

Pages Missing

663

THE
CANADIAN HORTICULTURIST

PUBLISHED BY THE
FRUIT GROWERS' ASSOCIATION OF ONTARIO

VOLUME XXV

EDITOR. LINUS WOOLVERTON, M. A.

1902.

Index to Volume XXV

OF THE

CANADIAN HORTICULTURIST

	PAGE		PAGE
Affiliated Societies	79, 121, 162, 207	Barbed Wire Fence	77
Agricultural University	45	Barberry Shrub	179
Algoma	121	Baskets for Fruit	194
Ammonia Copper Carbonate	304	Bedding Plants	152, 246
Annapolis Valley	407	Begonias	115, 248, 249, 285, 330, 422, 476
Annual Meeting, 1902	480	Bill B ards	32
Annals	68, 114, 115, 155	Blackberries, Early King	366
Anthracoise	172	" Kittatinny	366
Aphis	44, 114, 160, 205	" Maxwell	366
Apple Box	35, 205, 352, 380, 452, 494	" Meisereau	325
Canker	251	" Snyder	367
Cider	177	" Western Triumph	366
Crop	399	Black Knot	368
Culture	465	Boer Delegation	532
Enemies of the	235	Bordeaux Mixture	103
Growers' Association	412	Borders	214, 250
Growing	318	Boston Fern	510
Imports	466	Bougainvillea	237
Markets	45, 121, 214	Boulevards	142
Orchard, Mulch for	260	Bouquet Making	287
Orchard, Varieties for	92	Briarcliff Manor	320
Packing	95	Broadview Boys' Institute	222, 265
Pruning	50	Bug Death	120
Pomace	492	Bulbs	115
Scab	170, 214, 465, 533	Burbank, Luther	221, 267
Tree Management	96	Burke, Rev. Father	32, 60, 144
Trees, Value of	396	Burlington Fruit Growers	363
Apples, Algoma	510	Cabbage, Club Root in	119
Alexander	509	Cabbages	343
Allenby's Seedling	483	Cacti	176, 288
Astracan	305, 398, 497	Callas	328
Ben Davis	131, 493, 510	Camellia	201
Bismarck	47	Canadian Horticultural Association	413
Charlamoff	509	Canadian Maples	325
Cranberry Pippin	85	Canker Worm	204, 218, 258
Duchess	354, 509	Cannas	158, 382
Fawcett's Seedling	432	Cauliflower	197
Gideon	500	Cedar Hedge	251
Golden Russet	91	Ce lars of Lake Couchiching	568
Gravenstein	167	Central Experimental Farm	57
Green ng	497	Cereus, Night Blooming	425
Ontario	447, 482	Cherries, Bing	90
Phoenix	483	" Centennial	91
Roxbury Russet	204	" Elkhorn	264
Scott's Winter	510	" Early Parole	262
Spy	280	" English Morello	204, 457
Wealthy	510	" Plymouth	341
Yellow Transparent	510	" Reine Hortense	104
By-products	505	" Windsor	204, 457
Prices of	400, 447, 455	Cherries and Cherry Birds	311
Arbutus	384, 477	Cherry Fruit Worm	47
Back Yards	245	Harvest	261

	PAGE		PAGE
Cherry Planting	13	Fruit Testing Station, Burlington	365
" Rot	48	" Trade, Fancy	401
Chrysanthemums	60, 351, 522	" Trees, Growth of	503
Civic Improvement	120, 178, 350	" Tree Leaves	278
Clay Soil for Fruit	351	" Marks Act	67, 149, 174, 372, 378
Cleaning the Bark	43	Fuchsia	114, 491
Clematis Paniculata	241	Fuller System	451
Climbers	94	Garden Barrow	133
Club Root	33	Gardens at Hamilton	470
Cobourg Meeting	33	Georgian Bay District	461
Codling Moth	218, 260	Georgian Bay Fruit Growers	24
Cold, Injurious Degrees of	217	Geranium Blight	34
Cold Storage	131, 217, 275, 307, 404, 435	Geraniums, Bedding	198, 255, 229
Coleus in Winter	73	Glasgow Exhibition	14, 207
Cork Exhibition	430	Gooseberries, Downing	213
Cornus	73	" Pearl	213
Cover Crops	97, 109, 134, 183, 232, 355	" Red Jacket	213
Cow Pea	171	" Falling Off	56, 409
Creelton, G. C.	4	" Pruning	57
Crude Petroleum	184, 231	" Thinning	56
Currants	126, 277	" Varieties of	212
" Collins	366	Gooseberry Cultivation	110
" Perfection	262	Gore Park	415
" Pomona	366	Grade Marks	449
" Wilder	266	Grading Fruit	133, 353, 429, 449
Cyclamen	113	Grafting	175, 204, 481, 484
Dale, Henry	135	Grape Grafting	173
Day Lily	385	Grape Pruning	450
Deep Rooted Trees	42	Grapes, Campbell's Early	41, 110
Deutzia	214	" Diamond	100, 126
Dwarf Apple	47	" McKinley	202
East Central Station	234	" McPike	97
Elm as a Shade Tree	389	" Moore's Diamond	125
Evergreens, Clipping	33	" Niagara	405
Export of Fruit, 204, 250, 306, 363, 457, 490, 495, 496, 533.		Hale, J. H.	313, 369
Export, Planting for	96	Hamilton, Robt.	44
Fairs, Township and County	87	Hawks and Owls	226
Fall Fairs	98	Helianthus Multiflorus	523
Fall Plowing	491	Herbaceous Border	133
Farmers' Institutes	87	Hints to Ontario Fruit Shippers	327
Ficus	116, 331	Hired Men	89
Fish Oil Emulsion	232	Hollyhock Rust	294
Fern Balls	38	Home Garden	430
Ferns and Insects	119, 205	Home Grounds	430
Ferns for the House	25	Honest Fruit Packing	112
Fertility of Orchards	168, 130	Horticultural House Meeting	93
Fertilizers	91, 96, 100, 161, 261	Horticultural Societies, Hints for	52
Floral Love Story	37	Humus	157
Flower Gossip	246, 282	Hvacinths	382
Flower Notes	475	Industrial Fair	44, 407
Foreigners	89	Insecticide, Tobacco	13
Freesias	113, 254, 328	Irrigation	281
Freights on Fruits	11, 353	Ixia	46
Fruit Blossoms	462	Kedzie Mixture	184
" Branches and Spurs	223	Kerosene Emulsion	235
" Buds	186	Kniffen System	450
" Crop Report	278, 321	Laburnum	117, 205
" Farms, Large vs. Small	42, 89, 258	Landscape Gardening	358, 430, 490
" Growing Lessons	16, 53	Lawn Grass	130
" Growing, Successful	395	Lawn Making	159
" Growers at Rochester	47	Lecanium Scale	388
" Growers' Institutes	57	Lime, Salt and Sulphur, 59, 117, 131, 169, 185, 300	
" Grader	42	McCabe Orchard	455
" Institutes	386	McDonald Seed Grain	58
" Packages	35, 43	Maple Trees, Tapping	100, 312
" Prices	396	Markets	80, 306, 378, 396, 431
" Prize List	344	Meehan, Thomas	33, 180

	PAGE		PAGE
Men Who Have Succeeded		Plums, General Hand	177
Dale, Henry	134	" Gold	136
Hale, J. H.	313, 369	" Lombard	309
London, J. C.	501	" Pond's Seedling	177
Mechan, Thos.	180	" Reine Claude	177, 351
Mice	251, 531	" Shico	411
Millipedes	389	" Washington	177, 309, 351
Moth Catcher, Haseltine	5	" Wickson	151
Mustard, How to Kill	389	Point Pleasant Park	64
Narcissus	31	Poison Ivy	341
Native Shrubs	134	Pollination	268
New Fruits	430	Pomology	44
New York Market	317	Potato Blight	411
Night Shelter	127	Primroses	70
Nitrification	42	Primula	114
No. 1 and No. 2 Apples	24	Prince Edward Island Fruit Growers	114, 505
Nova Scotia Apples	325	Prize Lists of Fruit	98, 344
Nova Scotia at Pan	33, 36	Pruning	19, 50, 307
Nova Scotia Fruit Growers	95	Pruning Book	430
Officers O. F. G. A.	8	Public Parks	358
Orange Tree	512	Quebec Fruit Growers	48
Orchard Cultivation	225	Quebec, Fruit Growing in	433
" Institutes	191, 290	Railway Stations	359
" Reclaiming Barren	228, 408	Rambler Roses	383
Overcropping	308	Raspberries	511
Oyster Shell Louse	57	" Harris	202
Packages	43	" King	326
Packing, Frauds in	401	Red Spider	240
Pansies	329	Refrigerator Cars	407
Paris Daisy	79	Robson's Crab	430
Paris Green	77, 104	Rose Buds Not Maturing	34
Parks	92, 357, 513	Rose Pests	239
Peaches	88, 90, 93	Roses	113, 155, 445, 448, 475
" Duke of York	326	Rose Thrip	42, 239
" St. John	395	Sand vs. Clay	351
Peach Curl	90, 94, 101, 185	San Jose Scale, 5, 10, 36, 139, 161, 173, 194, 458, 500	500
" Tree Borer	214	Sault Ste. Marie, Fruit at	500
Pear Blight	453	Scabiosa	115
" Canker	453	School Gardens	358, 515, 517
" Orchard	499	Seed Fairs	87
Pears, Anjou	169, 447	Shading	153
" Barry	251	Shelter for Strawberry	218
" Duchess	497	Shrubbery in Winter	72
" Easter Burre	212	Single Petunia	71
" Flemish Beauty	396	Snow Ball	295
" Hoosic	403	Soil for Fruit	351, 515
" Kieffer	177, 364, 405, 631	Sour Cherry	45
" Mt. Vernon	251	Species, Origin of	506
" Rivers	395, 464	Spraying, Failure in	88
" Seckel	489	" Notes on	101, 230, 294, 506
" Triumph	441	" Protection when	92
Pears for Export	141, 352, 355	" Success in	90, 506
" to Cover Season	109, 203	Spray, New and Effective	59
Pelargoniums	329	Spruce Gall Louse	377, 437
Perennials, Hardy	200, 424, 524	Spy Top-worked	31
Petunias	69, 330	St. Joseph's Island	387
Plum Curculio	258	St. Louis Exposition	44
" Gathering	261, 309	Strawberries, Brandywine	234
" Growing in Ontario	349	" Clyde	107, 234
" Marketing	261, 309	" Excelsior	197
" Off Year	323	" Michel	107, 264
" Rot	88	" Sunrise	265
" Twig Gall	150	" Williams	107, 310
Plums, Bartlett	411	" Woolverton	310
" Bradshaw	349	Strawberries for Exhibition	110
" Burbank	272	" Yield of	311
" Chabot	403	Strawberry Culture	47, 140, 195, 232, 310
" Climax	411	Summer Flowers	422
" European	350		

	PAGE		PAGE
Sun Scald	57	Trees, List of	134
Sword Ferns	71	Trolley Lines for Fruit Growers	43
Table Decorations	7	Tuberous Begonias	115
Thinning Fruit	215, 274, 307	Viola Tricolor	76
Tillage	96, 108, 142, 231	Whale Oil Soap	34
Tomatoes, Early	63, 308, 364	Wheat Wire Worms	530
Tools for Orchard	259	Whitney, Decease of W. H.	43
Top Working Spy	31	Window Garden, 69, 70, 74, 115, 155, 284, 381, 476, 519, 528.	
Transportation	95, 145, 178, 474, 499	Winter Meeting	429
Trap Lanterns	467	Wolverhampton Exhibition	295, 362
Tree Planting	127	Woodstock Fruit Growers	442
" Protection	58, 133	World Beautiful	242
" Top	105		
" Trunks, Growth of	54, 55		

INDEX TO ILLUSTRATIONS.

	PAGE		PAGE
Abutilon	115	Easter Beurre Pear	210
Agassiz Bridge	358	East Central Fruit Station	434
Allan, A. McD.	362	Ewing, A. H.	416
Apple Box	35	Ferns	26, 27, 28, 519
Apple Scab	170, 171	Ficus	116, 331, 332, 333
Astracan Apple	305	Flower Border, Hardy	526, 527
Avlett, S	524	Foxglove	527
Back Yards	244	Freezia	284, 329
Barrow Garden	133	Fruit Blossoms	462, 463, 464
Begonia	248, 285, 330, 422	Fruit Buds	187, 188, 189
Bitter Rot	498	Fruit Spurs	166, 167, 224
Boer Delegation	532	Fuller System	450
Bordeaux Mixture	103	Gardens, 162, 242, 243, 245, 402, 470, 471	
Bougainvillea	256	Geraniums, Cutback	285
Bradshaw Plum	348	Gibson Greenhouse	349
Burbank, Luther	222	Gloxinia	472
Burbank Plum	271, 272	Golden Plum	130
Burke, Rev. Father	32	Gore Park	415
Cacti	156, 157, 289	Hale, J. H.	313
Calla Lily	320	Hale Orchards	314, 315, 370, 371
Camellia	201	Hamilton Views, 417, 470, 471, 514, 515, 516, 517, 518.	
Campanula	525	Hayden, J. D.	10
Campbell's Early Grape	41	Heathcote	11
Canker Worm	219	Helianthus	523
Cayuga Gardens	162	Haskins, Dr.	343
Cedars	508	Humbolt Blackberry	266
Cereus	425	Huycke, Mayor	9
Cherries	262	Hybridizing	268, 269
Chrysanthemum	423, 520, 521, 522	Iberis	526
Civic Improvement	356	Iceberg Blackberry	270
Clematis	241	Iris	153
Cobourg Fruit Exhibit	7	Kerr, Senator	12
Cobourg Fruit Growers	5	Landscape Gardening, 242, 243, 356, 357, 358, 360, 361.	
Cochrane Fruit Case	305	Lawson, T.	524
Codling Moth	218	Lime and Sulphur Spray, 59, 60, 61, 62, 458, 500	
Coreopsis	155	Loudon, J. C.	501
Cover Crop, Wild	134	Mallows	423
Cranberry Pippin Apple	84	Manton, Thos.	414
Creelman, G. C.	4	Maple Flowers	339
Curiosity	499	Maple Leaves	338
Currant Anthracnose	173	Maple Smooth	337
Currant Leaf Spot	173	Maple Sugar	336
Dale, Henry	135	Meehan, Thos.	33, 180, 182
Dale's Greenhouses	136, 137, 138	Mepsted, E.	419
Day Lily	385	Michel Strawberry	265
Diamond Grape	124		
Dicentra	526		

INDEX

v

	PAGE		PAGE
Morello Cherry	456	School Houses	517
Napanee, Booth at	485	Shasta Daisy	270
Park, Boston	357, 358	Simmers, H.	418
" Bridges	513	Snelgrove, Major	11
" Point Pleasant	64	Spraying Demonstration	230
" Small	92	Spraying Peaches	62, 102
Peach Branch	486	Spraying, Trees Treated	458, 500
" Curl	102	Spruce Gall Louse	376, 377
Pears for Export	140-141	Stark Apple	302
Peony	154	St. John Peach	394
Plum Twig Gall Mite	151	Strawberry, Star	195
Poppy	424	Thinning Fruit	216
Primula	114	Tree Protectors	133
Pruning	19, 20, 21, 23	Triumph Pear	440
Pruning Illustrations	51	Trunks, Tree	17, 18, 53, 54, 55
Railway Station Grounds	360, 361	Walkerton Fruit Station	129
Rambler Roses	383	Webster, C. M.	525
Roberts, Lord	46	Wilder, Currant	366
Rocket	528	Window Garden	284
San Jose Scale	139	Wolverhampton Show	427, 428
Saugeen Valley	128	Woodstock Views	142-148
Seckel Pear	490		



WINDSOR.

THE CANADIAN HORTICULTURIST



* * JANUARY * *

THE WINDSOR CHERRY.



HIS cherry has been so much talked about during the past ten years that our readers will be pleased to see a colored plate of it as a frontispiece to this number.

In Ontario the later cherries have proved rather more profitable than the early ones because of American competition. For this reason we are inclined to plant English Morello instead of Montmorency, and Elkhorn and Windsor instead of Governor Wood and Black Tartarian.

Our colored plate shows prodigious fruitfulness; but only in exceptional cases have we found the Windsor to bunch in this way. More often the fruit hangs in twos and threes, and gives only a moderate yield. The worst fault with the Bigarreau cherries is their susceptibility to the Rot, and we have found the Elkhorn very troublesome in wet seasons. This same fault seems to be common with the Windsor, but probably can be controlled with Bordeaux spray. Indeed Mr. W. M. Orr, of Fruitland, stated

at Cobourg that he had succeeded in harvesting an excellent crop of cherries of various sorts, including the Windsor, during this past season when cherries in orchards not sprayed were perfectly worthless. From his evidence it would seem that spraying the cherry is most signal in its results in controlling monilia.

This cherry originated in the grounds of the late James Dougall, Windsor, has been well tested in New York State, and has the reputation of being hardier than most other varieties.

We have grown it at Maplehurst for some years, and have planted out about two acres of the variety, but have not as yet sufficient notes to make a permanent description of it. We quote the following note from the report of the Michigan Experimental Station, which accords with our experience thus far: "Free, vigorous, and a good cropper; fruit large heart-shaped; color dark red; quality very good. A very valuable market cherry."

A STEP FORWARD.

N important change takes place from the 1st of January, 1902, in the management of the Ontario Fruit Growers' Association. Mr. L. Woolverton, of Grimsby, Ont., who has held the combined office of Editor of this Journal and Secretary-Treasurer of the Association for fifteen years, finds the work growing upon his hands until the responsibility is too heavy for one person to carry. In order, therefore, that he might give more attention to the journal and make it more useful to the fruit growers of every part of the Province, Mr. Woolverton asked for a division of his work, and that he be relieved of the Secretary's duties. At the Cobourg meeting this request was granted and Mr. G. C. Creelman was appointed to this work for the year 1902.

With this change we anticipate a great advance in our work all along the lines. No doubt arrangements will be made by Mr. Creelman whereby local fruit growers' institutes will be held in every part of our province, and all sections will work harmoniously for the general good; while the editor hopes to be able to come into closer touch with the fruit growers of the various districts both by visits to their fruit farms and by attending many of their local meetings.

THE NEW SECRETARY.

Mr. George Christie Creelman, who was at the last annual meeting of the Ontario Fruit Growers' Association elected to the position of secretary-treasurer of that organization, is a native of this province, born in the town of Collingwood and reared on a



FIG. 2203. MR. G. C. CREELMAN.

fruit farm on the side of the Collingwood mountain. In 1888 Mr. Creelman graduated from the Agricultural College, Guelph, taking the degree of B. S. A. from the Toronto University. Immediately on graduating Mr. Creelman accepted a position on the staff of the Agricultural and Mechanical College of Mississippi, where he remained as Professor of Biology for nearly ten years. For the last three years Mr. Creelman has been Superintendent of Farmers' Institutes for the Province of Ontario, and last year, at the request of the Executive Committee of the Fruit Growers' Association he took charge of the lecture work in connection with the horticultural societies.

NOTES FROM THE BIOLOGICAL DEPARTMENT, ONTARIO AGRICULTURAL COLLEGE.

1. *More about the Home of the San José Scale.*

IT is interesting to note the efforts which have been made, and are being made to determine the original home of the San José Scale. Ever since its dread presence in the eastern portion of this continent was detected in 1893, entomologists and practical fruit-growers have been anxious to secure a natural remedy—one which would keep the Scale in check, as the imported lady-bird from Australia now keeps the Cottony-Cushion Scale in subjection in California. Any doubt as to the realization of such a wish should not prevent a search for the native home of the Scale, for it would appear that there the pest is kept under control by some agency. To determine this controlling factor and to introduce the factor into this country is thus the object of the laudable efforts to locate the home of the San José Scale.

For many years after the California orchards were first attacked, it was supposed that the Scale had been introduced from Chili, for it was discovered in that country in 1872; but later investigations in Chili showed pretty conclusively that the Scale was not a native, but an introduced insect. So this theory was in time abandoned.

Next, Prof. J. B. Smith suggested, in 1895, that the native home of the San José Scale was probably in one of the Northern Pacific States. This theory was, however, never very seriously entertained by many of our best entomologists, and was also soon abandoned.

Japan was next pronounced the home of the Scale, and many evidences seemed to point to its introduction from that country :

1. The agents of the quarantine station in California found Scale on nursery stock imported directly from Japan ; 2. Mr. Kuwana, a Japanese student at Stanford University, California, found the Scale so widely spread throughout the Japanese Empire that he came to the conclusion that his native land was also the native land of the San José Scale. He announced, moreover, that the Scale was there kept in check by certain parasites and lady-birds.

Following immediately in Mr. Kuwana's important announcement, Dr. Howard, chief Entomologist at Washington, sent Mr. Marlatt early last summer to Japan to investigate the conditions there, and if possible, to bring back to America some of the parasites and predaceous insects which were instrumental in keeping the Scale in check.

At a recent meeting of the Biological Society at Washington, Dr. Howard stated that he had just received a letter from Mr. Marlatt announcing that the original home of the San José Scale was not in Japan, but in that region of China immediately south of the Great Wall, and that a consignment of living lady-bird beetles which were found preying on the Scale in China, was on its way to America.

I am sure it is the ardent wish of every fruit-grower that these lady-bird beetles may arrive in a healthy condition, and begin work immediately on Scale-infested orchards.

2. *The Haseltine Moth-Catcher.*

This moth-catcher has been widely advertised as a codling-moth destroyer. To test the merits of the moth-catcher, I had two of them placed in the College garden among apple trees. They were kept burning every night, with but a few exceptions, from June

7th to Sept. 7th. The insects captured were taken out and identified every morning.

Following is the result of the captures :

Decidedly beneficial insects	{	Inchneumon Flies were	70 %	of all taken.
		Lady-birds	2½	" " " "
		Ground beetles	1½	" " " "
		Dung beetles	0	" " " "
		Mosquitoes	5	" " " "
		Fire flies	2½	" " " "
		Crane flies	1½	" " " "
		May beetles	5	" " " "
		Squash bug	2	" " " "
		Cucumber beetles	2½	" " " "
		CODLING MOTHS	0	" " " "

The inventor of this trap-lantern moth-catcher boasts that he sold over 40,000 during the past season. If all these were in operation for four months, probably forty

millions of decidedly beneficial insects were captured and destroyed.

I find a great similarity in the results of my experiments with those of other entomologists at agricultural experiment stations in the United States. In every case, without exception, so far as I am aware, no codling moths were taken.

Prof. Webster, State Entomologist of Ohio, advises us Canadians to impose a specific duty of \$5.00 on every Haseltine Moth-Catcher brought into this country, for he considers it not only an imposition, but a source of untold injury to the orchards of the country.

W. LOCHHEAD.

THE KIEFFER SHIPMENT IN COLD STORAGE—I.

MR. WILSON'S REPORT.

DEAR SIR,—In reference to your inquiry regarding my recent trip to the Glasgow Exhibition, and also the experimental car load of fruit to the Scottish Commercial Metropolis, I beg to submit the following particulars.

I reached Montreal October 23rd. The car of pears packed by Mr. Murray Pettit arrived on the 24th in excellent condition, and were very carefully transferred by the agents of the Donaldson S. S. Line into the cold storage compartment of the S. S. Marina. The Government Fruit Inspectors (Mr. W. A. McKinnon and others) after examining these pears, expressed themselves satisfied with the fruit, and were pleased to observe that not a single package of the whole box was either bruised or broken. We left Montreal on the afternoon of the 25th, and from the time the cold storage compartment was closed until the arrival of the Marina in Glasgow (November 7th) the temperature of the compartment was taken every four hours, night and day, the highest register being 41 degrees, and the lowest

37 degrees. The pears were unloaded on the morning of November 8th, and on examination were found to be just a little riper than when packed. Very little of the maturing process having taken place during transit. With such a complete cold storage system as this I am certain the most delicate of our Canadian fruits, if carefully and properly packed, can be landed in Britain in "perfect condition" and command the highest price obtainable. Condition is everything, and the day these pears were exhibited for sale their appearance and perfect condition was so striking (not one pear being deteriorated) that buyers offered to take the whole shipment at prices fully 50 per cent. in advance of the figures at which the same variety of pears was selling, wrapped and packed in ordinary boxes or barrels. Messrs. R. & W. Davidson, Glasgow, to whom these pears were consigned, stating the quality, condition and appearance of the fruit was unprecedented in a shipment of this magnitude, and expressed great satisfaction at the size of the packages. Small

handy cases containing 35 to 40 lbs. of fruit are what every dealer wants. Twenty people can afford to buy a small package to the one who can afford to purchase a barrel, and as the majority of the packages are barrels, the one buyer has the advantage over the twenty, and the competition being so much reduced the man who can buy and pay for the barrel practically controls the whole market. As

far as I can see, the shipper who uses small neat attractive packages, and packs only first-class fruit into them, cannot fail to come out ahead. As I do not wish to encroach too much on your valuable space at present, with your permission I will follow up this subject a little further in your next issue. I am, Sir, yours truly,

London, Ont.

WM. WILSON.

SIMPLICITY IN TABLE DECORATIONS.—Elaborate and expensive floral centrepieces are not necessarily the most beautiful. Simplicity often rules the worlds of art and nature. Who would consider as beautiful, at first thought, a few sprays of the leafy growth of the garden asparagus together in a small vase with a like number of golden coreopsis? The effect is charming if the vase also be simple. This should be remembered, that a vase of flowers is intended to display the beauty of the flowers and not man's handiwork in molding or coloring the vase.

The umbels of white flowers of the wild carrot are very pretty in vase decorations, yet how few persons would think of gathering them for that purpose!

While it is a benefaction to man to have at command, for use and proper enjoyment, all the beautiful things possible, it is fool-

ishness to trample aside a host of pleasing things, merely to strive for the elusive and unattainable or imaginary beauties. The writer does not lack praise for rare beauties, but rather deplores the tendency to look over and beyond Nature's abundance in the fields and along waysides.

Did you never pull a flower of the wild carrot? The tenacious fibre of the stem requires a pull. Never smell of its peculiar fragrance—if fragrance it may be termed? Note the odd, concave form of the umbel,—like a good-sized butter-plate.

There is much in Nature for us to learn and appreciate, and in our observations we come to know her better, we learn to love her, and that feeling will embrace our fellow-men. Let us, then, bring her simplest charms to our hearts and homes, without fear of missing something more rare and more beautiful beyond.—*Mechan's Monthly*.

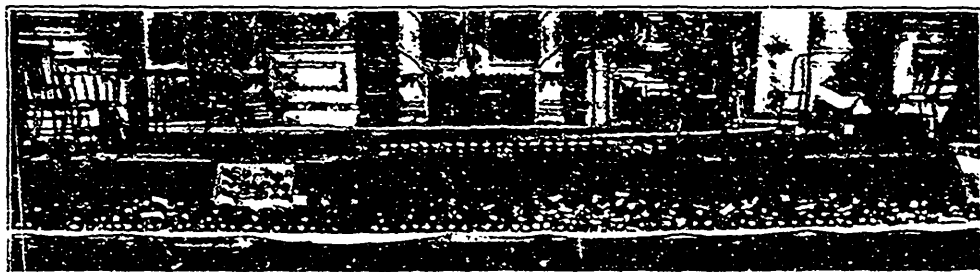


FIG. 2204. THE FRUIT EXHIBIT AT THE COBourg MEETING, WHICH INCLUDED A COLLECTION OF APPLES GATHERED IN 1900, AND PRESERVED IN COLD STORAGE IN EXCELLENT CONDITION.

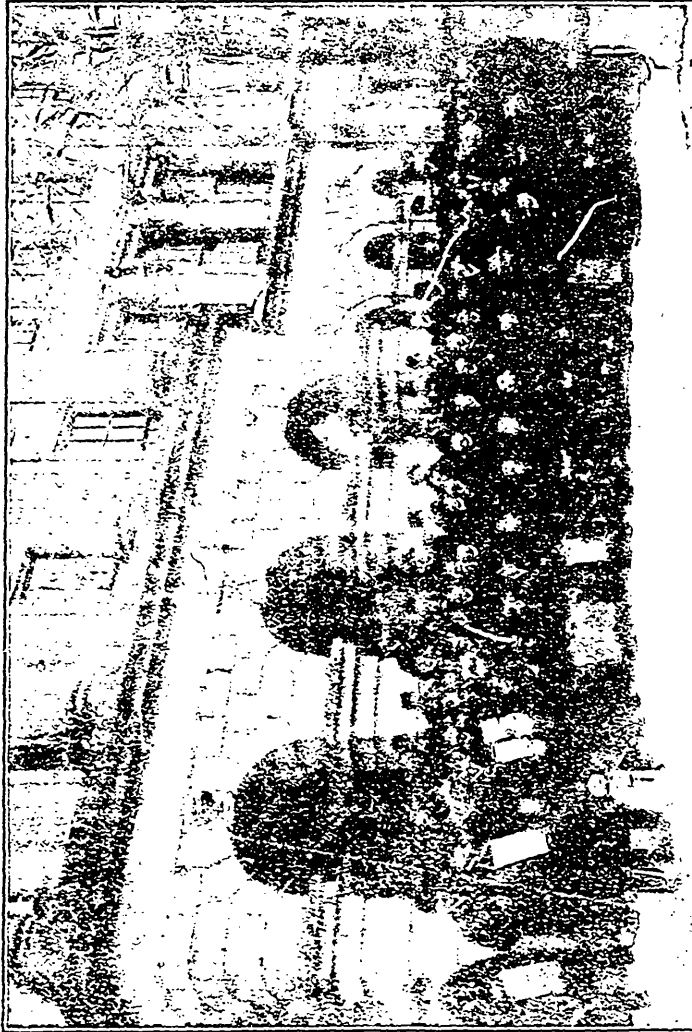


FIG. 2295. SHOWING GROUP OF OFFICERS AND MEMBERS OF THE ONTARIO FRUIT GROWERS' ASSOCIATION AT THE ANNUAL CONVENTION, COLORADO, DEC. 4, 5 AND 6, 1901.

THE COBOURG MEETING A MAGNIFICENT SUCCESS.



FIG. 2206. MAYOR E. C. S. HUYSKE.
Who gave our Association a hearty welcome to the Town of
Cobourg, and took a deep interest in the meetings.

HEVER in the history of our Association was there so great an attendance or so deep an interest taken in our meetings as at our recent convention at Cobourg.

The day meetings in the Court room were attended by nearly 200 people and the evening meetings in the Opera House were crowded to the doors.

The morning meetings were devoted to business, the afternoon to educational topics on the growing and marketing of fruit, and the evening sessions were of a popular character.

HONORARY DIRECTORS.

Under the first head an innovation was introduced by making Mr. Thomas Beall

and Mr. A. M. Smith, honorary directors in view of their long and excellent services rendered to this Association, the former having been instrumental in organizing about sixty affiliated Horticultural Societies and the latter being the only one with us of the Constituent members.

OFFICERS.

The following are the officers for 1902 :—
G. C. Caston, president ; W. H. Bunting, vice-president ; R. B. Whyte, W. A. Whitney, Harold Jones, W. H. Dempsey, Major Snelgrove, Elmer Lick, M. Pettit, E. Morris, J. S. Scarff, W. W. Cox, T. H. Race, Alex. McNeill and C. L. Stephens.

SAN JOSE SCALE.

The San Jose Scale was reported on by Mr. G. E. Fisher, the official inspector. This pest had not appeared in any new localities owing to the vigilance exercised by the Department of Agriculture, but in places where it was already established and neglected the condition of things was most alarming.

Crude petroleum has proved the most effective spray for apples, pears and plums in treating the scale ; it might not entirely

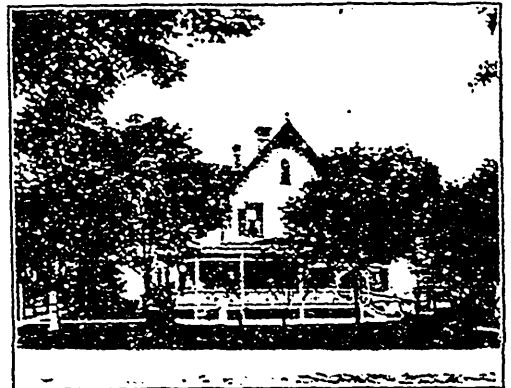


FIG. 2207. RESIDENCE OF MAYOR HUYSKE.



FIG. 2268. J. D. HAVEN.

President of Cobourg Horticultural Society, who was present and took a prominent part in our meetings.

eradicate it, but it would not spread, and the trees could be kept healthy and in a condition for bearing clean fruit. For the peach tree the whale oil soap was still recommended, because it was easily injured by the petroleum.

As to the cost of material, the latter was much the cheaper. To treat a full grown peach tree for example with soap cost about twelve cents, while to treat the same tree with crude petroleum would only cost about two cents.

Fumigation of orchard trees has been tried, and was a complete success in killing the scale, but it was very difficult of application and rather expensive.

The discussion culminated in the following resolution:

In view of the fact that the San Jose scale act is not being enforced, and that in many fruit grow-

ing sections where the interests are large and very little, if any of the scale exists, it is desirable that the growers have government assistance to protect themselves against this pest.

Therefore, Resolved that the San Jose Scale committee be authorized to urge upon the government the importance of enacting permission to legislate on the lines of the following memo:—

1. It shall be a punishable offence for anyone to neglect to eradicate the San Jose Scale at once when it is located and brought to the attention of the owner,

- (a) by burning the infested trees,
- (b) by fumigation with hydrocyanic gas,
- (c) by spraying with crude petroleum,

(d) or by such other means as may be recommended by the Department or its officers from time to time.

2. That any township must, on the petition of fifteen rate payers, appoint an inspector or inspectors, whose duties shall be to thoroughly inspect all fruit trees subject to San Jose Scale in the township, and see that the scale is eradicated where discovered.

3. That the inspector shall be paid one third by the township, and the balance by the province.

4. That the said inspector is to be liable for neglect of duty.

5. That the Provincial inspector shall supervise the township inspectors, direct them, and see that they are doing their work in the most effective and economical manner, and see that they make thorough inspection and that they secure the carrying out of the law.

6. That the Government supply suitable material for spraying on the same terms as has been done during the past season.

HORTICULTURAL INFORMATION.

How best to educate fruit growers throughout the province in the best methods of horticultural practice was discussed, and a resolution passed asking the Provincial



FIG. 2269. "THE MAPLE," RESIDENCE OF SENATOR KEEFE.



FIG. 2210. MAJOR H. J. SELGROVE,
Governor of the County Gaol, who was elected one of our
Directors for 1924 at the Cobourg meeting.

Minister of Agriculture, to issue a series of practical bulletins on the first principles of fruit growing. Attention was directed to the series of articles entitled "First Lessons in Fruit Growing" by Prof. Hutt of the O. A. C. Guelph, which are now to appear in the Canadian Horticulturist.

If this publication could be more widely distributed among our farmers it would itself constitute an excellent medium for such information.

FREIGHTS ON FRUITS.

The Transportation Committee brought in a report, which, while thanking the companies for the small concessions made to fruit growers, regretted that there was still much reason for complaint, because rates on fruit were so much higher than on other

commodities, thereby crippling the fruit industry and which stated that while requests had been once more presented to the railways for concessions which were considered just and reasonable, they had been again refused. It was recommended that the matter be followed up still further, and in the meantime every effort be made to gain information and strengthen the position of the committee, so that sufficient pressure might be brought to bear to secure relief from unjust discrimination against the fruit trade.

Also requesting the Government to continue the valuable assistance already rendered in connection with the export trade in fruit.

This report was practically laid on the table and superseded by the following ;

That various committees and deputations from this Association and from other bodies of fruit growers have from time to time laid before the Railway authorities the injustice of the freight rates and regulations affecting the transportation of fruit; that the railway authorities have invariably received such deputations with the greatest courtesy and have quite as invariably refused to grant any but the most meager concessions; that your committee see no reason to hope that any rates less than "what the traffic can bear" will be voluntarily conceded by the railways; that the Dominion Parliament is the only authority in the country with the power necessary to compel transportation companies to do justice to the public;

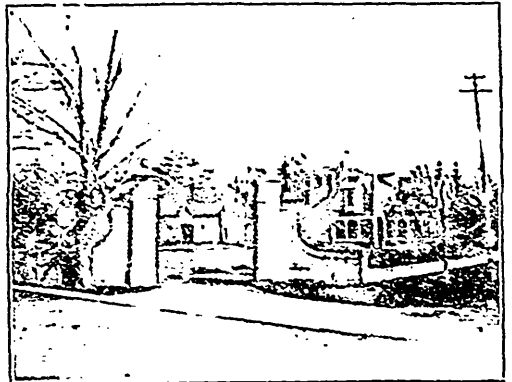


FIG. 2211. "HEATHCOTE,"
Property of Mr. W. F. Ladd of Galveston, Texas, and
present occupied by Mrs. Gen. Grant,
of New York City.

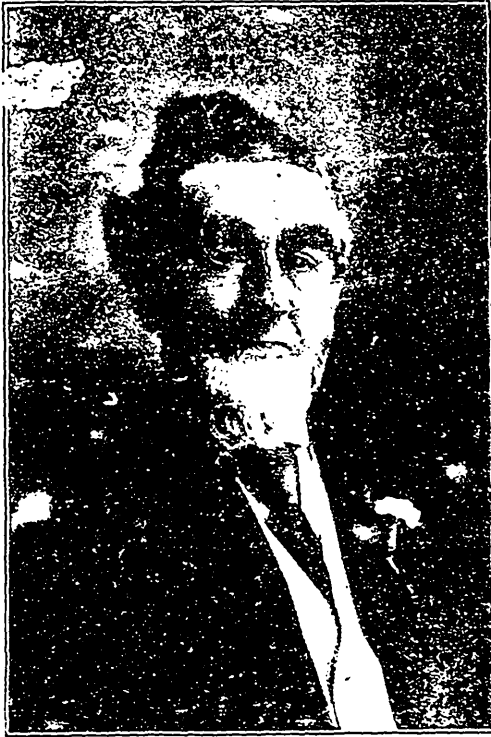


FIG. 2212. SENATOR KERR,

who gave our Association a public address of welcome. The Hon. Wm. Kerr, K. C., is a B. A. graduate of Victoria of 1855, and LL. D. in 1887. He was Mayor of Cobourg in 1867, created Q. C. in 1876, called to the Senate of Canada in 1899.

that your committee therefore recommend that the Government of Canada be memorialized to appoint a Railway Commission without delay to fix reasonable rates for the carrying of goods by freight and express, and to provide for the enforcement of the rates and regulations made by such Commission by the most summary and simple process possible, with heavy penalties for all infringement of such rate and regulations.

A new committee, consisting of Messrs. H. W. Dawson, of Toronto, R. W. Graham, of Belleville, and E. D. Smith, M. P., of Winona, was appointed to push the matter of Railway Legislation.

PRACTICAL SUBJECTS.

Among the educational and practical subjects discussed in the afternoon meetings was the Fruit Marks Act. Prof. Robertson stated that so far the work of the inspectors

had been educative but that, hereafter, persons transgressing the Act would be prosecuted.

Mr. H. N. Hutt of Southend, one of the speakers on fruit topics at Farmers' Institutes gave an excellent address on Pruning, which we give elsewhere in full.

The addresses of Prof. Saunders on the work of the Dominion Experimental Farms in producing hardy fruits, and Prof. Macoun on the American and Nigra plums are of much value, and will appear in full in our report, which will be published earlier than usual.

POPULAR SESSIONS.

At the evening meeting on Wednesday addresses of welcome were delivered on behalf of the town of Cobourg and the united Counties of Northumberland and Durham by His Worship, Mayor Huycke, Senator Kerr, Mr. McColl, M. P., of Cobourg, and that most active and enthusiastic fruit-grower and shipper, Warden Rickard, of Newcastle; all these gentlemen united in giving the Association a most cordial welcome to this beautiful town. Mr. T. H. Race, of Mitchell, responded in a most happy manner. These gentlemen were followed by Prof. H. E. Van Deman, of Washington, D. C., and Prof. J. W. Robertson, of Ottawa, who held the attention of the large audience until a late hour.

On Thursday evening Mr. C. C. James, Deputy Minister of Agriculture, gave a valuable address on the possibilities opening out before young Canadians, and emphasized the fruit industry in this respect. He was followed by Mr. G. C. Creelman, Superintendent of Farmers' Institutes, on "Our Horticultural Societies; their relation to the Home, School and Province. Rev. Father Burke gave a very interesting account of the fruit interests of Prince Edward Island.

The list of gold and silver medals won at the Pan-American Exposition was then read

by Mr. Bunting, and the interest manifested by the audience in the local people who had been successful was very marked. Prof. Waugh concluded a very profitable evening

with an illustrated address upon fruit buds and their development. The local band enlivened both evening sessions with some very fine selections."

QUESTION OF CHERRY PLANTING.

IN an article in the Central Farmer, E. F. Stephens, Crete, Neb., says :

"We now believe that commercial orcharding with the cherry will not be nearly as profitable during the coming ten years as it has been during the last twenty. The cherry is so easily grown and fruits at such an early age that it is not difficult to overstock the market, and at this moment we are inclined to wish that one-half of the 3,000 cherry trees in commercial orchards were apple, peach or plum trees.

"During the last five years we think the majority of planters, in many Nebraska districts, have planted almost as many cherry trees as apple trees ; and that when all these trees come into bearing, those who do not have an excellent local market may find it

difficult to sell all the fruit at a profit. We have in mind a cherry orchard in the central portion of the state containing 5,500 trees, and we know of a large number of orchards containing from 500 to 1,000 trees.

"The fruit of the cherry must be marketed in a few days, and will not stand shipment to any great distance. The fruit of the apple, on the other hand, can be kept for long periods, and has more nearly a universal demand.

"As long as cherries like the Early Richmond, Montmorency and English Morello can be sold freely at from \$1.25 to \$1.50 per bushel, there is good profit ; but when they drop to \$1 a bushel or below there are better returns in raising other kinds of fruit.

TOBACCO IS THE BEST INSECTICIDE.—Most of the insects common to house plants dislike tobacco as much as does the cleanly housewife. The best way to use it as an insecticide upon window plants is to secure a good handful of tobacco stems, place them in an old basin, pour boiling water upon them, and let them stand for several hours.

Then drain off the liquid into a basin or tub deep enough for immersing the tops of your plants in, and dilute it with warm water until it shows only a faint tint of brown. Then take up the plants one at a time, and hold them, tops down, in the water, washing them clean.—*Ladies' Home Journal.*



CLOSE OF THE GLASGOW EXHIBITION.

HOW that the Glasgow International Exhibition is a thing of the past, the grounds deserted and the beautiful exhibition buildings littered with packing cases and packing material and all the debris that accompanies a removal, it may be well for us to look back and take stock, as it were, of our own share in it. And I may say at the outset, that visitors to the exhibition, repeated many times over that the Canadian Pavilion was the most attractive part of the exhibition. And, although one may understand that what is said to one's face may partake of the nature of flattery—that although the people of North Britain may not have kissed the *Blarney Stone*, they may nevertheless blaw in yer lug a wee, and that a grain of salt ought to be added to praise of your own work, etc. Yet I think we ought to give our friends on this side credit for sincerity even though we had no other reason for taking their word. But it is a fact that many of our staff have heard time and again the praises of the Canadian exhibit from the good natured crowd when it was not known that there was "a chiel among them taking notes," and who might print them.

As the immense crowds of people passed through our building we could not help overhearing their remarks on the various items of our exhibits and I may say without any hesitation that they were invariably complimentary to Canada and the Canadians, though occasionally we had to listen to a little good natured chaffing.

Some of the agricultural implements were absolutely new to thousands of visitors, many clever farmers amongst the number. From amongst the larger implements there was the Disk harrow, the Spring tooth harrow and the Hay loader. Among the small implements that seemed to catch the

eye was the two-wheeled hand hoes, exhibited by Wm. Ewing & Co., Montreal. These were closely examined and much admired, but many of the farmers said that the soil of Scotland was too coarse to permit of their use there.

But I am sure you will prefer to hear something of our own special exhibit, namely, the fruit. It was not a very large display, nor was any great expense incurred in setting it out. Nevertheless, it was the centre of attraction in the Canadian Pavilion. Whatever one might miss, no one was willing to miss the fruit. The remarks made upon it were, to us who are accustomed to the magnificent displays made in almost any Ontario town, or in the eastern townships, not to speak of Toronto or Montreal, to say the very least, extravagant.

Thousands of people of all classes said it was the finest they had ever seen, and when they found that it was a year old, and had sampled it, and found it almost equal to fresh fruit, perfect in texture and flavor, they marvelled.

Our exhibit of fresh fruit, i.e., fruit in the natural state, was composed almost entirely of apples. The only exceptions were a few plates of pears, unnamed, that came in one of the Nova Scotia cases.

As a general rule the apples were not of unusual size, but were very even in size, and most of them of beautiful color. The very large ones were *Gloria Mundi*, some wonderful specimens of *Spys* from Lord Aberdeen's orchard, at Vernon, B.C., *Fallowaters* and *Ben Davis* from Ontario and Nova Scotia, and I should not fail to mention some glorious *Blenheim Oranges* also from both Ontario and Nova Scotia. But it is hard to discriminate—almost all our fruit was excellent, and the way it held out to the very last, was a continual wonder. A question

that was asked daily throughout the summer was "How is it that we cannot procure fruit now like what we see here?" or "Where can we buy fruit like this?" It was necessary to explain to the questioners that the present system of cold storage which produced such splendid results, was comparatively new, and that, in a year or two, undoubtedly equally good fruit would be procurable in the summer months.

A frequent complaint from those who did appreciate the value of fruit for daily use was that in buying a barrel of apples for home use a great deal of loss was incurred from the bruised apples, that soon began to decay. Many declared that a quarter or even a half was lost before the barrel could be used, and when shown the forty pound boxes of sound apples, that were sent for our exhibit, they exclaimed that that was just the thing required to perfect the fruit trade. My own conviction is that the barrel is doomed as a marketing package for apples, at least for choice fruit.

The question of a perfect package is a most important one. If growers and packers could only realise the immense loss that is annually incurred by loose apples in barrels—slack, they call them here—they would endeavor to devise some other form of package. I went on several occasions to some of the large establishments for the sale and disposal of fruit, and when based on what I saw there, I say that the loss is *enormous*, I do not, in the least, exaggerate.

Let me here tell you something of the several kinds of cases in which our exhibition fruit was packed, and then you will understand better what the ideal package should be.

There was—first—the case in which the apples were wrapped in a single thickness of tissue paper, and filled up without any other effort to save the fruit from injury, and one lot of the very finest fruit was sent on in that way. It is needless to say that it reached us in bad condition.

The next was a case in which the apples were wrapped in two thicknesses of heavy paper, without any other separation. This fruit arrived in better condition.

Another lot was packed like the last mentioned, with a straw board between the layers of fruit, this lot arrived in fair condition.

A fourth lot came wrapped in double Manilla paper in separate compartments in egg cases—and arrived in very good condition.

A fifth lot came in egg cases, in separate compartments and also arrived in very fair condition.

A sixth lot came in separate compartments—egg cases—wrapped in double paper, the inner paper waxed. These were in many cases perfect. As were also those in the seventh lot that were doubly wrapped like the sixth, but were packed in Excelsior. Several kinds in this last package were in almost perfect condition.

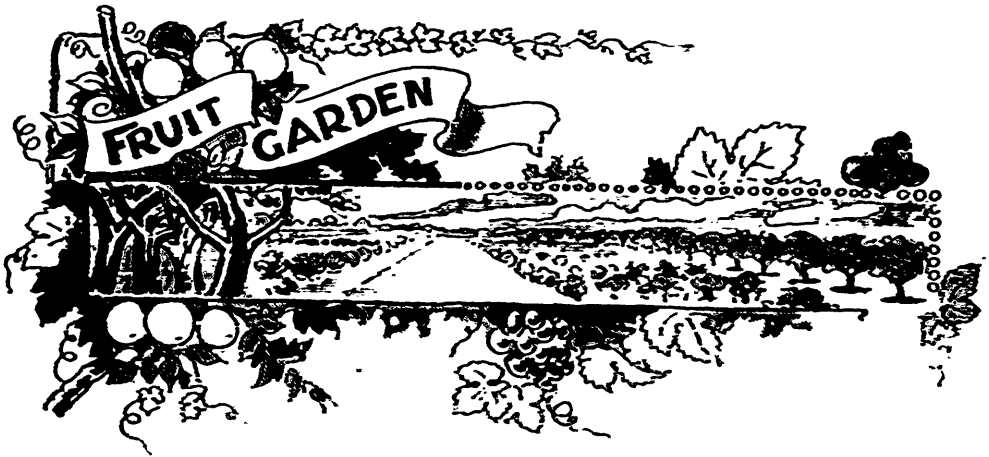
The sixth of these packages, i.e., the separate compartment case, with the apples wrapped in double paper, the outer wrapper, manilla plain, the inner one waxed, seems to approach the ideal package. If such a case could be supplied at a sufficiently low price, it would satisfy a general want and leave little further to be desired. I may say that the seventh seemed to be the favorite shape; it was about 22 inches long by 11 inches wide and deep. The other cases were generally 22 inches square by 10½ inches deep.

A package for plums and pears and peaches might be half the size of that for apples.

I was very much gratified to see the fine prices realised for handsome, well-packed apples just before All Hallowe'en. I saw some sell up to 32s. per barrel. Prices fell considerably immediately after Hallowe'en.

R. HAMILTON.

Glasgow, Nov. 21st, 1901.



FIRST LESSONS IN FRUIT GROWING—II.

THE STEM.

THE stem is that part of the plant which grows upward from the collar, bearing the leaves or branches.

In some plants it is so short as not to be apparent, as for example, the strawberry. The length and nature of the stem determines very largely the character of the plant. Woody plants having apparently no stem, but which have the branches springing from the collar, like the currant and lilac, are called bushes or shrubs. Plants having a stem which twines or climbs for support, like the grape, or hop, are called vines. A plant worthy of the name of tree has a well-defined stem which supports the branches. When it is bare of branches for some distance from the ground, it is commonly known as the trunk.

STRUCTURE OF A STEM.

The study of a cross-section of the trunk of any of our forest or fruit trees reveals an interesting structure. In the centre will be seen the pith, next to this the heart wood and sapwood, and on the outside the inner and outer bark. But let us look into these more closely.

THE PITH.—The pith is a soft, spongy substance found in the centre of both stem and branches. In soft wooded species, like the elder or grape, it is comparatively large, while in hard wooded species, such as the apple and pear, it is quite small. In young shoots, it is soft and succulent, holding moisture like a sponge, but in the older parts of the tree it becomes dry and shrivelled, or may rot away altogether. Its use apparently, then, is to act as a reservoir to hold moisture in the young and growing parts of the tree.

THE WOOD.—The wood, which makes up the greater part of the trunk, is of two kinds. That on the inside is **HEART WOOD**. This is the older wood, which has become firm and mature by age. It is generally of a darker color than the sapwood surrounding it. In the walnut, it becomes a very dark, rich color, and constitutes the most valuable part of the tree.

The line of demarkation between the heart wood and sapwood is often quite distinct, but the annual increase in the heart wood comes from the gradual maturing and drying of the inner layers of sapwood.

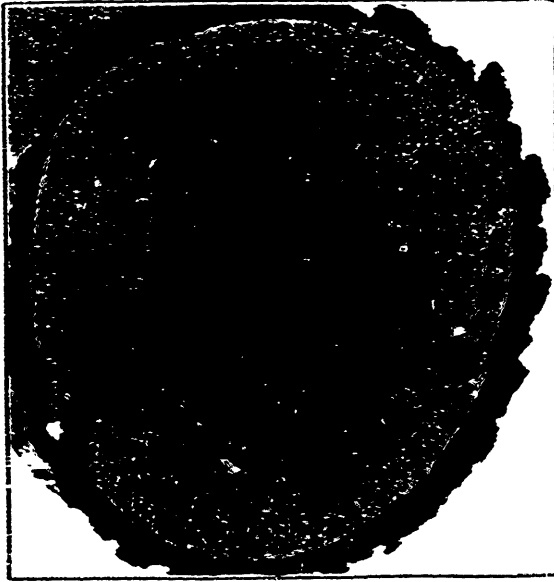


Fig. 2225. from Primer of Forestry, by Pinchot. Cross-section of Black Oak. The silver grain, the rings of annual growth, and the dark heart wood and lighter sapwood are visible, and the line between the rough, corky outer bark and the thinner and lighter colored inner bark may be seen.

The heart wood is not essential to the growth of the tree, except to give it stiffening and strength. Old trees may often be found making good annual growth when the heart wood is rotted away, leaving the trunk quite hollow.

The Sapwood, so called because it contains the moving sap of the tree, is the outer or new wood next to the bark. It is softer and more sappy than the heart wood, and is usually easily distinguished from it by its lighter color.

THE FELIX OR INNER BARK, is a thin layer of bark next to the sapwood. It is composed of a number of layers of soft, flexible, but very tough fibers. In some kinds of trees it is much more prominent than in others. In the husk wood it is quite plentiful, and at one time was used largely for strings in greenhouse and nursery practice, but the fiber of the *Raffia* palm is now used in place of it.

THE RIND OR OUTER BARK, as it appears upon a young stem or branch is made up of three thin layers. On the outside is a soft green layer, which gives the green color to fresh growing shoots. On the outside is the epidermis, or cuticle, a thin, smooth, transparent covering like tissue paper. Between these is the corky layer, which does not show at first, but gradually develops as the wood ripens, and hides the green layer beneath it. This corky layer is at first usually of some shade of brown, and gives to the young wood its peculiar color, by which an experienced grower may readily distinguish varieties by the bark alone. The bark of the Northern Spy apple tree, for example, is a dark, reddish brown, while that of the Yellow Transparent is of a brownish yellow.

On the surface of the bark of young stems may often be noticed small oval spots or patches, usually of a different color from the epidermis. These are the lenticles, formed by a group of corky cells. In the cherry they are very large and prominent, forming horizontally on the trunk; on the apple they are smaller and more numerous and form perpendicularly.

THE STRUCTURE OF THE BARK.

The bark retains these three distinct layers only for a short time. As the tree or branch becomes older, the corky layer gradually increases in thickness, and after a time bursts the epidermis, and be-



Fig. 2224. The deeply ridged bark of the beech after Craig.



Fig. 2215. The Pear Stem. The bark beginning to roughen after Craig.

gins to break up and fall away in scales. Each kind of tree sheds its bark in a manner

peculiar to itself. The shape of the scales is due primarily to the arrangement which the lenticles take in the young wood.

The age at which trees begin to shed their bark varies greatly with different species. In the grape vine, the inner bark is renewed each year, and that formed the year before is thrown out in long shreds. The sassafras has rough bark in two or three years, while the sweet chestnut often retains its smooth bark for over twenty years. The bark of the beech never becomes scaly, because it begins early in life to fall away in granules.

The apple and pear trees usually show a scaly bark at ten or twelve years of age. Trees that have been well cultivated and cared for retain their smooth bark much longer than those which have been neglected.

THE KIEFFER PEAR.

NURSERYMEN will be interested in the following statement by the Rural New Yorker, in response to a query from Reuten Harbor, Mich :

We have been watching the Kieffer pear closely in this market. A few years ago in New York, during its season, the push carts and fruit stands were well covered with it. Many were sold to eat out of the hand, and the result, nine times out of ten, was evidently a disappointment. Gradually the fruit has disappeared from these retail stands, until now it is rarely seen. This is good evidence that the buying public recognize it, and will not buy it for eating from the hand. We believe that its sale will be limited to the demand for canning purposes, and there are few better fruits for this purpose. In order to make sure we have asked some leading fruit

dealers for opinions as to the future trade in Kieffers."

Stearns & Brothers, Baltimore, Md., state that the Kieffer does not bring the prices that other varieties do, and think that too many of them are grown. S. H. & E. H. Frost, New York, say : "The foreign demand seems increasing somewhat. This will help to relieve the market, and it may be that large increased production might pay many years to come."

Brown & McMahon, Philadelphia, say : "Our opinion is that the Kieffer pear business is very much overdone, and instead of planting more trees they had better cut some down." Archdeacon & Co., New York : "It may be very good for canning or cooking ; in fact, in the South it is a pear which they prefer to all others, probably because they have no others."

PRUNING THE ORCHARD.

PRUNING is a means to an end. In the practice of pruning there should be in the mind of the operator, some definite purpose in view. The kind of pruning will depend on the purpose for which the tree is intended, whether for wood, for fruit, for shade, or for ornamental purposes.

NATURAL PRUNING.—Trees under natural conditions are constantly being pruned. Every fall nature strips the trees of their leaves. This is their regular annual prun-

ing knife, comes along and removes the dead branch. In this way trees are constantly ridding themselves of useless branches, and the pruning so effected is undoubtedly a benefit to the branches that remain, and to the general growth and improvement of the tree.

ARTIFICIAL PRUNING. The trees of the orchard by virtue of selection, hybridization and cultivation are in a highly specialized condition, and to be maintained so must receive special treatment. The fruit tree is in

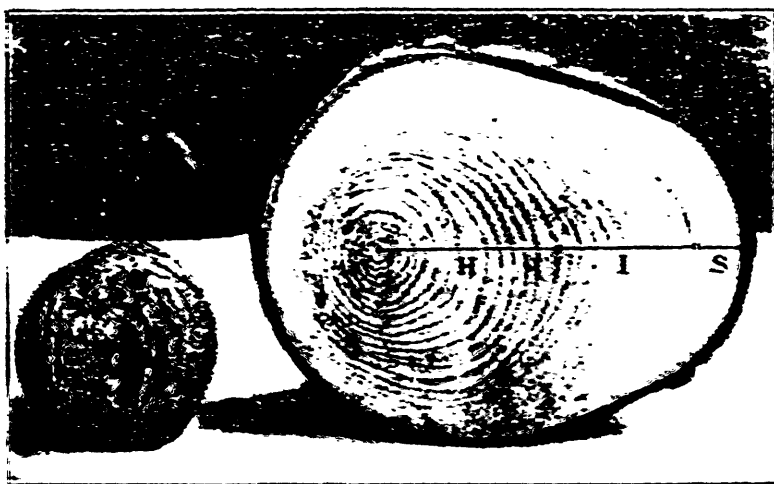


FIG. 2216.

FIG. 2217.

FIG. 2216. A pointed wood almost beveled over.
 FIG. 2217. Cross section of trunk of apple tree. S, Sapwood, I, Portion changing from Sapwood to Heartwood, H, Heartwood. At the outer end of the line is the thin cambium layer under the bark.

ing. Besides this, there is a continual pruning of buds and branches. If every bud on a tree were allowed to develop, the tree would become a veritable brush-pile. The buds most favorably situated as regards light, get most nourishment, and the less favored become starved and drop off. The lower limbs of trees and those within the crown become weakened and die from lack of sunlight; then the wind, nature's prun-

ing sense a machine for manufacturing fruit, and intelligent pruning is one of the means by which it can be made to manufacture the most fruit of the best quality in the shortest time and to keep up the output for the longest possible period. A correct understanding, therefore, of this machine and all its working parts, is necessary to its most successful manipulation.

STRUCTURE OF THE TREE. If the trunk of

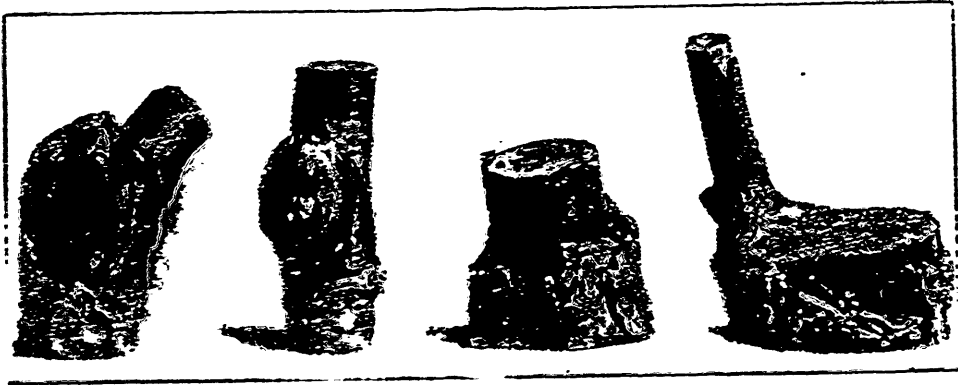


FIG. 2218.

FIG. 2219.

FIG. 2220.

FIG. 2221.

FIG. 2218.—The healing of a torn wound, also cut too long.

FIG. 2219.—A well-healed wound, the result of a properly made cut.

FIG. 2220.—Result of leaving a stub.

FIG. 2221.—Result of removing scams from grafted limb before the cut has been entirely healed over.

a tree, or a large-sized branch or root be cut through, it would show the bark, the light colored sap-wood and the darker central portion, or heart wood. Just between the bark and the sap-wood, if we could see it, is a layer of very delicate tissue known as the cambium.

CAMBium. The cambium is the only tissue that retains the power of active growth. It can best be seen by removing the bark on some actively growing tree, and so sensitive is it that exposure to air will kill it in a few minutes. It appears as a soft slimy or doughy substance that can be scraped off with the thumb-nail. The cambium is a very delicate substance, easily affected by frost or wet, and may be easily crushed or torn. It is the giving away of the cambium that causes the bark to strip off from the wood. During the growing season, the cambium gives rise to a layer of wood on the inside and a layer of bark on the outside, and a thick layer of cambium is left between the new wood and bark to carry on the growth of the tree next year.

THE BARK. In bark, nature has formed a perfect covering for the delicate cambium beneath. Being corky on its outer surface, the bark of a waterproof covering to keep

in the sap and at the same time exclude external moisture from decaying the cambium. Bark being somewhat soft and spongy in its construction, contains considerable air, which, acting as a non-conductor of heat, serves the purpose as a dead air space in a building, and keeps the cambium from being frozen or dried out. From this it appears how careful nature is of the delicate parts of the tree, and in all our operations of pruning we should exercise similar care. The orchard should always receive the best thought and practice of its owner, and should never be left to the tender mercies of the hired man or the itinerant pruner.

THE WOOD. The light-colored portion of the stem is the sap-wood. It is through this that the sap containing its dissolved mineral elements, finds its way to the leaves. In the leaf the watery portion of the sap is evaporated, and the remainder, under the action of light, is combined with the carbon-dioxide of the air, and returns downward through the cambium to be used up in growth. The darker portion of the stem is the heart-wood, which is dead tissue, whose only use is to give support to the tree.

THE ROOT. The root presents the same appearance when cut across as the stem,

and may for present purposes be considered as simply the branched extension of the stem underground. The cambium of the stem is continuous with that of the root, and is covered and protected with bark, ex-

cept at the growing points. The covering of bark, being as was said before, impervious to moisture, requires that all water absorbed by the plant under normal conditions, be taken in at the root tips. In order to facilitate the easy and speedy passage of moisture into the plant, we have the small hair-like bodies known as root-hairs.

ROOT-HAIRS. Root-hairs may best be seen on some seedling plants such as beans,



FIG. 222. Oak tree from which some of the lower limbs have been properly cut and most of the upper ones improperly cut. (By permission from U. S. Year Book of Agriculture, 1907.)



FIG. 223. Decay caused by the cutting of too large a limb. (By permission from U. S. Year Book of Agriculture, 1907.)

yet every plant has them in thousands. Like the cambium, the root hairs are so delicate that drying for a few minutes will kill them. It is the destruction of the root-hairs that makes successful transplanting so difficult. If trees could be taken up and planted again without the loss of root-hairs they would never know that they had been moved. This, however, is practically impossible except with the smallest seedling trees, yet it shows that too great care cannot be exercised in protecting the roots of trees during transplanting. It is owing to the heavy loss of fibrous roots with their root-hairs that make it so difficult, nay almost impossible, to transplant large trees. Most of the smaller roots with their absorbing root-hairs are cut away, and the large roots on account of their thin bark have little power of producing the hairs. The leaves on coming out evaporate the sap from the tree, and since there are but few root-hairs to take up moisture from the soil, the tree dries up and dies.

PRUNING FOR TRANSPLANTING.—It is a good practice in the transplanting of large trees, or indeed of any tree, to cut back the large roots the year previous to taking up, so as to cause the tree to send out nearer the trunk, a strong growth of fine roots, which will be removed when the tree is dug up. Since more or less roots are cut or broken off in transplanting, the top should be cut back proportionately with root. All broken or decayed roots should be cut back to fresh healthy tissue, otherwise they become a source of disease. Roots pruned smoothly without injury to remaining tissue will callus over quickly and send out a good growth from the callus. For this reason the rooting of layers can be hastened by cutting away the bark on one side and exposing the cambium to the soil so that a callus is formed.

FORMING THE YOUNG TREE.—As soon as the young tree has become established after

transplanting, the formation of its top will commence. When the head of the tree is once formed the trunk does not lengthen, so that the lowest limbs must be started at the height we wish them to be in the mature tree. On account of ease in picking the fruit a low spreading head used to be considered most convenient. Of late years, however, the greater frequency of cultivation and driving back and forward in spraying, make the high formed head most convenient. Upright growing varieties such as the Spy may be started lower than trees of crooked or drooping growth such as Greening or Roxbury Russet.

NUMBER OF MAIN BRANCHES.—Trees should not be started with too many main branches, as afterwards they thicken up and crowd each other and make it necessary to cut out very large limbs. As nearly all of the food of the tree is made by the leaves, the removal of a large limb with a great deal of foliage is a blow struck at the vigor and longevity of the tree. Trees so pruned suffer a process of starvation till the normal foliage is again restored, while the large wounds are a source of disease to the tree.

IDEAL PRUNING.—The ideal pruning consists in removing not branches but buds, not in checking growth but in directing it. It is easier and also less shock to the tree to pinch off buds here and there, than a few years later to saw off large misplaced limbs. Trees should be so formed and shaped when young that in later years trimming should be only slight, and it would never be necessary to cut out large limbs. Three main limbs started at different points so as to evenly distribute their pressure on the trunk, will make a well formed head. Opposite crotches are to be avoided, particularly in peach and plum trees, for when the limbs are heavily loaded the trunk is apt to split down by the wind and the tree is practically ruined.

PRUNING FOR FRUIT.—Trees have two

natural methods of reproducing themselves. The first is by means of shoots or buds; this is known as the vegetative reproduction or reproduction by growth. Every bud on a tree if placed under proper conditions, as is done in the practice of grafting or budding, is capable of producing a tree like the one from which it was taken. The other method of reproduction is by the seed of the fruit. If the tree is growing a great deal of wood it produces little fruit and *vice versa*. The skill of the pruner is required to maintain the proper balance between the reproduction by growth and by fruit. If one kind of reproduction is getting too much the start of the other, it is only necessary to check the predominant one. If trees are pruned in the growing period, growth will be checked and fruiting stimulated. Summer pruning should be mostly confined to heading back too fast growing branches. If, on the other hand the centre of the tree is thinned out, the fruit-bearing branches are removed, and the energies of the tree are again forced into wood growth. The growth of the tree might also be checked by stopping cultivation and sowing the orchard to some clover crop, or the plow might be made to run a little deeper so as to cut off the surface feeding roots, and root prune the tree.

PRUNING FOR WOOD GROWTH.—Pruning for vegetative wood growth is that which has been outlined for the young growing tree. Cut out all dead, broken and deformed limbs and those which cross or rub one another. Care should be taken to keep the tree free from suckers, so that there is a free circulation of air through the tree, and the sunlight is let in sufficiently to give the fruit a good color.

HEALING OF WOUNDS.—Limbs to be removed should be cut off as smoothly as possible with a sharp saw, and as close to the main stem as possible. When a limb enters a shoulder at the trunk, the cut should be as close to the shoulder as possible, yet

never through it. There should never be any stump left because the cambium dies back, and when the stump decays there is a hole left which is apt to cause the trunk of the tree to rot and become hollow. Pruning shears are bad tools, as they pinch the bark and injure the delicate cambium beneath, and a badly healing wound is the result. Torn wounds are a source of danger

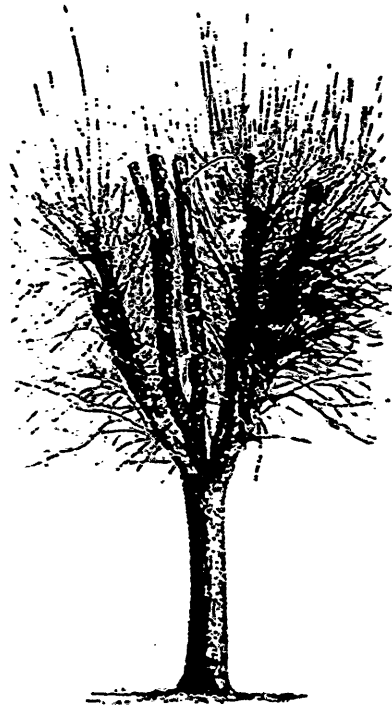


FIG. 2221.—Soft maple, cut back, giving the undesirable effect of a brushpile on a hop pole in winter, and a haystack on a gate post in summer. (By permission from U. S. Year Book of Agriculture, 1895.)

to a tree. If large limbs are to be removed, which should never happen in good pruning, there is a danger of the weight of the limb tearing the bark. To avoid this cut from below first and meet this cut with one from above, or if this cannot be done cut off the limb a foot from the tree and remove the stub. Large wounds should be smeared

over with tar or thick paint to keep out moisture.

TIME TO PRUNE.—It is very important that the healing process should start soon after the wound is made, otherwise the cambium will be killed back quite a distance from the exposed surface and healing will be retarded.

For this reason winter pruning should be avoided, particularly in frosty weather. In the early fall or late spring, the cambium is active, and wounds made at this time start to heal at once, and there is little or no dying back of the cambium.

Southend, Ont.

H. N. HULL.

NO. 1 AND NO. 2 APPLES.

IN the discussion of the Fruit Marks Act at Cobourg, it was plainly pointed out that more definite grades were needed. As it now stands a shipper may use any designation he chooses to mean No. 1, or No. 2, and the inspectors are often at a loss to know just what is meant by such marks as A. B. Straight Grade, X, XX, Selected, Choice, etc.

Now if some designation were adopted for general use, and persons desiring to use other marks than that legalised were obliged to have such marks defined and registered before using them, it would much simplify the work of the inspectors.

Another point still undecided is whether the grade No. 1 or No. 2 should include certain definite sizes. If this were possible the grades would be much more satisfactory to the buyer, who would at once know whether his No. 1 apples were 2 inches or 2½ inch apples, a most important point; they would also be much more service to the grower, who would find his apples would take on more value in the markets because of the sizes indicated by the grade.

Surely no apple except Fameuse, Pomme Grise, Jonathan, Lady or Wine Sap, should be classed No. 1 unless it were 2½ inches or upwards in diameter; or No. 2 unless it were at least 2¼ inches in diameter.

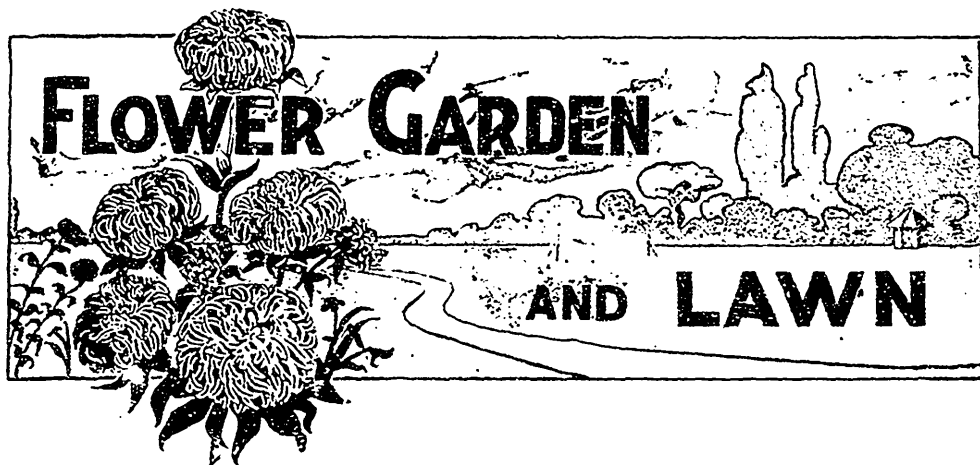
In these matters it is most important to be in line with other exporters from this continent, and it will therefore be interesting to quote from the proceedings of the North American Apple Shippers' Association the following resolution on the grading of apples:

Resolved, that the standard for size for No. 1 Apples shall not be less than two and one-half inches in diameter, and shall include such varieties as Ben Davis, Willow Twig, Baldwin, Greening and other varieties kindred in size. That the standard for such varieties as Romanite, Russett, Wine Sap, Jonathan, Missouri Pippin and other varieties kindred in size shall not be less than two and one-quarter inches. And further that No. 1 Apples shall be at time of packing practically free from the action of worms, defacement of surface or breaking of skin; shall be hand picked from the tree, of bright and normal color and shapely form.

No. 2 Apples shall be hand picked from the tree; and shall not be smaller than two and one-quarter inches in diameter. The skin must not be broken or the apple bruised. This grade must be faced and packed with as much care as No. 1 fruit.

THE GEORGIAN BAY FRUIT GROWERS' ASSOCIATION comprises a large number of the best fruit growers and farmers of the district. They were represented at our Cobourg meeting by Mr. Saunders, Mr. Cox and others, who were most anxious

that the next meeting of our Association should be at Collingwood, but in view of the invitation from Walkerton, which has been repeated three successive years, they waived their claim for the present.



FERNS FOR THE HOUSE.

THE delicate and tender nature of many of the prettiest and most graceful growing varieties of this beautiful and interesting class of plants, prevents their being used very extensively for house decorative purposes. The dry, arid atmosphere of dwelling houses induced by artificial heating, more especially in winter, being particularly destructive to the delicate texture and formation of the fairy-like fronds of many varieties of ferns.

Ferns thrive best in a moist, humid atmosphere, and although these conditions cannot be given them to the same extent in a dwelling house as in a conservatory or greenhouse, or even where ferns are found growing amidst their natural surroundings, still much pleasure and satisfaction can be obtained by selecting suitable varieties, and by modifying as much as possible the unnatural conditions that surround all plant life in a dwelling house. In fact many varieties can be kept fresh and bright looking, grown as house or window plants, much longer than many varieties of foliage plants commonly used for house decorative purposes.

It would be a waste of time and energy to endeavor to grow the delicate *Adiantum* and

similar tender species of ferns under ordinary conditions in a dwelling, or even in a window, the finely formed lobes of their tender fronds being particularly susceptible to the dry atmosphere, if even they succeed in making any progress at all in the way of growth.

Probably amongst the almost innumerable species and varieties of ferns known to floriculturists, there are none better adapted for house or window culture than the many types of the *Pteris* fern, sometimes called feather ferns from the close resemblance many of these ferns have to the formation of a large feather.

The long whip-like, half drooping fronds of *Pteris serrulata*, and the crested varieties of this *Pteris*, such as *Pteris cristata* and *Pteris winsetti*, with the tips of their hard glossy green fronds more or less covered with the moss-like formation that give them the common name of crested ferns, are perhaps amongst the easiest grown and most enduring types of the *Pteris*, especially when grown as house or window plants.

Pteris cretica or Cretan *Pteris*, is another variety that succeeds well in a dwelling house and is quite as easily grown as any variety of *Pteris*, in fact many prefer it to

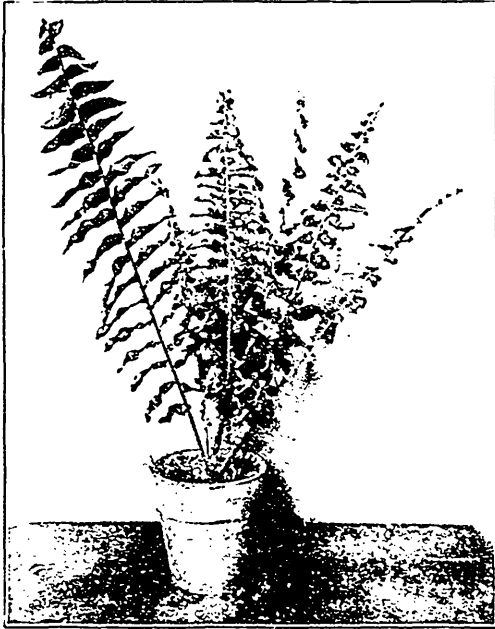


FIG. 2225. NEPHROLEPIS BOSTONIENSIS.

Pteris serrulata or the crested varieties, as being less liable to attacks of fern thrip and red spider, the two latter being the greatest insect foes of fern life.

Another variety, *Pteris hastata* or Spear fern, specially commends itself to the indoor fern grower not only from the fact that it is quite as easy of culture and as capable of resisting insect attacks as the other varieties mentioned, but the pleasing variation in its habit of growth makes it particularly acceptable either as a pot plant, or in the make-up of a fern pan or fern dish.

The variegated type of *Pteris cretica*, viz.: *P. cretica alba lineata*, that takes its specific name (*alba lineata*) from the broad line of white that runs through the centre of each segment of its otherwise green fronds, is another variety that shows up splendidly amongst the plainer types of *Pteris*. In fact, in a well grown specimen, the white markings referred to often predominate sufficiently to make a plant of this variety

quite a conspicuous object amongst a collection of ferns. The fronds of this fern are quite hard when matured, making it quite an easy task to sponge them occasionally to assist their growth, as well as to prevent attacks of insect pests.

All of the varieties of *Pteris* mentioned are of a comparatively dwarf habit, the tough leathery texture, as well as the glossy surface of their fronds making them specially suited for house or window culture.

Pteris longifolia succeeds well in a house, and retains its freshness for a long time, its stronger growing habit however making it more suitable for large collections of ferns, or for use in large jardinières than for ordinary house or window culture.

The beautiful *Pteris argyrea* (Silver Pteris) is unfortunately of a very delicate nature and does not as a rule succeed well in a dwelling house or window. As a greenhouse or conservatory fern it cannot be ex-



FIG. 2226. ASPIDIUM CERNUUM.



FIG. 227. *PILIS ARGENTEA*

celled in beauty, either in form or color, the broad rich silver markings of its large graceful fronds make it an object of attraction to all fern-lovers. It is seldom, however, that a perfectly grown specimen of this fern is seen, as it requires exceptionally good culture to produce a good specimen.

The *Nephrolepis* (Sword fern) gives us several types very useful as house or window ferns. The popular Boston fern (*Nephrolepis Bostoniensis*) is perhaps the most graceful, as well as one of the easiest of culture amongst ferns, its long arching fronds making it particularly adapted for furnishing large jardinières, mantels, etc. *Nephrolepis exaltata* or the true Sword fern is also a useful house or window plant, but is not as robust as the Boston fern. The dwarfier growing types of this fern, *N. cordata compacta*, and *N. phillypensis* are useful ferns, but not as enduring or lasting in a house as *N. Bostoniensis*.

Another pretty and useful fern for house

culture and one that until recently has been little seen, either as a house or window plant is the dwarf, dense growing *Aspidium coriaceum* or leather fern, deservedly taking the latter name from the extremely tough texture of its fronds as compared with many ferns. This characteristic enables this fern to resist the bad effects that a dry atmosphere produces on ferns for a much longer period than many others. Its dense, dwarf habit is also another feature that recommends it either for the window or greenhouse, or for house decoration. I have known plants of this fern retain their freshness for a longer period than many house plants such as palms and cordylines, without any extra care being bestowed on them.

The graceful growing *Asplenium bulbiferum* cannot be omitted from the list of ferns suitable for a window or for house decoration, but it succumbs sooner to drought and a dry atmosphere than some of the others I have mentioned. The long spear-like, hard fronds of *Asplenium marinum* (another distinct type of *Asplenium*) makes a most enduring and pretty fern for the house or window and is very easy to grow.

Amongst our native ferns that are espec-



FIG. 228. *PILIS CRISTATA*

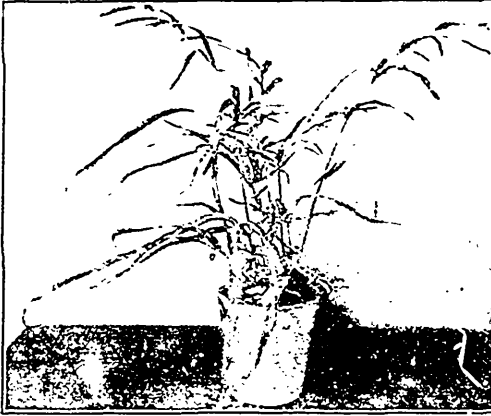


FIG. 2220. PTERIS SEKKULAI.

ially suitable for indoor culture is the dwarf growing Polypody. This fern is almost evergreen in character and differs but slightly either in form or habit from the English Polypody (*Polypodium vulgare*) both of which are most enduring ferns as house or window plants. I have used specimens of both the Canadian and English Polypody for house decorative plants for several years past, the plants having in almost every case retained their fresh bright appearance for two or three months without any more care or attention than is usually bestowed on the best house plants, viz.: *Aspidistras*, *Cordylines*, palms, etc., a fact that certainly placed them high in my estimation as house plants. It is easy enough to secure a plentiful supply of the native Polypody, as it grows freely in almost every part of Canada, more especially amongst rocks and stones. Used solely as an occupant of the fern pan or as a pot plant, or mixed in with other kinds of ferns, these varieties of the Polypody are a valuable addition to the list of ferns suitable for house or window culture.

Another stronger and coarser growing fern, useful for house decoration or for the greenhouse, is the *Aspidum falcatum*, or as it is sometimes catalogued *Cyrtomium falcatum*, another iron-clad fern capable of

resisting for a longer period than most ferns the atmospheric condition unsuitable to plants, usually found in a dwelling house.

Many other varieties of ferns could be mentioned as being suitable for house or window culture, but those given will be found sufficient to make a variety to supply quite a large window or for house decorative purposes.

A word or two perhaps on the culture and care of ferns may perhaps be acceptable.

There are very few ferns but delight most of all in soil of a light, porous nature. A compost should be made of one-half well rotted, clean leaf mould, the other half to be made up in equal parts of sharp, fine sand and loamy potting soil, the latter being enriched with a small quantity of dry pulverized cow manure. Mix this compost well together before using.

From the fact that ferns like plenty of moisture at the roots and around about them, the mistake is often made of not giving the pots they are to grow in a plentiful supply of drainage. This latter feature is very necessary when potting ferns or filling fern pans, as ferns will not live, to say nothing of thriving, in a sodden soil soured by stagnant water, especially when placed in a window or dwelling house. Use fully an

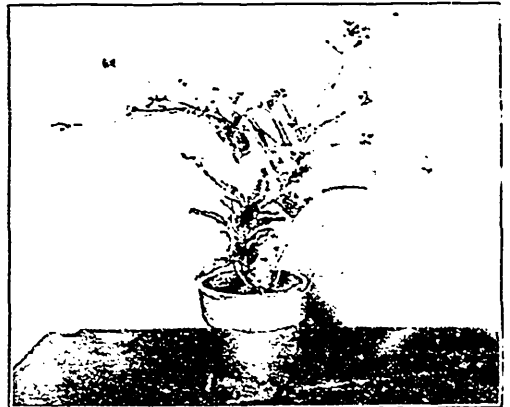


FIG. 2230. PTERIS WINSTEDII.

inch of broken pots in all except perhaps very small pots, when the quantity of drainage can be reduced in proportion to the size of the pot.

Water ferns thoroughly at the roots when they require water, never allowing the soil to become anything approaching a dust dry condition, in fact with good drainage the soil should always be kept moist but not soddened.

When potting or re-potting ferns do not be too liberal as to the size of the pot; using a pot too large in proportion to the quantity of roots is detrimental to almost all kinds of plants, especially to house or window plants where the surroundings are not of a nature to induce quick root action so as to necessitate an abundance of room for the roots.

The fronds of most of the ferns I have mentioned can be easily washed with a small piece of soft sponge or some similar material, moistened with clean water. Syringing the growth with water from a fine atomizer spray will also be beneficial, or the growth of the plants may be dipped in a pail of water once or twice a week. This can be done by turning the plant upside down and allowing the fronds only to remain under water for a minute or so. By adopting these means before insects attack the growth, the destructive visits of the fern thrip and red spider can often be prevented and the plants kept fresh and healthy looking.

The insect pests that are most likely to prove troublesome are the fern thrip and red spider; the green fly often makes its appearance, especially on the young fronds. Shaking or brushing off the green fly is probably the safest way to dispose of green fly; if tobacco water is used it must be made very weak. The presence of thrip and red spider will be first seen by the whitish appearance the fronds present, especially near the centre rib of each lobe or frond. Weak tobacco water applied to the growth, especially on the underneath side, is the best remedy for thrip. The fern thrip is a very minute insect and cannot be discerned with the naked eye; a magnifying glass will however reveal its presence, when it will be seen burrowed snugly between the upper and lower layers of film that constitute the frond. Nothing is better for destroying thrip on ferns than frequent applications of tobacco water. Frequent syringing and sprinkling the growth of ferns with clean water is one of the best preventives of the attacks of the almost invisible but destructive red spider, one of the worst pests of indoor plant life.

Ferns have during recent years become so popular and necessary as accessories to floral decorations, that a word or two on their culture and care may perhaps be interesting to readers of the Journal.

W. HUNT.

Hamilton.

JAPANESE FERN BALLS. A novelty of recent introduction by our florists is the Japanese Fern Ball, an apparently dried up and lifeless ball of roots, which when soaked in water for fifteen minutes, every day for a few days, then hung in any desired position, growth soon starts, and it becomes a mass of beautiful ferns. All that is necessary afterwards is sprinkle occasionally. Or the

ball may be cut in two, placing flat side down, thus getting two dishes of ferns. They may be allowed to dry up any time and started again by watering as before. If they prove to be anything like the introducers' description, they will be a most desirable and attractive novelty both for the window garden and table decoration.

THE NARCISSUS.

IN this genus we have a long list of established favorites, remarkable alike for the elegance, fragrance, and earliness of their flowers. In one respect the species are all alike; they delight in rich soil made porous with plenty of sand and well-rotted manure. All of them are also quite hardy, and from the early period at which their flowers are produced, they are of the utmost consequence to the flower gardener.

Several of the species are bound to bear forcing well, and for this purpose have become a staple article in the Dutch florists' trade, and several varieties have been originated by them, suited by the selection of their parentage, to bear this trying course of treatment. The following are commonly grown for forcing: Bazelman Major, Soleil d' Or, Grande Primo, and Grande Monarque. These, with the double Roman and others, should be potted in September in a mixture of equal parts of fresh loam, rotted manure, and leaf mould, with half of either quantity of sand. In potting, the neck of the bulb should be kept above the surface of the soil, that the roots may have that much more space in the pot; and when the rooting is completed they should be placed together, either in a cold frame or in some convenient place, so that they may be covered a foot thick with fresh leaves. These exclude light and prevent frost from getting to the roots, both an essential to a speedy excitement of root growth.

In about five or six weeks it will be found that many of them have filled the pots with roots, and these may be taken to a temperature of 55 degrees to bring on their flowers; and if repotted when the first two leaves have grown a few inches, the flowers will be considerably larger; but before any plant is taken from the bed of leaves, be sure that it

has made a good stock of healthy roots, or it will be spoiled in the forcing process. Narcissi do not require a powerful heat to bring out their flowers (55 degrees will do it better than any other), and the supply of water should be sufficient but by no means excessive.

The Paper narcissus (*N. papyraceus*) is now, perhaps, more extensively forced than either of the above mentioned. It is grown in immense quantities by the florists of New York and other large cities, and next to the Roman hyacinth is the bulb most extensively grown for this purpose. When grown on a large scale it is planted in boxes of soil about five inches deep, at a distance of three to four inches apart, and treated as recommended above. This, like nearly all other bulbs, is of no value after being forced, and the roots may be thrown away.

When grown in the open borders the bulbs should be planted in October, in newly dug and well manured ground, at a depth of three inches, reckoning from the top of the bulb to the surface of the soil. This will not be too much for any, except the jonquils, which, from having smaller bulbs, may be placed an inch nearer the top. At this depth, and with plenty of manure about them water will not be required, but they will grow strong and flower finely. When planted in beds, and it becomes necessary to remove them to make room for other plants, it should be done as soon as their beauty is past. As the bulbs are by no means mature at this time, they should be "laid in" in some slightly shaded place until the foliage is quite withered, when they may be taken up, dried, and stored away until wanted for the next planting season.

Most of the species are from the south of Europe, and are propagated by offsets. They were among the earliest cultivated garden flowers. *Garden and Farm Topics.*



The Canadian Horticulturist

COPY for journal should reach the editor as early in the month as possible, never later than the 12th.
SUBSCRIPTION PRICE, \$1.00 per year, entitling the subscriber to membership of the Fruit Growers' Association of Ontario and all its privileges, including a copy of its valuable Annual Report, and a share in its annual distribution of plants and trees.

REMITTANCES by Registered Letter or Post-Office Order addressed The Secretary of the Fruit Growers' Association, Parliament Buildings, Toronto, are at our risk. Receipts will be acknowledged upon the Address Label.

ADVERTISING RATES quoted on application. Circulation, 5,529 copies per month. Copy received up to 25th.

LOCAL NEWS.—Correspondents will greatly oblige by sending to the Editor early intimation of local events or doings of Horticultural Societies likely to be of interest to our readers, or of any matters where it is desirable to bring under the notice of Horticulturists.

ILLUSTRATIONS.—The Editor will thankfully receive and select photographs or drawings, suitable for reproduction in these pages of gardens, or of remarkable plants, flowers, trees, etc., but he cannot be responsible for loss or injury.

NEWSPAPERS.—Correct postage reading newspapers should be careful to mark the postage by they wish the Editor to see.

DISCONTINUANCES.—Remember that the publisher must be notified by letter or post-card when a subscriber wishes his paper stopped. All arrears must be paid. Retaining your paper will not enable us to discontinue it, as we cannot send your name on our books unless your Post-Office address is given. Societies should send in their revised lists in January, if possible, otherwise we take it for granted that all will continue members.

ADDRESSES.—Money orders, subscriptions and business letters of every kind to the Secretary of the Ontario Fruit Growers' Association, Department of Agriculture, Toronto.

COPY intended for publication in The Canadian Horticulturist, should be addressed L. Woodruff, Grange, Ontario.

POST OFFICE ORDERS, cheques, postal notes, etc., should be made payable to G. C. Crofton, Toronto.

NOTES AND COMMENTS.

THE NEXT MEETING of our Association will be held at Walkerton, near the home of Mr. Sherrington, our fruit experimenter for the Lake Huron District.

TOPWORKING THE NORTHERN SPY.—Mr. Geo. T. Powell, of New York, recommends the Spy as stock on which to graft or bud other varieties, because its wood is so hard and fine grained. He has been grafting on it scions of King and Jonathan with excellent results.

THE JOURNAL. The editorship of this Journal remains in the hands of Mr. L. Woodruff who hopes to be able occasionally to attend meetings of Horticultural Societies and Farmers' Institutes, and to visit the various fruit growing sections of the province, and thus gather material to very much increase the value of this publication.

A REPORT OF THE KIEFFER SHIPMENT.

Mr. Wm. Wilson, the inventor of the new Canadian fruit package accompanied a car lot of them to Glasgow packed with Kieffer pears. He reports that the officials of the Donaldson Line gave him every opportunity to test the temperature of the cold storage chamber as often as he chose during the passage over, and he found it quite satisfactory, standing between 37° and 41° during the whole voyage.

He was kindly received by the consignees, who sold his cases of Kieffers at 6s., 7s. and 8s. for the 112 pear grade. This case weighs thirty-two to thirty-five pounds, while the half case we have been using weighs about twenty-seven pounds. These sales seem to indicate a decided advantage for the new case. The outside measurement is 21½" x 10¼" x 12½" inches, and the pears be so arranged that any sizes will fit the

trays, and the outside packages will always be uniform. The fruit arrived in perfect condition. The consignees advise holding over pears until about the middle of November, because the best prices are obtainable in December, and cold storage charges here are less than in England. Bartletts, Howells and Anjous should all carry well and bring good prices, especially the Howell, which received many words of praise, as one of the cleanest and best of export pears for us in Ontario.

AWAY WITH BILL BOARDS. What a disgrace to our fair country that those huge bill boards, advertising quack medicines, tobacco and other goods, set in the midst of otherwise beautiful views of rural scenery. Surely it is time that our people who have good taste should arise and seek legislation that will prevent such defacement of our beautiful country.

The American Park and Out-door Association, of which Mr. W. H. Manning, landscape architect, Boston, Mass., is secretary, is making determined efforts to create public sentiment adverse to such abuse in public advertising.

A Bill has been introduced to the Legislature of Illinois of which the following are the provisions:—

Section 1. That no person shall paste, stick up, paint, brand or stamp, or in any manner whatsoever put upon or attach to any building, fence, gate, outbuilding or grounds of any of the charitable, educational or penal institutions of the State of Illinois, or upon any property belonging to the State of Illinois, or in any County or Township therein, any written, printed, painted, or other advertisement, bill, notice, sign or poster.

Section 2. That no person shall paste, stick up, paint, brand, stamp, or in any manner whatsoever put upon and attach to any building, fence, bridge, gate, outbuilding or grounds of a, other, without first obtaining the written consent of the owner and also of the person in possession or occupancy thereof, any written, printed, painted, or other advertisement, bill, notice, sign, card or poster.

Section 3. Any person violating any of the provisions of this Act shall be guilty of a misdemeanor and, upon conviction thereof, shall be fined in a sum not less than Three (\$3) nor more than Twenty

(20) Dollars, and such written, printed, painted, or other advertisement, bill, notice, sign, card or poster is hereby declared to be a public nuisance, and may be removed or obliterated and abated by any person.

Section 4. The provisions of this Act shall not prohibit any person from posting or putting up any notice required by law or order of any Court to be posted or put up, nor the posting or putting up of any notice particularly concerning or pertaining to the grounds or premises upon which the same is so posted or put up.



FIG. 275. REV. A. E. BEAK.

REV. A. E. BEAK, who came all the way from Prince Edward Island to meet with us at Cobourg, is a graduate of St. Dunstan's College and Laval University, Quebec, and is now Rector of Sacred Heart Parish, Alberton. He sets an example to the clergy in general, by the interest he takes in fruits and flowers, recognizing them as God's gifts, and worthy of our careful attention.



FIG. 2237. MR. THOMAS MERRIAM.

DEATH OF THOS. MERRIAM. On the 23rd of November last this eminent botanist and nurseryman passed away. His devotion to the interests of the parks, public schools

and other civic interests of his town, and unselfish labors for the advancement of botanical studies, have already combined to make his name more enduring than brass or marble.

PRESIDENT J. W. BIGELOW of Nova Scotia and his excellent wife were at Buffalo, in the interests of a Nova Scotia exhibit of commercial apples. Of course the famous Gravenstein was most prominent. He pointed out to us several exhibits contributed by enterprising orchardists, as for example Mr. A. C. Starr, who has twenty six acres in apples, which yielded this season 2,500 barrels, and netted \$3000, and who showed 54 varieties of apples and 20 of pears; Mr. Herbert Johnson of Wolfville; Mrs. Olivia Johnson of Wolfville, who is a graduate of the School of Horticulture, and who showed 30 varieties of apples; Mr. Eliot Smith, who showed the finest King and Gravenstein and who prides himself upon growing the finest samples of these varieties in the world; the Provincial Farm at Truro, which showed a fine exhibit of potatoes and some monstrous sugar beets, and S. Blair of Napanee Experimental Farm, who showed 60 bottles of fruit in good condition.

QUESTION DRAWER.

Clipping Evergreens.

1265. **SIR**—How often and when should evergreens be clipped.
London.

J. C.

Generally speaking, we would not advise clipping evergreens, unless to aid in bringing about a symmetrical habit of growth. The fantastic shapes of the topiary garden are curious, but nature's graceful branches are far more beautiful than the form of beer barrels, or pyramids.

Generally speaking, this work may be done at any season, and as often as the owner

pleases, without much injury to the vigor of the tree; but we usually prune evergreens in springtime just before the summer growth begins.

Club Root.

1266. **SIR**.—Kindly give cause of Club Root in cabbage and what will prevent or stop it?
Port Colborne, Ont. E. MUMFORD.

Club Root is a disease peculiar to cabbage, cauliflower, turnip, and other plants of the same family. One of these, the shepherd's purse, one of our most common weeds, is

also quite subject to it. This disease is due to one of the low forms of fungus, known as a slime mould, which occurs as a slimy mass and gains access to the young roots causing the well-known malformations.

After the large club roots are formed, innumerable spores are produced and are set free by the rotting of the roots and are left in the soil, where they apparently remain indefinitely continuing the disease from year to year.

The only way to check the disease is by preventive methods, as remedies are unavailable after a crop is once infected. The best way is to follow a crop rotation in which none of the cruciferous plants, such as cabbage, cauliflower, turnips, or rape are grown on the ground for several years. If this is combined with clean cultivation, and no weeds are allowed to offer a host for the continuation of the fungus good results will follow.

It has been said that lime, used at the rate of 75 bushels to the acre, has been found effective in destroying the spores in the soil, but no reliable data upon this point are yet obtainable.

O. A. C., Guelph. H. I. HURT.

Blight of Geranium.

1267. Sir,—I send you in a box two leaves of Angels Trumpet and some Ivy-Leaved Geraniums which are affected with a blight which is new to me. Am usually very successful with plants, and can manage the living creatures but don't know what to do with this. Sent for Ghishurst Compound and sponged with it once, but don't think it will do for from the larger of my two plants it has cut off every leaf and bud. This house is stone and we have sixty-five plants, and I am trying to do a little business in the plant line, there being no greenhouse here.

Would you please tell me what this blight is, and how to manage it. C. M. HENNING.
Manitowaning. Manitowaning Island, Ontario.

The leaves of your Ivy-Leaved Geranium are affected with a *leaf-spot* fungus known as *Cercospora*.

In the line of treatment, you should pluck all the diseased leaves and burn them, then at intervals spray the remaining plants with

a dilute Bordeaux solution, made as follows: Dissolve 4 table-spoonsful of Copper Sulphate in 1 quart of hot water; also dissolve 4 table-spoonsful of fresh lime in 1 quart of hot water. Pour these solutions together into a pail containing 1½ gallons of water. This mixture, prepared in this way, loses its value in a few days, so new solutions should be made whenever the plants require to be sprayed.

O. A. C., Guelph. W. LOCHHEAD.

Rose Buds Not Maturing.

1268. Sir, I have a Clothilde Soupert Rose which has had only one flower; buds form on it but do not mature. Is this for want of nourishment or too much or too little water? It is regularly watered, is healthy and free from insects. Do such plants need rest in winter?

Yours truly,

Simcoe. WILLIE MURRAY.

As the rose plant in question appears to be in a healthy condition as far as its growth is concerned, the dry arid atmosphere of the house is probably the cause of the buds not maturing. Roses like a moist humid atmosphere to grow and flower in. Sprinkle or syringe the plant with clear tepid water two or three times a week, this will help it.

If the rose has flowered all the past summer and autumn, a rest will benefit it. This can be obtained by placing the plant in a cool temperature of about 40 degrees, and giving it only sufficient water to keep the soil barely moist. A month or two of this treatment will not injure the plant.

Roses, however, are not good house plants.

Hamilton. W. HUNT.

Whale Oil Soap.

1269. Sir, Could you let me know where to write for whale oil soap for spraying, and at what price it can be obtained, and oblige.

Yours respectfully,

Olinde. M. G. BUREAU

Mr. J. J. Ward, of Consecon, Ont., manufactures whale oil soap, and would be glad to quote prices. Mr. G. E. Fisher, of Bur-

lington, is Provincial Inspector of San Jose Scale, and will be glad to correspond with you as to the best means of applying the soap, and the proper time for the work.

Boxes for Apples.

1270. SIR,—I understand that an increasing number of fruit growers in Ontario and Nova Scotia are shipping their apples in boxes. As you are doubtless aware they have always been sold in boxes on the Pacific Coast. We think we have two good reasons for preferring the box to the barrel. The first is, families in towns and cities can often afford to buy a box who could not afford to buy a barrel, and this increases consumption. The second is that a larger quantity of fruit can be put in the space, thus increasing the carrying capacity, an important item. Up to the present time everybody has made a box to suit himself, so that we find boxes of apples containing from thirty-four to fifty pounds of fruit. Our Association asked the Hon. Minister of Agriculture to pass an Act legalizing a certain sized box, but so far no action has been taken. We are anxious to have a legal box, and our Association recommends the same size box that is in use in Oregon and Washington, for the reason that our fruit comes in direct competition with theirs in the Manitoba and Northwest Markets, and as those states are now shipping to Great Britain and Germany, no doubt they will come in competition with your eastern fruit, and it will avoid confusion if we can have uniformity of package.

I am writing the Association in Quebec and Nova Scotia to the same effect, and asking their co-operation in getting the Dominion Government to take action in the matter.

Hoping to have the active support of your Association. Yours truly,

N. J. BRANDRITH,

Sec. B. C. F. G. Ass'n

Box 452.

New Westminster, B. C.

Uniform packages for our fruit is one of the hobbies of our Ontario fruit growers, and we are pleased to find our friends in British Columbia aiming for the same object.

A few years ago when we began using a box for apples, we adopted a size measuring two cubic feet, viz., 24 x 12 x 12 inches outside, but recently changed this slightly to make them pack in the car to greater advantage, and adopted a box 10½ in. high, by 11½ in. wide by 22 in. long, outside measurement. This corresponds very closely with the sizes shipped from New York City, and offered at fifteen cents each by Frank B. Read, 210 Washington street, New York City, which he claims to be the *regulation*

size, and which measures *inside* 9¼ in. high 10¼ in. wide by 20¼ in. long. These are made with ¾ inch ends and ¼ inch sides.

But before ordering these wooden cases we would recommend our friend to write to the Dymont Baker Co., London, for samples of their new case, which promises to take the first place for fancy, tender fruits in all markets.

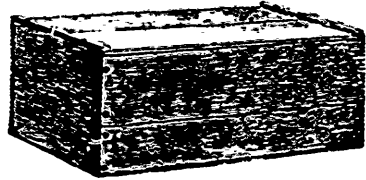


FIG. 2233. THE AMERICAN APPLE BOX.

The outside measurement of this package is 10¾ in. high by 12½ in. wide by 21½ in. long, and consists of a crate, containing four trays of fillers of sizes to fit the grade of fruit which is being packed.

New Uniform Fruit Packages.

1271. SIR,—Will you please write me a few words and tell me will every one have to put away the berry boxes we have at present, because they don't hold the full Imperial quart?

I have the latest kind that everyone has up till now.

Yours very truly,

Olinda.

ROBERT G. ANDERSON.

The Act providing for the use of uniform baskets for fruit will in no way interfere with the use by shippers of the baskets they have on hand, but it provided that any baskets in use not in conformity with the specified size, be branded with the number of quarts which they do contain.

There is no change in the berry box; in Canada we have always used the well known strawberry box, containing a Winchester quart, or 4.5 of an Imperial quart, and this is now legalized by the Act.

Fly Garden.

1272. My garden has done better this year. Cucumbers, tomatoes, grapes and potatoes have done particularly well, especially the last, although not generally good in the neighborhood I may also say that I had a few peaches this year.

for the first, on Early Crawford, and they were large in size and highly flavored. I have had the tree some years. I also saw a peach tree in St. Mary's with a good crop, but not very large. I mention this, as the opinion is growing that peaches can be grown further north than usually grown. I think a few may be grown here most seasons for home use, but not enough for sale.

What is the cheapest way to supply potash to the land. I have got along so far with wood ashes, but as coal is being more and more used

they are getting scarcer? I see potash is advertised in the journal, but it is in New York, and no agent is mentioned for Canada.

Listowel.

A. J. COLLINS

Wood ashes can be had in car lots from Rathbun Co., Deseronto, at a very small cost. Would fertilizer dealers respond concerning potash.

Open Letters.

San Jose Scale Remedies.

SIR.—The fruit growers of Ontario are becoming more and more interested in the San Jose Scale, and the question of how to extinguish it has become one of great importance to many who at first looked upon the agitation with indifference. In the original centers of infestation the San Jose Scale has multiplied and spread during the past season more than ever before. There is no longer lack of evidence of its destructiveness, for many fruit trees have been killed by it at these old infested points. The results from the remedies used last spring when applied carefully and according to the instructions, are very satisfactory and encouraging, and the Minister of Agriculture for Ontario will again supply spraying material (whale oil soap and crude petroleum), for the destruction of the San Jose Scale, at one-half its cost laid down.

Parties wishing to take advantage of this opportunity may do so by communicating with me on or before January 30th, 1902, after which date we will not guarantee to fill orders.

GEORGE E. FISHER, Inspector,
Freeman, Ontario.

Dec. 16th, 1901.

Great Britain's Imports of Food Products.

SIR.—In looking over the proceedings of the 10th annual meeting of the American Warehousemen's Association held in St. Louis, Mo. October 17, 18 and 19th, 1900, I find that during the year ending June 30th 1900, England consumed \$800,000,000 in food stuffs or \$1,200,000 daily. Of this amount \$650,000,000 was the value of imported products, the refrigerated imports amounting to about \$100,000,000 made up as follows: \$135,000,000 in dressed meats; \$50,000,000 in cheese; \$80,000,000 in butter; \$30,000,000 in eggs; \$50,000,000 in poultry; \$25,000,000 in frozen fish; \$35,000,000 in fruit and \$30,000,000 in other perishable food stuffs. In addition to this the consumption of foodstuffs in England is said to increase about \$25,000,000 yearly.

The above figures show what this market is worth and surely such a market is worth contending for. We cannot utilize it to advantage without a strictly reliable cold storage service and we should not desist till this is secured.

Freeman, Dec. 10th, 1901.

G. E. FISHER.

Nova Scotia Awards.

SIR.—I have just received from W. J. Buchanan, director-general of the Pan-American Exposition, the official list of awards to growers of Nova Scotia fruit exhibited by me there, which please publish:

The Nova Scotia Fruit Growers' Association for general exhibit of fruits—one gold medal.

F. Arthur Starr, Cornwallis, for display of 85 varieties of apples and 20 varieties pears—one gold medal.

Herbert Johnson, Wolfville, 20 varieties and 2 barrels apples—one silver medal.

Mrs. Olivia Johnson, Wolfville—one bronze medal.

I. Elliott Smith, Greenwich—one bronze medal.

C. M. Vaughn, Wolfville—one bronze medal.

Saxby Blair, Government Farm, Nappan, fruits in acids—one bronze medal.

Mrs. Ethel McKeen, Gay's River, Halifax—diploma.

James Elderskin, Wolfville—diploma.

Byron Chesley, Clarence, Annapolis—diploma.

Byron Chesley for fruits in acids—diploma.

W. C. Archibald, Wolfville—diploma.

The awards for vegetables have not yet been received. Arriving as we did in the last month of the Exposition, and laboring under great disadvantage in exhibiting, the awards are most satisfactory and should be a cause of pride to every Nova Scotian.

Wolfville, Dec. 9, 1901.

J. W. BIGHAM.

Western New York Fruit Growers.

SIR.—Our 47th annual meeting in this city Jan. 22nd and 23rd, 1902.

Program will include paper and talk from some of the leading scientific and practical horticulturists in America.

The discussion of questions will be a more prominent feature than ever before and the program will be exceptionally fine.

It is worth any man's while, if at all interested in fruit, to attend this meeting and rub up against over 500 of the cream of fruit-growers in New York State.

I will mail program, soon as ready, to all enquirers.

Rochester, N. Y.

Yours, etc.,

JOHN HALL.

Rose Exhibit at the Pan.

SIR, Owing to an oversight in connection with the awards made in the Floriculture Department of the Pan-American Exposition, the continuous and beautiful display of roses and cut flowers made by the firm of Morris, Stone & Wellington did not receive recognition by the Judges in their report. This error was not intentional, and it is to be regretted that it cannot be officially corrected. In justice to this firm, and also to Mr. Cameron, at Queen Victoria Park, Niagara Falls,

I desire to say that the floral contributions of these gentlemen, continuing almost throughout the entire season, formed one of the most pleasing and prominent features of the Canadian display in the horticulture department. In fact in this respect we stood quite in the front rank of any of the other exhibits, and the credit for this is largely due to our friends as above mentioned.

Yours very truly,

St. Catharines.

WM. H. BUSTING.

A FLORAL LOVE STORY.

Fair Marigold, a maiden fair; Sweet William was her lover,
Their path was twined with bittersweet; it did not run through clover;
The lady's tresses raven were, her cheeks a lovely rose;
She wore fine ladyslippers to warm her small pink toes.
Her poppy was an elder, who had a mint of gold—
An awful old snapdragon to make one's blood run cold!
His temper was like sour grass; his daughter's heart he wrung
With words both fierce and bitter—he had an adder's tongue!
The lover's hair was like the flax, of pure Germanic type,
He wore a Dutchman's breeches; he smoked a Dutchman's pipe.
He sent marshmallows by the pound and choicest wintergreen;
She painted him forget-me-nots, the bluest ever seen!
He couldn't serenade her with the nightshade lark.
For every thyme he tried it her father's dogwood bark.
And so he set a certain day to meet at four o'clock:

Her face was pale as snowdrops, e'en whiter than her frock.
The lover vowed he'd pine and die if she should say him no,
And then he kissed her beneath the mistletoe.
"My love will live forever, my sweet; will you be true?
Give me a little heartease, say only, 'I love yew.'" She faltered that for him alone she'd orange blossoms wear.
Then swayed like supple willow and tore her maidenhair;
For, madder than a hornet, before them stood her pop.
Who swore he'd cane the fellow until he made him hop!
Oh! quickly rose Mary. She cried "You'll rue the day.
Most cruel father. Haste, my dear and lettuce flee away!"
But that inhuman parent so plied the birch rod there.
He settled all flirtation between that hapless pair.
The youth a monastery sought and donned a black monkshood;
The maid ate poison ivy and died within a week.
—*N. Y. Tribune.*

Important Notices.

Address money letters, subscriptions and business letters of all kinds to Secretary of The Ontario Fruit Growers' Association, Parliament Buildings, Toronto.

Copy intended for publication in Canadian Horticulturist should be addressed as usual to Linus Woolverton, Grimsby, Ont.

All postoffice orders, cheques, postal notes, etc., should be henceforth made payable to Mr. G. C. Creelman, Toronto.

PRIZE COLLECTION OF VEGETABLES FROM PINE GROVE GARDENS, ORILLIA,

AT EAST SIMCOE HORTICULTURAL SOCIETY'S EXHIBITION, 1900.



FIG. 2234.

FOR 11 years in succession the collection of vegetables from Pine Grove Garden has been awarded 1st prize and diploma at the East Simcoe Horticultural Society's Fall Exhibition. In 1900, in addition to the collection of vegetables, 33 other prizes were awarded to vegetables from these gardens, three of them being for collections, viz., capsicums, tomatoes and cabbages, and 30 for other entries.

The gardens consist of 25 acres, situated in the west ward of Orillia; one-third of the land is of very light sand, one-third of clay loam and one-third of deep black muck. When 15 years ago it came into possession of the present owner, Mr. McKinnell, it appeared a most unlikely spot for a garden. During the first year or two, the seed was

blown out of the ground in one place, men and horses mired in another, and hundreds of tons of boulders had to be buried or otherwise got rid of from another. By filling up the sand and gravel pits, thoroughly draining the swamp (once a menace to the health of the neighbors) by extensive cultivation and fertilizing, aided by a good system of irrigation, it has been converted into one of the most productive 25 acres in Canada, shipping many car loads of the finest vegetables

annually to the lumbermen and miners of the northern districts of Ontario. Special attention is given to the following crops, viz.: Tomatoes, onions, celery and strawberries; of the last named 10,000 quarts were sold during the last season.



FIG. 2235.

GLADIOLI

WRITE FOR CATALOGUE.

Groff's "World's Best" Hybrid Seedlings.
Groff's Pan-American Exposition Collection.

Winners of the gold medal and 13 first prizes at the Pan-American Exposition, in competition with the leading American growers. LEMOINE, NARCISSUS, CHILIST, GANDAVENSIS, and all the leading strains in great variety.

JOHN A. CAMPBELL, Simcoe, Ont.