may be shaken up with the lotion with advantage.

Internally, 5 grains of calomel overnight should be followed by some effervescing saline the next morning. If the affected area is large, milk diet is indicated. No stimulant is permitted.

The chronic form is better treated by ointments, and one of the best is the following:

R	<i>Hyd. Ammon. Chlor.</i>	..	..	gr. xx.
	<i>Liq. Carbonis Detergent.</i>	..	..	ʒii.
	<i>Adip. Lanæ</i>	}	..	..
	<i>Paraff. Moll.</i>				..	..	āā ʒi.

Fiat unguentum.

When the patch is quite dry and merely red, starch and zinc powder is better than ointment.

In indolent cases Hebra's method of scrubbing the patch with cottonwool dipped in liquor potassæ, followed by the application of ung. plumbi, is the best; while for seborrhœic eczema the following ointment can be recommended:

R	<i>Resorcin.</i>	..	..	..	gr. xx.
	<i>Glycerin.</i>	..	..	..	q.s.
	<i>Paraff. Moll.</i>	..	..	..	ʒss.
	<i>Ung. Zinci</i>	..	..	..	ad ʒii.

M.

Fiat unguentum.

It must be remembered, however, that resorcin discolours the hair. When eczema has become dry and scaly, it must be treated as psoriasis (p. 206).

Notwithstanding the view so often expressed that no internal treatment is of any use, the writer is convinced that in anæmic and flabby patients iron is of great service; and in gouty ones sulphate of soda. In neither case should much starchy or saccharine food be permitted, and children must have no snacks between meals.

Erythema.

Small patches should be treated by powder:

	<i>Bismuth. Subnit.</i>	..	..	..	ʒii.
	<i>Zinci Oxid.</i>	..	..	..	ʒiiss.
	<i>Pulv. Amyli</i>	..	..	..	ad ʒi.

Fiat pulv.

Larger areas require a soda or borax bath 4 ounces to 30 gallons, but many cases are due to errors of diet or the action of drugs such as phenazone, and must be treated accordingly.

Favus.

A boric starch poultice should be applied to the head on rags four times a day till the crusts come away. Cautious depilation by X rays follows, and concurrently an ointment is applied. The best way is to use alternately ung. hydrarg. ammon. one week and sulphate of copper ointment (1 drachm to 1 ounce of lard) the next.

Fractures.

The fracture having been diagnosed, the limb should be placed on a pillow, carefully washed and dried, and then dusted with fine talc powder. Next it should be stroked gently upwards and massaged for a quarter of an hour. Then, a little morphia having been injected, or in severe cases chloroform administered, traction is exercised till the ends are in good apposition, when the splints are put on and fixed by bandages, which should encircle the limb as little as possible. If necessary, the X rays can be used at this stage. The next day gentle massage, without removal of the splint, should be tried. From three to six days later the splint is carefully removed and the limb massaged more thoroughly. Three days from this, passive exercises are begun, missing a day at first. If the fracture is near a joint, deep massage is inadmissible. Compound fractures should be well flushed out with tr. iodi mitis. Delayed union requires a Bier's bandage placed above the seat of fracture, and worn twelve hours out of the twenty-four.

Glottis, Œdema of.

This may occur in connection with Bright's disease, angina Ludovici, wounds of throat, laryngeal affections, and iodism. If slight, the patient should suck ice and have an ice-bag applied to the neck; while, internally, he should have an injection of $\frac{1}{8}$ grain pilocarpin or a dose of chloral. These failing, the parts must be scarified under cocaine. As a last resource, tracheotomy must be performed. Iodism cases can be adequately treated by large doses of bicarbonate of soda or adrenalin.

Hæmorrhoids.

External piles, if tender and inflamed, should have frequent hot poppy fomentations. As soon as pressure can be borne, the protruding pile should be pushed back past the internal sphincter and the following ointment applied:

R *Cocain.* gr. iv.
Unguent. Conii ad ʒi.

Ft. ung.

Later, an astringent ointment is required—*e.g.*, ung. hamamelis; but lotions, such as sulphate of iron 5 grains to the ounce, are often more effective. The effects of adrenalin are too transient.

Internal Piles.—The ointment prescribed for the external form is suitable here, but an ointment introducer must be employed, or, alternatively, a suppository may be tried:

R *Acid. Tann.* } āā gr. v.
Ichthyol }
Extract. Hamamel.... .. gr. x.
Ol. Theobrom. q.s.

Fiat suppos. Mitte xii.

The remote cause of piles is impediment to the venous return, and when this is in the liver the treatment for duodenal catarrh is of value. Severe recurrent cases require operation, unless due to an irremovable cause, such as cirrhosis of the liver. Sometimes a pile conceals a growth higher up.

Headache.

This is dealt with in other sections, but in some cases the symptom preponderates over its cause. Thus:

Bilious Headache.—The patient should take 5 grains of calomel overnight and 2 drachms of sodii sulph. the next morning.

Alcoholic Headache.—Fifteen grains of bromide of potassium should be dissolved in the water used for a Seidlitz powder, and taken with it. Lactate of calcium is also useful.

Morning Headache.—The non-alcoholic form is best treated as follows:

℞	Pot. Brom.	}	..	..	..	..	āā	gr. x.
	Sodii Salicyl.	}	..	..	..	..	ad	ḡi.
	Aq. Anisi		..	..	..	..	ad	ḡi.

To be taken every morning fasting.

High Tension Headache :

℞	Pot. Iod.	..	..	..	..	ḡi.
	Pot. Nit.	..	..	..	..	ḡii.
	Syr. Prun. Virgin.	..	..	..	..	ḡi.
	Aq.	..	..	..	..	ad ḡvi.

M.

One tablespoonful three times a day.

Uric Acid Headache.—The above prescription suits also this form. The diet should be largely vegetarian.

Anæmic Headache.—The treatment is by lactate of calcium 10 grains three times a day.

Refractive Headache requires appropriate glasses; *dental headache*, removal or stopping of teeth, etc.

The following prescription is useful pending the determination of the cause:

R	<i>Pot. Brom.</i>	..	..	..	..	̄ii.
	<i>Phenazon.</i>	..	..	..	..	̄iii.
	<i>Sp. Ammon. Aromat.</i>	..	..	..	..	̄iv.
	<i>Aq.</i>	..	..	..	..	ad ̄vi.

M.

One tablespoonful to be taken every two hours till relieved, the patient lying down for ten minutes after each dose.

For external treatment, if the pain is worse on lying down, a cooling application such as eau de Cologne or an ice-bag is best; but if better on lying down, a hot flannel should be bound tightly round the head. Menthol, or methyl salicylate and olive oil 1 to 3, will give some relief in both cases.

Hernia.

To reduce a hernia, the patient should be placed on his back with a pillow under the pelvis, and be told to breathe gently with the mouth open. The thigh is then flexed and adducted, and the hernia, with a firm but light pressure, pushed back in the axis of the canal through which it descended. The attempt should be frequently interrupted, and must not be persevered with too long or an injury may be done. After a time, therefore, an ice-bag should be applied for an hour and a second attempt made; or, if there are no signs of strangulation or other grave condition, the patient may be kept recumbent for a week before a fresh attempt is made, the swelling being kept under pressure by an elastic bandage. A working-man gets on better with a double truss, even when the hernia is single. An inoperable and

irreducible hernia should be treated with a hollow pad truss worn night and day. Strangulated hernia requires operation as soon as recognised. In general, when once a truss becomes necessary, it must be worn for the rest of life. In children under four, however, a cure is sometimes effected in inguinal hernia after the truss has been worn for two years and in umbilical hernia cure is the rule. The operation for radical cure should be recommended to all whose mode of living involves much exertion.

Impetigo.

No ointment is of any service while crusts remain. They should be removed by boric starch poultices spread on linen rags; though, if very dry, they can often be prised off with a bit of card. Any vesicles or pustules that come into view must be punctured, and the raw surface treated with the following:

R	<i>Acid. Salicyl.</i>	..	..	..	gr. viii.
	<i>Zinci Oxid.</i>	..	..	..	ʒi.
	<i>Adip. Lanæ</i>	}	..	..	āā ʒi.
	<i>Paraff. Moll.</i>				
				M.	

Fiat ungu.

Sometimes a lotion, such as one of sulphate of zinc 3 grains to the ounce, agrees better than an ointment. Children generally require iron, and they must not be allowed to eat between meals or to have much sweet or starchy food.

Ingrowing Toenail.

Toenails should always be cut straight across, the practice of rounding the corners being responsible for many cases of this trouble. A piece of tinfoil in three thicknesses should be inserted between the granulations and the nail, and kept dusted with

boric acid. If this fail, a wedge-shaped piece of nail, with the point to the matrix, must be cut out so as to take off the pressure. The granulations, if redundant, are to be painted with nitrate of silver. In the worst cases avulsion must be done under ethyl chloride.

Insomnia.

Habit is of primary importance in the treatment, and the patient must make a point of going to bed at precisely the same time every night. Over-activity of the brain is a common cause. The patient says he does nothing but think, think, think! This means an excess of blood in the head, and the cause may be cold feet, insufficient bedclothes, or excitement from novel-reading, a game of cards or chess, or heated argument—too near to bedtime. The remedy is to warm the feet by a hot-water bottle or a hot footbath. Another cause is hunger from too long a period having elapsed since the last meal; this is countered by a biscuit the last thing. A cause that is rarely recognised is irritability of the skin due to an old impermeable blanket, or, worse still, an eiderdown quilt, the holes in which are quite inadequate to allow moisture to escape. It must be remembered that air will take up only an amount of moisture proportionate to its temperature, and that after this point is reached perspiration ceases. Hence the irritability. The writer would like to see on the market an eiderdown quilt made in three transverse bands separated by two 3-inch strips of worsted lace. Failing this, two narrow quilts joined should serve. Reading is of service only when the book is dull. A large number of cases, therefore, can be dealt with by other means than hypnotics. If used, the following is approximately the order of their relative innocuity: bromides, sulphonal,

chloralamide, paraldehyde, barbitone, chloral, and morphia.

Brunton, by employing a combination, managed with small doses of the more dangerous drugs; his formula is:

R	<i>Tr. Opii</i>	..	..	..	..	℥v.
	<i>Chloral Hydrat.</i>	..	..	..	..	gr. v.
	<i>Pot. Brom.</i>	..	..	..	..	gr. xx
	<i>Aq. Chloroform.</i>	..	..	..	..	ad ʒi.

Fiat haustus.

A good rule in giving hypnotics is to ring the changes, but keep to one flavour (such as syr. aromat.). Not only is the result better, but there is less fear of creating a vicious habit.

Intestinal Obstruction.

There can be no doubt that the remedy for many of these cases is early operation, and especially where no flatus has passed for many hours, a little fæces being inconclusive. Some surgeons, indeed, go so far as to recommend operation in all cases, but physicians must ask to be excused if they are not convinced of the necessity of this; for they can recall many where the obstruction was safely overcome by medical measures and the patient back at his work in a couple of days. A balance must be struck between the danger of operating rather late and that incurred by an unnecessary operation; and, what with shock and heart failure, to say nothing of technical risks, this is by no means negligible. Even when successful, an operation means a much more prolonged disablement. And, after all, obstruction, whether from a growth, a twist, a concretion, or what not, is not solely due to the obstacle. The point, as far as the writer knows, has not been hitherto made (except in his own works), but the fact is that the obstruction is due not alone to th^e

surgical condition, but to the obstruction plus spasm. This is proved by the fact that a patient, dying of intestinal obstruction due to a growth, has at the moment when death comes a copious motion. This has been witnessed more than once by the writer, though he does not pretend that it is true in all cases. The medical treatment, therefore, consists in giving a small dose of atropin and belladonna to relax the spasm, and follow this up with an asafœtida enema, which also has an antispasmodic effect. Whether this succeed or not, $\frac{1}{2}$ pint of warm olive oil should then be injected under low pressure. If there is still no result, a large soap-and-water enema should be administered two hours later, and its action will be assisted by rolling the patient over from side to side at frequent intervals. Chloroform inhalation will sometimes overcome an obstruction; but if employed, everything must be ready for the operation that will very likely be necessary.

Keloid.

Radium, high-frequency currents, and electrolysis, are all of more or less service, and softening has been found to follow 25-minim injections of thiosinamine solution made thus:

R	<i>Thiosinamin.</i>	..	..	..	..	ʒii.
	<i>Glycerin.</i>	}	..	..	..	āā ad ʒiii.
	<i>Aq.</i>					

Excision may be called for.

Ménière's Disease.

If the hæmorrhage into the labyrinth is at all considerable, a great deal of shock will be present. The patient must lie down in a dark and silent room, with an ice-bag to his head, a hot-water bottle to his feet, and a blister behind the ear. He is then given 20 grains of bromide of potassium every two hours.

When the shock has passed off, 10 grains of iodide should replace the bromide, and pilocarpin be given hypodermically in increasing doses.

On a recurrence of the giddiness, or as an addition to the above treatment, 4 grains of calomel followed by this mixture should be given:

R	<i>Tr. Gelsemii</i>	..	..	..	ʒii.
	<i>Acid. Hydrobrom. Dil.</i>	..	..	..	ʒiv.
	<i>Acid. Acetosal.</i>	..	..	..	ʒii.
	<i>Pulv. Trag. Co.</i>	..	..	..	q.s.
	<i>Aq. Menth. Pip.</i>	..	..	..	ad ʒvi.
	<i>M.</i>				

One tablespoonful every four hours.

Obstinate cases may be treated by galvanism applied from ear to ear, or by vibratory massage to the nasal mucous membrane. The disease may be associated with gout, syphilis, or arterio-sclerosis, and the treatment must be modified accordingly.

Nephritis, Acute.

The patient must be in bed between the blankets and wear woollen night-clothing. He then takes copious draughts of barley-water, and, unless the heart's action is too feeble, receives a hypodermic injection of $\frac{1}{8}$ grain pilocarpin, with full doses of sulphate of magnesia internally, though should coma threaten croton oil must be substituted. The bed vapour-bath described under *Uræmia* and the wet-pack are often valuable.

When the urine has lost its smokiness, mild diuretics may be given. Thus:

R	<i>Acet. Scillaæ</i>	..	..	..	ʒii.
	<i>Pot. Acet.</i>	..	..	..	ʒiv.
	<i>Succ. Scoparii</i>	..	..	..	ʒi.
	<i>Aq. Anisi</i>	..	..	..	ad ʒvi.
	<i>M.</i>				

One tablespoonful every six hours.

The inevitable sleeplessness is best treated by bromide, but if this fail a hypodermic injection of hyoscin hydrobrom. should be given. Opium is fatal. As regards diet, the principal point to bear in mind is to limit the amount of protein, consequently even milk must be cut down. Van Noorden allows 13 ounces of cream, but this quantity would not be tolerated in the vomiting stage. The deficiency in calories must be made up by sweetened arrowroot, Benger's Food, potato cream, etc. Later, if there is little or no albuminuria, the diet may be extended to fish and eggs. In this stage iron is advantageous:

R *Tr. Digitalis* ʒi.
Tr. Ferr. Perchlor. ʒii.
Glyc. ʒvi.
Aq. Chlorof. ad ʒvi.

One tablespoonful three times a day.

The patient must not be allowed to get up till the dropsy is gone.

Chronic Tubular Nephritis.

Diaphoretics, diuretics, and purgatives are to be avoided, with the exception of a weekly Turkish bath. The treatment, therefore, is almost entirely dietetic. Salt in particular must be rigorously excluded from the meals. Only an ounce or two of meat is allowed, and the patient must live upon starchy food, vegetables, milk, butter, cream, fish, and a moderate quantity of chicken. Medicines are of little use against albuminuria; but the following improves the general condition, and may be given in three-week courses with the same interval:

R *Tr. Ferr. Perchlor.* ʒii.
Tr. Digitalis ʒiiss.
Acid. Phosph. Dil. ʒii.
Aq. Chlorof. ad ʒvi.

M.

One tablespoonful three times a day.

The patient must be warmly clad, and every precaution must be taken against chills. He should spend the winter in Egypt, Madeira, or Algiers, or, failing these, in Falmouth or Torquay. Exacerbations must be treated like the acute form, and the patient must go to bed again.

Night Terrors.

The automatic habit is a great factor in perpetuating this condition, and in order to break it it is worth while to give the child a dose of bromide every night for a week, and to arrange for him to sleep in another room during this period. Search must be made for a cause. It will be found sometimes in a grating cowl or in an uncanny shadow such as that cast from a neighbouring tree. At all events, some of these cases have a real though misinterpreted basis. It is a good rule to change the nursemaid, for many of this class are fond of talking about bogies. The cases, however, are often associated with adenoids, enlarged tonsils, or nasal troubles, and these must be treated surgically. Others are rheumatic, and improve under salicylates. The child's diet must be light; but he must not go to bed hungry. A piece of sponge-cake the last thing will sometimes ward off an attack.

Orchitis, Acute.

The patient must be kept in bed, with the scrotum slung up, and given 5 grains of calomel followed by mist. sennæ co. the next morning. Locally, flannels wrung out in hot water and sprinkled with belladonna liniment should be applied at frequent intervals. Concurrently he should take this mixture:

R	<i>Pot. Iod.</i>	..	..	..	..	ʒi.
	<i>Nepenthe</i>	..	..	..	..	ʒiiss.
	<i>Aq. Chlorof.</i>	..	..	..	..	ad ʒvi.

M. One tablespoonful every four hours.

As the pain subsides, the nepenthe may be replaced by bromides and the fomentation by glycerin of belladonna (p. 115), which should be rubbed gently into the swelling three times a day. After two days of this treatment the part should be strapped up.

Pharyngitis, Chronic.

The condition may be due to dyspepsia, gout, or rheumatism; but the commonest causes are smoking and public speaking. The only permissible form of smoking is that through a hookah, and deprived patients will welcome this idea. As for speaking, the trouble arises not so much from this as from defective voice training, and if the patient cannot give up preaching or oratory, he should take a course. The throat should be brushed three or four times a day with the following:

R *Tr. Iodi* ʒi.
Glycerin. Borac. }
Glycerin. Acid. Carbol. } āā ʒss.

S. ; *The Paint.*

Concurrently an oily spray containing ol. pini 5 minims and menthol 10 minims to the ounce of fine paraffin should be employed. A change of air will be beneficial. For the granular form, the pharynx having been wiped dry and brushed with a 10 per cent. solution of cocaine, from eight to ten of the granules are touched with the point of an electric cauterium heated to a dull red, while a second onslaught is made on another group when the sloughs from the first have healed. An alternative method is to dip a pointed stick into equal parts of chromic acid and water, and prod each granule with it, the excess of acid being removed by aluminium acetate solution.

Phlebitis.

When this occurs in the leg, which is the commonest site, the patient must remain in bed with the foot elevated for six weeks. Belladonna and glycerine should be painted along the hard swelling. When superficial phlebitis is recurrent, the vein should be excised. Many cases are gouty, and need appropriate treatment. Citrate of soda is sometimes prescribed, but is hardly likely to dissolve the clot, which it is supposed to do. Infective phlebitis requires incision, and removal of clot with proximal ligature.

Psoriasis.

As soon as the hyperæmic stage has passed, arsenic must be given. To prevent cumulative action, it should be omitted every seventh day. Some cases, however, are rheumatic and do better with salicin. Thus:

R	<i>Salicin.</i>	..	..	..	..	ʒii.
	<i>Tr. Nuc. Vom.</i>	..	..	..	..	ʒiiss.
	<i>Syr. Aurant.</i>	..	..	..	..	ʒi.
	<i>Aq.</i>	..	..	..	..	ad ʒviii.
						M.

Two tablespoonfuls three times a day.

Before any local application can be of service, the scales must be removed, and this can be done by immersing the part in soda and warm water and then brushing vigorously. The next obstacle is hyperæmia, which can be got rid of by lead lotion. The most effective treatment now is chrysarobin, 5 grains to an ounce of zinc ointment; but it has the disadvantage of staining both linen and hair, and an alternative is the pigmentum chrysarobini (B.P.C.), where the drug is contained in gutta-percha solution. For mild cases, the ung. hyd. ammon. chlor., 40

grains to the ounce of vaseline, will suffice. Pyorrhœa may have to be dealt with.

Ringworm.

The affected areas having been shaved, together with a margin of a third of an inch around each (it is very rarely necessary to shave the whole scalp), the crust removed with benzine, and loose hairs extracted with forceps, the following lotion should be deeply brushed into each patch:

R *Hydrarg. Subchlor.* gr. xl.
Tr. Iodi ad ʒi.

Shake and decant. S.: The Paint.

This is much more penetrating than any ointment. It must be repeated when the effects of the first painting have gone off, and, in between, a milder preparation made of 2 drachms of tincture of iodine to an ounce of oil of cade employed.

Obstinate cases may require X-ray treatment. The persistence of the disease is due either to poor general health or to reinfection. The latter may be prevented by sewing linen linings inside the cap and boiling or burning them every day. Pillow-case, nightcap, and the (metal) comb, must also have a daily boil. Most children require iron and open air, and when attention is paid to this get well in a quarter of the time.

Scabies.

The treatment begins with a good scrubbing; after which the patch, if small, is rubbed with sulphur ointment; but this is rather liable to set up dermatitis, and the following ointment is equally efficacious without this objection:

R *B. Naphthol.*) āā ʒss.
Cret. Præp.)
Adip. ad ʒi.

M.

Fiat ung.

When the area affected is large, the sulphur bath is the remedy; but only a bath made of earthenware should be employed. To make it, 3 ounces of sulphide of potash are mixed with 30 gallons of warm water.

One result of the war is that men who have been gassed by chlorine find their scabies cured! Possibly a cabinet Turkish bath might afford a means of applying the gas.

Seborrhœa Sicca.

This is the most formidable enemy that the hair can have. The crust must first be removed; but the old way, which involved hard scrubbing, dragged out many a hair, and a little brushing with benzene is equally effective, as the writer showed many years ago. The following ointment must be rubbed in every night:

℞ *Acid. Salic...* ʒii.
Ung. Sulphuris Co. ad ʒi.

Fiat unguentum.

If used for the skin it should be only half this strength.

Sea-Sickness.

Two days before embarking upon a voyage, a person who has already been a severe sufferer from this trouble should take a 5-grain blue pill at night and a black draught the next morning. On reaching the ship, he should lie down, either immediately, or well before the open sea shows itself, and remain recumbent and with his eyes shut and his feet to the stern, till he has become accustomed to the motion of the vessel. If the voyage is short, he should content himself with gnawing at a dry biscuit and drinking champagne or hock and seltzer. A further good preventative is ten drops of validol upon a lump of sugar, or the following mixture:

R	<i>Chlorbutol</i>	..	..	..	..	gr. x.
	<i>Glycerin.</i>	}	..	..	..	āā ʒi.
	<i>Tr. Aurant.</i>					

To be taken without water every three hours.

A tight belt is helpful to some persons, and deep breathing exercises to others. Should dangerous depression set in, a hypodermic injection of liq. strychninæ is indicated.

Septicæmia.

The source must be sought for, and if possible removed; but this alone will not suffice. The patient should have antistreptococcus serum 30 c.c. twice a day, in addition to copious saline intravenous injections. Large doses of quinine and brandy-and-egg mixture are also indicated. For pyæmia, an auto-genous vaccine should be given in addition, and any abscesses that have formed freely opened.

Sprains.

The treatment differs according to whether swelling has commenced or not. If not, cold treatment as by lead lotion and a bandage is best; if it have, a hot wet flannel bandage should be applied, and a good way of keeping it hot is to wrap loosely round it a partially filled rubber hot-water bottle; massage will help to remove the swelling and effused blood. The swelling once gone, the treatment is by lead lotion. A splint must be used if important ligaments have been ruptured, but otherwise it is better avoided. Plaster of Paris is anathema, for nothing hinders a cure or is more likely to lead to permanent stiffness than complete fixation. When the pain is passing off, a liniment such as that of aconite will help matters; but in all cases massage and passive exercises must be persevered with and a solid rubber bandage worn when walking is begun.

Sunstroke.

Slight cases must be treated as for shock; but if the temperature rises, cold douches, baths, or enemata must be ordered, or towels wrung out in iced water, applied, until it is reduced to 100°. Antipyretic drugs are in general contra-indicated. For weak action of the heart, strychnine or digitalis must be given; for malarial cases, intramuscular injections of quinine. If the skin is dry, pilocarpin is indicated. The subsequent treatment consists in rest of mind and body, an unstimulating diet, and removal to a cool or bracing climate.

Tachycardia.

The term is used rather loosely; properly, it should be limited to apyrexial quickened pulse. For the paroxysmal form the treatment is not very satisfactory; but bromide and valerian have given the writer good results. Otherwise the treatment depends upon the associated condition. Thus, for valvular disease, opium; for the gouty form, colchicum; for anæmia, iron; and for syphilis, large doses of iodide.

Tapeworm.

After a day on liquid diet, an ounce of castor oil should be taken at night; and on the following morning 1 or 2 drachms of liquid extract of male fern in mucilage and chloroform water. Two hours after this another ounce of castor oil is taken. The head, or at least the smallest of the proglottides, must be found before a cure can be guaranteed, and if the above treatment should not bring one or the other away, an enema of $\frac{1}{2}$ ounce of turpentine in a pint of starch mucilage will.

Ulcers.

An ulcer of the leg is apt to go on indefinitely unless efficiently treated at the beginning. The patient must go to bed with the limb in a splint and the foot elevated. If the ulcer is hot and inflamed, three thicknesses of boric lint momentarily dipped in hot water should be applied, and covered with oiled silk, cottonwool, and a bandage. If septic, it must be well washed, first with lysol (1 in 100) and then with carbolic lotion (1 in 20); boric lint is then applied as before. In the case of an indolent ulcer, the indication is to turn it into the acute form. It must be lightly scraped, the edges slashed, and a number of punctures made into it. Lotio rubra is then applied on lint, and the leg elevated and bandaged with crêpe Velpeau. Varicose ulcers, if indolent, are to be treated in the same way. If the ulcer tends to bleed, a hazeline lotion made with an equal part of water should be applied.

By one or other of these measures the ulcer is brought into a healthy condition, and it should then be covered with an overlapping piece of perforated green protective covered with wool, etc. The dressing is changed only once in forty-eight hours. The patient must not get up till healing has taken place, nor walk till the scar is strong. The ambulatory treatment with Unna's bandage is open to the objection that large quantities of pus are sometimes found under it.

Uræmia.

The latest treatment is an intravenous injection of pituitrin in a pint of saline solution; but the older treatment must be carried on concurrently. The patient is first sponged all over with warm water, next placed between two hot blankets, where he

drinks abundantly of warm barley-water. He is then given a hypodermic injection of pilocarpin gr. $\frac{1}{8}$ every hour or two till consciousness is fully restored. The bed vapour bath is a further help to diaphoresis; it is made by putting between the blankets hot bricks or flat-irons wrapped in flannel. Hydragogues should be given if the patient can stand them.

Convulsions usually cease with this treatment; but if not, large doses of bromide, or even chloroform inhalations are required. As there is a great tendency to acidosis, it is a good plan to add 2 drachms of sodii bicarb. to each pint of barley-water.

Xanthelasma.

Electrolysis suffices in some cases, but erosion or excision is generally necessary.

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CONVALESCENT TREATMENT

THE treatment of the convalescent stage of all diseases which have been unaccompanied by complications is practically identical, so that grouping will save much time and study.

For a week before leaving his bed the patient must have had something more than liquid diet, such as fish, chicken, light puddings, custard, or, if the condition permits of it, heavier food. He is permitted to be up at first for not more than two hours, and afterwards for gradually increasing periods. The writer's practice is to order alternately two hours out of bed, sitting or moving about, and two hours recumbency. This is better than allowing long periods of sitting and standing; for it makes less strain upon the heart and prevents that overtired feeling which is apt to take away the appetite and even interfere with sleep. After a week, the diet may include such stimulants as malt liquor or red Burgundy, if the patient has been accustomed to alcohol, and the diet may include everything except fatty food, such as pork, duck, goose, salmon, mackerel, eels, as well as crustaceans and (except oysters) bivalves. At the same time, if not earlier, a tonic mixture should be ordered.

R	<i>Tr. Nuc. Vom.</i>	}	..	..	āā	ʒii.
	<i>Acid. Nit. Hyd. Dil.</i>	}	..	..	ʒi.	
	<i>Syr. Zingib.</i>	..	..	..	ad	ʒvi.
	<i>Aq.</i>	..	..	..

M.

One tablespoonful three times a day,

The effects of this resumption of ordinary diet are both beneficial and harmful; for although it strengthens the patient, it upsets the liver and often brings out a skin eruption. To prevent this the patient should have, from the first getting up, a dose of effervescent saline two or three times a week. Unless this is done, the appetite will fall off. Another common cause of hepatic disturbance is the practice of giving iron early. It is true that anæmia is often present; but to tolerate iron the patient must be able to stand a fair amount of exercise, and until this is the case the mixture prescribed above is preferable. The rule is not, however, so applicable to children.

Massage of the limbs should be commenced a week before the patient gets up; but it is somewhat exhausting, and must not be pushed too far. It is contraindicated in gouty persons and after a prolonged fever such as typhoid, because deep or superficial phlebitis may be present, and the shifting of a thrombus is responsible for many cases of sudden death in convalescence. When the patient can walk half a mile, massage may be discontinued. Massage, however, is not always available, and exercises may take its place. The following is a useful hint for strengthening the muscles of the lower extremities, and thus advancing the time when walking will be possible. It is especially useful after long confinement to bed. Place two chairs back to back about 18 inches apart; bridge these with a lath across the middle bar of each, and pass the lath through a loop of ribbon or webbing so that the bottom of the loop is about 10 inches from the floor. Insert each foot alternately in the loop, and imitate a treadle movement. This is much better than making the same movement in the air, for the weight of the limb is supported. Incidentally it also removes stiffness. A little later tricycle exercise is very useful, for this supports the whole weight

of the body. These exercises are very important, since the benefit is not limited to the limbs, but extends also to the heart, which has necessarily become flabby from relative disuse.

To complete the re-establishment of health, it is often necessary to order change of air and of scene. Elsewhere the writer has pointed out that one action of this proceeding is to break the automatic habit by which many an acute disease passes into a chronic one. But it is a mistake to send the patient away very early; he should be at least strong enough to walk about without the necessity of taking frequent rests, since the weather may not permit of this being done with safety; and if he overtires himself, as many do by incessant promenading on the front or by long country walks, he will lose half the benefit of the change. In general, sea air is the best; but it often disagrees with nervous or "livery" patients, and to some extent with skin and rheumatic cases. For all of these a dry tableland is to be preferred, at least in the hot months. Hilly country will do as well, provided the patient can manage the gradients without fatigue. One penalty for taking a change of air is constipation, and steps must be taken to anticipate this. Sea-bathing, if desirable, should not be attempted till the patient can run up three flights of stairs without panting. Nor should it be attempted as long as the glow after an experimental cold bath in the house is absent or much delayed.

Sea baths and even cold baths are contra-indicated by arterio-sclerosis, heart disease, epilepsy, and severe anæmia. Rheumatic patients must have the sea-water bath warm and under cover.

APPENDIX

I HAVE dealt seriatim with Methods of Treatment in another work, but I find I omitted one important agency—the effect of a confidence-inspiring manner. This is commonly supposed to have merely a commercial value; but if that were all, I should not trouble myself to write about it. The truth is that it has a distinct therapeutic value. Whatever helps the patient to the restoration of his health is worthy a doctor's study, and many an able and accomplished practitioner gets indifferent results because he fails to draw out of his patient all that is necessary for him to know, whether to make a diagnosis or to devise the best treatment. It is only to the doctor who sets his patient at ease and commands his confidence that the patient reveals everything; in the presence of one who is without this power, the patient is flurried or forgetful, and does not do himself justice. Not that it is desirable to adopt the funkey-like "bedside manner" of the writers of fiction. This, we must hope, is a thing of the past. The modern practitioner is more self-respecting, for he knows that his profession is equal to any in dignity and importance, and he need kow-tow to no one. The possession of this power of inspiring confidence, setting aside what is innate, depends partly upon the consciousness that he knows his work and partly upon whether he has chosen that branch of medicine for which he is best suited, or, in other words, that in which he can succeed. For success is a great factor

in inspiring confidence. I have given a few hints at the end of this section which may be of help; but I will first deal with the student's choice of a career.

The student approaching the end of his term must decide upon which branch of Medicine he will follow. In the first place, it behoves him to adopt the maxim *γνώθι σεαυτόν*, and realise candidly what are his powers and his limitations. He may think that, because he has shown as a student great facility in acquiring knowledge, he has great mental powers. This is a common mistake. The progress of civilisation would come to a stop if we did nothing but acquire the knowledge of our predecessors. Far more important is it for him to have given evidence of originality, evidence that he is capable of thinking for himself; for without this faculty he will never make his mark as a consultant.

Now the taste of most students runs in the direction of Surgery; but to succeed in this great branch of the profession, the student should be able to convince himself that he is a man of action, ready to come to a prompt decision in a moment of danger, and ready, too, to tackle it; next, that he possesses a steady hand and a high degree of manipulative skill; and, lastly, that he has that natural taste for mechanics by which he will understand, and get the full value out of, all instruments and apparatus, and be capable of devising others for emergencies. He needs a good practical mind; but a great intellect rarely accompanies this, and is not essential. The physician has more time for deliberation, and his judgment, when given, is the outcome of close and logical reasoning. On the whole, his mental faculties are on a higher plane than those of the surgeon, or the specialist. In addition, his hearing and vision must be sensitive and acute, and he should have that per-

ceptive imagination which will enable him to form a mental picture of the condition of the patient's internal organs. The specialist, like everybody else, is all the better for high mental faculties; but it is possible to succeed with very mediocre abilities. What he must have is a great power of concentration; and, in certain branches, he may need a high degree of manipulative skill.

Unfortunately, the money element is also a factor which must be taken into serious consideration by the aspirant to consulting practice. Except for a few earnest and strenuous individuals who are willing to sacrifice their youth and almost everything that makes life worth living at the altar of their ambition, some private means are essential. The surgeon gets off best, because he can earn something by assisting at the private operations of the senior staff. The specialist gets comparatively early recognition, and a youthful appearance does not matter very much. In these two cases, perhaps, two hundred a year for five years would be enough. This amount would also suffice for a consulting physician, provided he remain single; but if married, the joint income should be not less than eight hundred a year. Moreover, the time limit of five years does not apply; he is lucky if he ceases to need a subsidy in fifteen. Sir Lauder Brunton, who gained a reputation very early in life, made no secret of the fact that it took him seventeen years before he made both ends meet. The fact is that the general practitioner does not care to call in a physician under forty years of age, for if he did the patient would be dissatisfied; and, further, an assistant physician's time is taken up chiefly by out-patients, so that he has not much chance of making a reputation. My own experience is a case in point, and may be instructive. Having decided to try to become a consulting physician, I thought I

had better broaden my views and increase my knowledge by studying abroad, and I spent eighteen months on the Continent. In Paris I passed a good deal of time at the Collège de France, under Ranvier, and the rest at the great hospitals. From there I went to Vienna, where, I must say, I profited greatly. The Allgemeines Krankenhaus, as they term the hospital, has a service of 3,200 beds, and is therefore nearly six times the size of St. Thomas's in London. Besides attending the wards with Billroth, Bamberger, and others, I took out a course or two in each speciality—on the Ear, under Politzer and Gruber; on the Ophthalmoscope, under Stellwag; on the Skin, under Hebra and Kaposi; on Pathology, under Rokitanski and Kundrat; on Children's Diseases, under Widerhofer and Monti; and on Laryngology, under Schnitzler and Schrötter. The teaching was admirable, and contrasted greatly with the rather haphazard methods of London and Paris. Imagine the class for Laryngology. In a long corridor are seated, each with a lamp at his side, some twenty patients. The professor gives a short clinical lecture and tells the class what to look for. Then the students, each with his forehead and hand mirror, form a queue and examine the patients seriatim.

In the Skin class the students are seated in an amphitheatre, which is provided with a turntable. The patient comes in clothed in a sheet, which he holds together at the neck with finger and thumb, and then mounts the turntable. At a sign from Hebra, he lets go of the sheet and is revealed stark naked; then the porter turns his crank very slowly, and in this way each student can see every spot, its distribution, and its relations. Some of the patients who happen to have very rare diseases are actually paid pensions on condition that they come to show themselves. I afterwards visited Leipzig and Berlin, but

the teaching there was not nearly so good. As regards the language difficulty, I spoke French fluently, but of German I had only a good book knowledge. Still, at the end of a month, I could follow the lectures perfectly.

Returning to London, I served a term as R.M.O. at a Children's Hospital, and at the end of it was elected Assistant Physician. What follows is somewhat embroidered, in order, as Gilbert says, "to give verisimilitude to an otherwise bald and uninteresting narrative." On attaining this position, I realised that I was now on the first rung of the ladder. "*Sic iter ad astra*," I said to myself. But, in the course of my journey to the stars, I observed, as was perhaps only natural, a transit of Venus. After some months' acquaintance with the goddess, this involved an interview with a prospective father-in-law; but by that time I had realised that my means made marriage and consulting practice incompatible. He received me warmly. "Ah!" he said, "I was just thinking of you. Here is the chance you wanted, an advertisement for an Assistant Physician at St. Boniface's." After examining it, I said: "Sir, if the secretary were candid, the advertisement would read like this, 'Wanted, an Assistant Physician. Applicants must maintain an expensive address at the West End and within a reasonable period start a carriage. The value of the services rendered is about £300 a year; but the successful candidate is required to surrender this to the Hospital Maintenance Fund.' Napoleon's maxim," I went on, "*la carrière ouverte aux talents*," does not apply to Medicine. Of its higher branch, what was said of Literature may be paraphrased thus: '*Tenui Medicinam meditamus avena*' (we cultivate Medicine on a little oatmeal!)." "Say no more," he cried. "Porridge never agreed with my daughter!" Soon after this a street-door which had broken out in

a macular eruption shed one of its spots, and the person whose name had been there moved to a less fashionable district and started general practice, though with the resolve to return some day to the higher branch. It was a great disappointment to me, but there have been compensations. The change gave me an ideal life partner, and it has endowed me with a breadth of outlook which forms an excellent equipment for my present task.

But even with those who do not aspire to consulting practice, the choice is limited by money considerations. The newly qualified man who has no money should go into the Army or the Navy; or if desirous of remaining in this country, he should become medical officer to an infirmary or an asylum. Should his health be poor, he may be well advised to become a ship surgeon for a time; but this cannot be recommended to the healthy, for there is little to do, and, without practice, much that has been learnt at the hospital will be forgotten. The best way to pass the time between qualifying and going into practice on his own account is to be house surgeon for a year and an assistant for another year. It must be remembered that one requires more money to start in practice in a good neighbourhood than in a poor one, because long credit has to be given. A non-dispensing practice is pleasanter, but the bald fact is that it does not pay, unless the patients are well to do. People will not give more for a consultation alone than they are asked for consultation and medicine combined, and whereas the dispensing doctor gets a call perhaps three times a week, the non-dispensing one receives one a fortnight. And not only that, but if the patient or one of his family gets what is thought to be the same trouble, the prescription is made up again, and the prescriber receives nothing. An arrangement with a chemist

gets over the difficulty somewhat; but it fails with those who live at a distance.

The following advice may be of service. The man with £200 should buy a death vacancy; with £500 a practice, which to be safe should be in the country where there is no opposition; or, if in town, not a very old-established one where the connection will include many patients who have moved far afield, for these will transfer themselves to a doctor in their own neighbourhood. Alternatively, a start may be made in a new neighbourhood, but more doctors go than are required, and it is the richest who survive. Perhaps there is a better chance since the introduction of the panel, but the rule used to be that it took three years to make two ends meet. A partnership costs about twice as much as a practice, and about £1,000 will be required; but it is the safest plan; and the risk of not getting on with the senior can be minimised by acting as assistant for a time.

Now, having started in practice either as principal or assistant, take note of the following rules:

1. A macintosh or a wet overcoat must be removed before entering the sick-room.
2. On entering, be neither glum nor gay; simply bright.
3. Take a seat beside the patient, but not facing him, for there may be infection.
4. Begin with a little talk on general subjects, having previously read the latest news.
5. Speak in a clear and articulate way, but avoid a loud tone.
6. Listen with great attention to every word the patient says.
7. Ask the most intimate questions, as if you were speaking of bricks and mortar; self-consciousness here means indelicacy.
8. Let your demeanour be one of gravity com-

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bined with cheerfulness, and do not start being amusing till the patient is well on the road to recovery or thinks he is.

9. Do not use irony in speaking to a woman. She will most likely take it literally and be offended.

10. If you feel it your duty to give a bad prognosis, tell the responsible relation, but not the patient.

11. Do not tell a patient with a colour that she looks better, or a mother that her child is like someone else's.

12. Give minute directions as to diet and the hygiene of the sick-room.

13. If you are called to a little child, take no notice of him till after you have conversed with the mother a little while; then start by asking him to shake hands, and when he does, take the opportunity to feel his pulse. Utilise crying to determine vocal resonance.

DOSES

THE last International Pharmacopœial Conference seems to have been a German victory. At all events, our dose table is now more chaotic than ever. This is a great hardship for students whose memory is already much overtaxed in all directions; but, more than that, it is a downright danger to the public. I venture to say that there is not a man living who knows the dose of every remedy given in the British Pharmacopœia, and a large number of qualified men do not remember half. The consequence is that if the prescriber cannot remember the dose of the drug that he thinks the best possible for the patient, he gives the second or third best; and it may even happen that, having given the wrong dose unnoticed by the pharmacist, the patient gets symptoms of poisoning. As an instance of our chaotic dose table, take the liquors. There are only twenty-five of them, but they have sixteen different doses! It is to be hoped that the next Pharmacopœia Committee will include a few students. Much of this might easily have been prevented by slight dilutions. But, as far back as 1911, I suggested a method by which every Galenical preparation of the same name would have the same dose, and in 1913, I read a paper on the subject before the Royal Society of Medicine.

I mention this here because I think that by memorising the new words in conjunction with the name of the drug, the student will find it much easier to learn a great many doses even now. Let him think, for

instance, of *per aqua lauro-cerasi*, and he will remember that, being strong, its dose is small. My suggestion is that the prefix *per* should be applied to strong preparations, *med* to medium ones, and *sub* to weak ones. The doses then will be as follows:

<i>Perinfusum</i>	..	..	..	2 to 4 dr.
<i>Medinfusum</i>	..	..	..	$\frac{1}{2}$ to 1 oz.
<i>Subinfusum</i>	..	..	..	1 to 2 oz.
<i>Perextractum</i>	..	..	..	$\frac{1}{4}$ to 1 grain.
<i>Medextractum</i>	..	..	..	2 to 8 grains.
<i>Subextractum</i>	..	..	..	5 to 15 grains.
<i>Perextractum Liquidum</i>	..	..	..	5 to 15 ℥.
<i>Medextractum Liquidum</i>	..	..	..	$\frac{1}{2}$ to 2 dr.
<i>Subextractum Liquidum</i>	..	..	..	2 to 4 dr.
<i>Pertinctura</i>	..	..	..	5 to 15 ℥.
<i>Medtinctura</i>	..	..	..	$\frac{1}{2}$ to 1 dr.
<i>Subtinctura</i>	..	..	..	$\frac{1}{2}$ to 4 dr.
<i>Peraqua</i>	..	..	..	$\frac{1}{2}$ to 2 dr.
<i>Medaqua</i>	..	..	..	$\frac{1}{2}$ to 1 oz.
<i>Perspiritus</i>	..	..	..	5 to 20 ℥.
<i>Medspiritus</i>	..	..	..	20 to 40 ℥.
<i>Subspiritus</i>	..	..	..	$\frac{1}{2}$ to 2 dr.
<i>Persuccus</i>	..	..	..	5 to 15 ℥.
<i>Medsuccus</i>	..	..	..	1 to 2 dr.
<i>Pervinum</i>	..	..	..	10 to 30 ℥.
<i>Medvinum</i>	..	..	..	1 to 4 dr.
<i>Subvinum</i>	..	..	..	$\frac{1}{2}$ to 1 oz.

Even now there is some uniformity. Thus, the dose of all volatile oils is $\frac{1}{2}$ to 3 minims; of all mixtures, $\frac{1}{2}$ to 1 ounce; of practically all syrups, $\frac{1}{2}$ to 1 drachm; and of all hypodermic injections, 5 to 10 minims. The paper attracted a good deal of atten-

tion in the pharmaceutical world, and there it was universally affirmed that the idea was perfectly practicable with a little standardisation. Even if there were a few exceptions, the prefix, as in *xtinctura*, could perfectly well be utilised. It is surely a "consummation devoutly to be wished" that the mere name of a preparation should carry with it its dose.

ESTIMATION OF THE PROPER DOSE FOR A CHILD

An easily remembered formula is this: *Take the child's age for a numerator, and the child's age plus twelve for a denominator.* Thus, the dose for a child aged six is one-third of that required for an adult; for six plus twelve is eighteen, so that the fraction reads $\frac{6}{18}$ or $\frac{1}{3}$.

Smaller doses are required in the case of opium, the dose of *tr. camp. co.* for an infant being 2 minims. On the other hand, arsenic, belladonna, bromide, and aperients, may be given in larger proportionate doses.

U.S.A. PHARMACOPŒIA EQUIVALENTS.

The American reader, by referring to the following table, will be able to bring doses, etc., into line with the U.S.A. Pharmacopœia. Where the difference is marked, as in *tr. strophanthi*, the change should be made in the body of the work. The greater part of the drugs prescribed in the book require no change, and the following important preparations are practically the same in both pharmacopœias: Tinctures of belladonna, cinchona, *ferri perchlor.*, gelsemium, *hyoscyamus*, *nux vomica*, and opium, and *vinum colchici*; as well as all alkaloids and inorganic salts and bases. The British Pharmacopœia doses are ranged, the U.S.A. averaged.

U.S. PHARMACOPŒIA EQUIVALENTS 227

<i>British Pharmacopœia, 1914.</i>	<i>U.S.A. Pharmacopœia, 1907.</i>
<i>Acid. Hydrocyan. Dil.</i> , 2 to 5 ℥.	<i>Acid. Hydrocyan. Dil.</i> , 1½ ℥.
„ <i>Sulph. Dil.</i> , 5 to 20 ℥. ..	„ <i>Sulph. Dil.</i> , ½ dr.
<i>Aqua Lauro-cerast.</i> , ½ to 2 dr. ..	<i>Aqua Lauro-cerast.</i> , 1 dr.
<i>Other Aquæ</i> , ½ to 1 oz. ..	<i>Other Aquæ</i> , 4 dr.
<i>Elixir Acetomorphin (B.P.C.)</i> ,	<i>(Heroin).</i>
½ to 2 dr.	
<i>Ext. Cinchonæ Liq.</i> , 5 to 15 ℥.	<i>Fluid Extract of Cinchona</i> , 15 ℥.
„ <i>Ergotæ Liq.</i> , 10 to 30 ℥. ..	„ „ <i>Ergot.</i> , ½ dr.
„ <i>Filicis Liq.</i> , 45 to 90 ℥. ..	<i>Aspidium (Dried Rhizome)</i> , 1 dr.)
„ <i>Grindeliæ Liq.</i> 10 to 20 ℥	<i>Fluid Extract of Grindelia</i> , ½ dr.
„ <i>Sarsæ Liq. (B.P.C.)</i> , 2 to	„ „ <i>Sarsaparilla</i> ,
4 dr.	½ dr.
<i>Inf. Buchu</i> , 1 to 2 oz. ..	<i>Fluid Extract of Buchu</i> , ½ to 1 dr.
„ <i>Calumbæ</i> , ½ to 2 oz. ..	„ „ <i>Calumba</i> , ½ dr.
„ <i>Gentianæ Co.</i> , ½ to 1 oz. ..	„ „ <i>Gentian</i> , 15 ℥.
„ <i>Quassia</i> , ½ to 1 oz. ..	„ „ <i>Quassia</i> , 8 ℥.
„ <i>Sennæ</i> , ½ to 1 oz. ..	„ „ <i>Senna</i> , ½ dr.
<i>Liq. Adrenalin Hydroch.</i> , 10 to	<i>Liq. Adrenalin (P.D.)</i> 5 to 30 ℥).
30 ℥.	
„ <i>Arsenicalis</i> , 2 to 8 ℥. ..	„ <i>Sodæ Arsen.</i> , 3 ℥.
„ <i>Arsen. Hydrochlor.</i> , 2 to 8 ℥.	„ <i>Acidi Arsen.</i> , 3 ℥.
„ <i>Arsen. et Hydrarg. Iod.</i> ,	„ <i>Donovanni</i> , 1½ ℥.
5 to 20 ℥.	
„ <i>Bism. et Ammon. Cit.</i> ,	(7 per cent. of oxide).
½ to 1 dr.	
„ <i>Hydrogen Peroxid.</i> , ½ to 2 dr.	<i>Aq. Hydrogen Dioxid.</i> , 1 dr.
„ <i>Hydrarg. Perchlor.</i> , ½ to	<i>A 1 in 1,000 solution</i> , ½ to 1 dr.
1 dr.	
„ <i>Strychninæ</i> , 2 to 8 ℥. ..	(A 1 in 100 solution.)
„ <i>Trinitrin</i> , ½ to 2 ℥. ..	<i>Spir. Glyceril Nit.</i> , 1 ℥.

British Pharmacopœia, 1914.*U.S.A. Pharmacopœia*, 1907.

<i>Mistura Guaiaci</i> , $\frac{1}{2}$ to 1 oz. ..	<i>Tr. Guaiaci</i> , 1 dr.
" <i>Nepenthe</i> " (? <i>Morph. Hydrobrom.</i>), 10 ℥.	Say <i>Tr. Opii Deodorati</i> , 8 ℥.
<i>Oxymel Scillæ</i> , $\frac{1}{2}$ to 2 dr. ..	<i>Acet. Scillæ</i> , 2, <i>Honey</i> 3 parts.
<i>Sp. Ammon. Fetid.</i> , 20 to 40 ℥.	<i>Tr. Asaf.</i> , 15 ℥., and <i>Sp. Ammon. Ar.</i> , 15 ℥.
„ <i>Armorac. Co.</i> , 1 to 2 dr. ..	No equivalent (<i>Horseradish, etc.</i>).
„ <i>Chloroformi</i> , 5 to 20 ℥. ..	<i>Sp. Chloroformi</i> , 30 ℥.
„ <i>Juniperi</i> , $\frac{1}{2}$ to 1 dr. ..	<i>Sp. Junip.</i> , 30 ℥.
<i>Succus Scoparii</i> , 1 to 2 dr. ..	<i>Scoparius</i> (Dried Tops, 15 grains).
<i>Syr. Ferri Iod.</i> , $\frac{1}{2}$ to 1 dr. ..	<i>Syr. Ferri Iod.</i> , 15 ℥.
„ <i>Phosph. Co.</i> $\frac{1}{2}$ to 1 dr. ..	No equivalent (<i>Parrish's Food</i>).
„ <i>Zingiberis</i> , $\frac{1}{2}$ to 1 dr. ..	<i>Syr. Zingib.</i> , 4 dr.
<i>Tinct. Aconiti</i> , 2 to 5 ℥. ..	<i>Tr. Acon.</i> , 15 ℥.
„ <i>Camph. Co.</i> , $\frac{1}{2}$ to 1 dr. ..	<i>Tr. Opii Camph.</i> , 2 dr.
„ <i>Catechu</i> , $\frac{1}{2}$ to 1 dr. ..	(Say <i>Tr. Krameriæ</i> , 1 dr.)
„ <i>Chlorof. et Morph.</i> , 5 to 15 ℥. ..	(Say " <i>Chlorodyne</i> .")
„ <i>Digitalis</i> , 5 to 15 ℥. ..	<i>Tr. Digitalis</i> , 15 ℥.
„ <i>Rhei Co.</i> , $\frac{1}{2}$ to 1 dr. ..	<i>Tr. Rhei Aromat.</i> , $\frac{1}{2}$ dr.
„ <i>Strophanthi</i> , 2 to 5 ℥. ..	<i>Tr. Strophanthi</i> , 8 ℥.
<i>Vin. Colchici</i> , 10 to 30 ℥. ..	<i>Vin. Colchici</i> , $\frac{1}{2}$ dr.

NOTE.—*B.P.C.* = British Pharmacopœia Codex.

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