NINTH ANNUAL REPORT

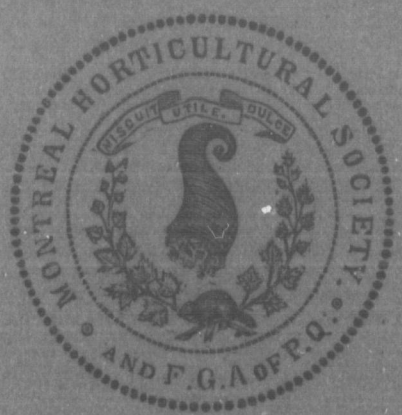
OF THE

MONTREAL

HORTICULTURAL SOCIETY

AND

FRUIT GROWERS' ASSOCIATION OF THE PROVINCE OF QUEBEC.



1883.

EDITORIAL COMMITTEE.

R. W. SHEPHERD, Jr.,
PROF. PENHALLOW,
J. DOYLE,
R. BRODIE Jr.,
C. GIBB,
J. McKENNA.

MONTREAL:
PRINTED BY THE GAZETTE PRINTING COMPANY.

1884.

MAP OF
PART OF RUSSIA.

(From the Report of the Fruit Growers' Association of Ontario, 1883.)

NOTE.—*The dotted line shows the route taken by* PROF. BUDD *and* MR. GIBB, *in* 1882. *The places underlined are those visited.*

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OFFICERS FOR 1883.

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T. STERRY HUNT, - - - - - - - - - - - - VICE-PRESIDENT.
H. S. EVANS, - - - - - - - - - - - - SECRETARY AND TREASURER.

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R. W. SHEPHERD, JR.

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DR. ANDRES,
C. GIBB,
R. BRODIE, JR.,
J. DOYLE.

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MONTREAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

SECRETARY'S REPORT.

The Annual General Meeting of the Montreal Horticultural Society was held on the evening of the 22nd December in the Natural History Society's Rooms, when there was a large attendance. Dr. T. Sterry Hunt occupied the chair, and there were also present Messrs. R. Benny, G. Cheney, R. W. Shepherd, jr., Major Latour, Charles Gibb, J. Doyle, R. Brodie, jr., J. Johnston, B. Gunning, J. Beatrix, J. McKenna, R. Spriggings, H. R. Drennan, M. Walsh, W. B. Davidson, George Moore, R. Hamilton, A. Somerville, G. L. Marler, J. McGregor, W. Evans, Prof. Penhallow, E. J. Maxwell, F. W. Evans, R. Harvie, Capt. Davidson, J. Cameron, Henry S. Evans, Secretary-Treasurer, and others.

The Secretary submitted the Annual Report as follows :—

As is customary at the close of the season's operations the following report of the Society is respectfully presented. At the outset it may be said that the Society fully maintains its own, and is at present in a sound and healthy condition. The Secretary, however, will endeavor to bring before the notice of the members some points which require consideration in order that the fine position which the Association has attained of late years may be fully maintained, and the useful and highly necessary work in which it is engaged continued from year to year with unabated energy.

The past year has been one of a great deal of activity, and of such a practical character that fruit growing, as far as apple culture is concerned, may be affected in the near future by the introduction of hitherto unknown varieties. The members of this Society as well as many other persons throughout the Dominion and the United States

are aware of the deep and untiring interest which our fellow-member, Mr. Charles Gibb, takes in all things that may tend to promote the interests of fruit-growing, especially in this province. The result of his journey to Europe last year and of his observations while travelling through Russia and other countries has already been placed in the hands of the members through the medium of the eighth report of this Society. These articles have excited a great deal of attention, have been extensively copied, and they are now about to be published in the forthcoming report of the Ontario Fruit Growers' Association, Mr. Beadle, the Secretary, having applied for permission to do so. Mr. Gibb was fortunate enough to obtain some specimens of some of the best known of the Russian varieties of fruit to show at the late exhibition. Mr. Webster, of South Northfield, Vt., also took a great deal of pains in getting together a fine collection of these Russian varieties, which were also shown, and the Society is much indebted to these gentlemen for the trouble and pains taken in making the collections. Of course, the fruit referred to was American grown. A small collection of Russian-grown fruit, consisting of apples and pears, having been sent to Mr. Wm. Evans from Riga, were exhibited in the Messrs. Dawson's window and attracted considerable notice. Some of the specimens arrived in very good condition indeed, but others were very much injured and of no use. However, the knowledge now gained about Russian fruits through actual observation would have taken several years of experimenting to acquire.

Acting on a suggestion in the report of last year, an effort was made the past season to look up our own native apples, and see if among them were not to be found some worthy at least of trial. Mr. Jack undertook the duty of looking through the County of Chateauguay, and Mr. Hamilton through Beauharnois and Vaudreuil Counties. The fruit being poor this year and scarce, the season was not as favourable for the object sought as it might have been. However, a fine collection of seedling apples was got together, those coming from the orchard of Mr. J. W. Newman, Lachine, being specially admired. A large committee was named to examine and report on both the native and Russian varieties, Mr. Hamilton having charge of the report on the former, and Mr. Charles Gibb on the latter. The native apples shown excited a great deal of interest among some of the gentlemen from a distance who had acted as judges, and who

were on the committee of examination. One of them writing lately (Dr. Hoskins) says:—"I think it would be well, after selecting say six or eight of the most promising varieties to distribute scions to interested and careful fruit growers throughout the Province, keeping a list of their names and getting reports from them from year to year until they have a fair trial." The foregoing is very practical work and, should even one or two good varieties be found among the lot, the country would be repaid the cost many fold. A number of the native seedlings have been put away for further examination during the winter, the result of which will be known later.

The Society again offered prizes this year for the best peck of seedling apples sent in on the 1st May last. The competition resulted in first prize being awarded to Mr. Jack, of Chateauguay Basin, 2nd prize to J. Smith, Lachine, and 3rd prize to R. Hamilton, Grenville. All of them seemed to be apples of very good quality, and the apples obtaining the 2nd prize, though irregular in size, were of a very fine flavour indeed. This is a prize it would seem advisable if possible to keep up.

The society was again able to offer prizes for winter gardening the past year, M. H. Gault, Esq., M. P., having again liberally subscribed fifty dollars in aid of the object. The result of their awards has already been published.

The members of the society are again indebted to the following ladies and gentlemen for their courtesy in opening their conservatories on stated dates during last winter, viz.: Mrs. Redpath, Andrew Allan, Wm. Lunn, Edw. MacKay, E. P. Hannaford, Hon. D. A. Smith, and Andrew Robertson, Esqrs. The first conservatory was opened on the 20th January and the last one on the 20th of March. I trust that even a larger number may be open the coming winter, especially during carnival week, as two or three fine new conservatories have been added the past summer to those already in existence.

The regular annual show of the society took place in the Victoria Rink on the 18th, 19th and 20th September. The weather was very fine, but the amount of money taken in at the door was disappointingly small, being only $325, against $663 in 1882, $668 in 1881, $1,002 in 1880, and $291 in 1879. The opinion has been expressed by some that a large Provincial Exhibition was rather a hindrance than a help to the show of this society. The foregoing statement will easily refute this, as in the first and last years named there was no Provincial Exhibition, while there was one held the other three years.

I believe it has been definitely decided to hold a large exhibition here next year, and if so this association will likely derive benefit therefrom. The number of entries this year 1,513, of which, from various eauses, 309 did not put in an appearance. The display of plants was not as large as for a year or two past, but the explanation is easy when it is considered that owing to rebuilding and other causes some four of our very largest exhibitors were unable to show at all. These were Mr. Stanford, gardener to George Stephen, Esq. ; Mr. Laumillier, gardener to Wm. Lunn, Esq. ; Mr. Cameron, gardener at the late Mr. McKay's, and Mr. W. B. Davidson. Mr. Laumaillier was the largest winner of prizes at the exhibition last year, Mr. Cameron the previous year, and, I believe, Mr. Stanford a year or two previous, while Mr. Davidson is always a large exhibitor.

Mr. Beatrix, gardener to Andrew Allan, Esq., is the largest winner of prizes at this year's exhibition, and has received the largest amount of prize money ever paid a single exhibitor, viz., $100.85. Mr. Spriggings comes second, and Mr. O'Hara third, while Mr. McGregor leads the amateurs.

The display of cut blossom was large, and some very good flowers were shown, the Messrs. Bell, of Quebec, carrying off a good many prizes for dahlias.

The display of fruit was very large, and probably the fullest average display ever made in Montreal. The apple crop has not been a good one this year, but certainly some very splendid specimens were shown, and for plates of single varieties and collections up to twelve varieties, the competition was exceedingly keen.

The display of out-door grapes was large, but owing to the unfavourable season many varieties were not fully ripened. Mr. Graham, of New Edinburgh, was awarded the Society's diploma and $20 for the best collection.

The show of plums was very fine, indeed, and some varieties, such as those shown by Mr. Jas. Brown, are not often seen on exhibition tables in Montreal.

Some fine peaches were shown, and the display of hothouse grapes was good, though not as large as it would have been had the season been more favourable. Mr. Beatrix carried off the chief prize of $25 for the best bunch in this class.

The dislay of vegetables was good, and that of potatoes particularly fine, Mr. Hughes, of Cote des Neiges, showing a number of new varieties, for which he was awarded a special prize.

The total number of prizes offered at the September show was as follows:—Plants and flowers, $762.75; apples, pears, plums and out-door grapes, $403; hothouse grapes, peaches, nectarines, &c., $118; vegetables, $232.75; honey, $22. Of this amount $1,260.75 was awarded and $1,227.75 paid, leaving $33 unclaimed up to this date, but which will probably be claimed later on, as in other years. The total amount of prizes therefore paid by this Society since the rendering of the last annual statement amounts to $1,339.31. It is a matter of very considerable difficulty for the Society to pay so large an amount in prize money in addition to all other expenses without running behind.

The Society has made a gain of about $60.00 in its operations this year, though the apparent balance in its favour is not so large as last year, but the amount of unpaid liabilities is less. Three things have contributed to this result:—1st, the prudence of the Directors in curtailing the prize list somewhat; 2nd, the large amount collected from members' fees amounting to $1,773.00, and being $119.00 in excess of the largest amount ever collected in the history of the Society, and 3rd, to the Society's success in obtaining from the Government last January $200.00 in aid of publishing the Report. The Secretary is particulary indebted to Mr. Lesage, the Deputy Minister of Agriculture, for the consideration with which he listened to the request and the prompt manner in which it was granted. We have, however, I am sorry to say, no good grounds to expect that we shall receive similar aid this year, and the Society will have to govern itself accordingly.

Your Secretary having now completed his tenth year of office it may not be inappropriate to institute some comparison between the position occupied by the Society the past ten years and the ten years immediately previous. The average membership of the Association from 1864 to 1873 was 173, from 1874 to 1883, 664. Average members' fees collected, $341, against $1,317. It should be noted, however, in the year 1872 $450 was collected in addition from life members, but the money was expended for general purposes instead of being invested as a permanent fund. The total amount of prizes paid from 1864 to 1873 was $6,657.50; 1874 to 1883, $9,927.09. It may be noted that in the year 1867 5 per cent. was deducted from the amount of prizes awarded, and in the year 1870 there would seem to have been hardly any prizes paid, only $22 standing in the books as having been expended for that purpose. In the year 1874 the

Society found themselves unable even to offer any prizes, but in the year 1875 paid in prizes the sum of $463.75, and in 1876 the sum of $758. The Society for the last four years have paid each year a much larger sum in prizes than they were able to pay during the first three years after my election as secretary. The total receipts of the Society from 1864 to 1873 were $13,313.67, and the expenditure, $13,694.44. The receipts from 1874 to 1883 have been $28,886.89, and the expenditure has been $27,761.29. The Society still retains its bank stock, and has expended a large sum of money in plant from year to year, so that it is at this moment one of the best equipped societies in America. Very few horticultural societies can show such a record of progress in ten years as the foregoing, and with a careful and prudent administration of its affairs there is no reason why it should not continue to hold its position.

One of the great difficuties in working the society is the collection of the members' fees. A strong membership is the backbone of the society, as by being members, and receiving tickets, they attend the shows, and become interested in its work. The membership this year numbers 894 ordinary, and nine life members, being, as before stated, the largest on record. Of this number 168 are new members, and 18 ceased to subscribe last year. The secretary has to acknowledge assistance received in obtaining new members and retaining old ones from Messrs. Cheney, Benny, Doyle, Bain, Gunning, Latour and Sommerville. The bulk of the work, however, of this nature has been done by Mr. Hamilton and the secretary. From the experience I have had in the working of this society, I am of the opinion that it will be impossible to keep this membership together unless the individual members of the board will devote some time and attention to the matter. People have got to be looked up, and the aims and objects of the Society placed before them in a right light, or they will not subscribe. In support of what I say, I point to the paltry number of sixteen subscribers at $1 each, as almost the entire number we have had from country districts of this entire Province. This is very different from the manner in which the Ontario Association is supported in the country at large.

It has been suggested by one of the directors that an effort should be made to obtain one or two hundred life members, provided the money so obtained could be invested in the hands of trustees and only the interest used; the suggestion is a good one, and is, no doubt, practicable. Having a certain amount of fixed income would, in a measure, reduce the working expenses, but only by a small percentage.

One of the members has suggested that some gentlemen offer special prizes as a means of enabling the Society to keep up their exhibitions. I hope that the coming year this may be done, giving such subscribers the right to say to what particular branch the money shall be devoted.

I think that the prize list requires a complete revision. In my opinion there has been too much of a uniformity from year to year, and I would suggest that for a time at least, something be dropped and the money applied in offering prizes for something else. I have before me the prize list of the Cincinnati Exhibition for 1883, and while we cannot hope to equal the handsome prizes offered therein, we could, with advantage, I think, model our own prize list in some repects on this one. For instance a prize of $20 and $10 is offered for a group of fancy Caladiums, not less than 30; $15 and $10 for a group of Begonias, not less than 25; $30, $20, and $10 for not less than 30 tuberous Begonias; $50, $25, and $15 for not less than 50 varieties of geraniums. In cut bloom $15, $10, and $5 is offered for the best oval bouquets, not less than two feet in diameter; $15, $10, and $5 is offered for first, second and third best 10 corsage bouquets, and the same for the same number of party bouquets. The Massachusetts Horticultural Society offer prices for the best display aud best kept cut flowers, filling 150 bottles; also for the best kept and best arranged basket of cut flowers and table designs. There are also other prizes in the above and other lists which might meet with the approval of the members of this Society if brought to their notice. The matter will, of course, rest with the incoming board of directors, but an expression of opinion from this meeting might do no harm. It is noticeable that in many of the American lists only two prizes are given instead of three. One thing is very much wanted, and that is a proper definition of what constitutes an amateur.

The Society is under great obligation to Mr. R. W. Shepherd, jr., and Mr. Chas. Gibb, for the valuable time and great attention which they give to the publication of the annual report. It is got up in a manner to reflect credit on any society, and hitherto, at least, the sole reward they have had for their labours is their love of the work and the knowledge that in many quarters it is highly appreciated. If the Government could only be induced to bear the cost of the mere printing, as was agreed upon at first, it would remove a pretty heavy burden from the Society.

Since the Society was last called together several of the oldest

members have fallen from the ranks, among others our late esteemed President, N. S. Whitney, Esq. This gentleman had been for many years a member of the Society and, on the election of Mr. Cheney to the presidency, was elected to the vice-presidency, which position he occupied for three years in succession. On Mr. Cheney retiring from the presidency, Mr. Whitney was elected to that position, and was at his death in his third year of office. He was well known, not only in this country but in the United States, in connection with agricultural and horticultural matters, but more especially in connection with stock-raising. As we have comparatively few gentlemen of means and taste, who do take an interest in such things, their removal is a loss to the community. During his occupancy of the presidency of this Society he gained the esteem and respect of all those with whom he was associated. My own official relations with him were always of the most pleasant and agreeable character, which fact greatly conduced to the easy working of the Society.

Our present esteemed President, Dr. T. Sterry Hunt, was elected to fill the vacant Presidency, and Robt. Benny, Esq., was elected to the Vice-Presidency, G. L. Marler, Esq., being elected to the Board of Directors. The library of the Society has been open, as usual, the past year, but the members do not seem to avail themselves of the opportunity as much as might be expected. It might be advisable to publish a complete list of the books that are to be found there with the next report, as much information not procurable very readily elsewhere may be obtained there.

The Society's exhibition in September was favoured with a visit from Lord Carnarvon. In the absence of the other Officers of the Society, the Secretary offered his services to explain anything that might require explanation. His Lordship seemed particularly interested in the fruit, and some specimens of some of our finest and most popular varieties were sent him for further examination, the receipt of which has been suitably acknowledged.

A note has been received from Mr. Gagnon, of the Department of Agriculture and Public Works, under date of the 14th inst., stating that the Agricultural Journal would only be sent in future to those members of societies who remitted thirty cents per annum in advance. This is another matter that will require the immediate attention of the incoming Board of Directors.

The books of the Society for the past year have been audited by Messrs. J. M. M. Duff aud Alex. Somerville, and show a balance of

cash on hand of $12.69, exclusive of $91 members' fees, collected on account of the coming year.

The total assets of the Society are estimated as follows :—Plant, $1,447.48; bank stock, $1,119; cash on hand, $12.64; value of books in library, say, $250; total, $2,829.12. Everything purchased by the Society has been bought at the lowest price, and though it might not be possible for the Society to dispose of their assets at cost, they are probably worth to the Society within a very slight amount of their actual cost. The Association is thus in a sound position and doing a good work, and it will rest largely with the members themselves as to whether it is kept so.

HENRY S. EVANS,
Secretary-Treasurer.

FINANCIAL STATEMENT.

THE MONTREAL HORTICULTURAL SOCIETY AND FRUIT GROWERS' ASSOCIATION OF THE PROVINCE OF QUEBEC, IN ACCOUNT WITH HENRY S. EVANS, SEC.-TREASURER.

Dr. FROM 30TH NOVEMBER, 1882, TO 22ND DECEMBER, 1883. **Cr.**

1882.				1883.	
Nov. 30—To balance cash on hand, November 30th, 1882		$	76 81	Dec. 4—By paid Secretary balance of salary for 1882	$ 100 00
Dec. 27—To grant from Provincial Government in aid of publishing report for 1881			200 00	" prizes paid to 22nd December	1,339 31
1883.				" paid pastage for year	46 05
Aug. 29—To M. H. Gault, Esq., for special prizes	$ 50 00			" expenses of Annual Report for 1882	268 29
To G. Cheney, Esq., for special prizes	25 00			" paid Library expenses	79 45
		$	75 00	" " Judges' expenses	117 05
To Dividends on bank stock			60 00	" " on account of plants	13 65
" Cash received for reports sold			6 65	" " printing and advertising	250 28
Sep. 20— " Receipts from Sept'er show			325 05	" " rents and insurance	175 52
" Members fees received, 879, at $2	$1,758 00			" " for music, decorating rink, &c	190 00
" Members fees received, 15, at $1	15 00			" " cost of making collections of seedling apples in three counties	54 05
		$	1,773 00	" " sundry accounts, including labour, carpenters, bill collecting, clerical assistance, &c	370 22
Dec. 7— " Annual grant from Goverment			1,000 00	" " Secretary salary for 1883	500 00
				" balance cash on hand	12 64
		$	3,516 51		$ 3,516 51

Mr. Cheney, in moving the adoption of the report, made some eulogistic remarks concerning it. He reviewed briefly the history of the Society, comparing the low state in which it had once been with its present prosperous and flourishing condition. Not very long ago, in the book issued by the American Pomological Society, a blank was opposite the name of Quebec. That had been filled and our fruit growers had made a standing for themselves. Besides this the Society had taken prizes at the Philadelphia Centennial and the Wilder silver medal at the Boston Exhibition.

Major Latour seconded the motion which was carried unanimously.

The election of Directors for the ensuing year was then proceeded with and resulted as follows, Messrs. Spriggings and Hamilton acting as scrutineers:—Messrs. C. Gibb, G. Cheney, W. Evans, R. W. Shepherd, J. Doyle, J. Beatrix, R. Brodie, Prof. Penhallow and Dr. Hunt.

Mr. McKenna suggested that the society should do something to encourage floriculture by having discussions and essays on the subject at the meetings and give prizes. This plan had been tried in the States and had proved very beneficial. There were many young florists in Montreal who would like to learn something from their older friends and exchange ideas.

The Chairman thought the idea was an excellent one. In Boston and New York they had monthly meetings, where a friendly talk on the subject took place, and those who had rare specimens brought them to exhibit them.

A discussion then took place as to the advisability of devoting more money to prizes for flowers, but this was also left over for the new Board to consider.

On motion of Mr. Shepherd, seconded by Mr. Marler, the following gentlemen were elected a committee to draw up the annual fruit report:—Messrs. R. W. Shepherd, R. Brodie, Jr., Prof. Penhallow, C. Gibb, J. Doyle and J. McKenna.

The election of the Library Committee was left to the incoming Board of Directors.

The Secretary announced that he had received a package of seeds from the Botanical Gardens, Natal. Some of them were not known here, but those who wished to try them should send in their names, and the seeds would be divided among them.

Mr. Cooke protested against the election of the directors as the meeting had been called illegally. The meeting should have been

called in the first week of December, and the Secretary should have inserted a notice in the papers at least six days before the meeting.

The Secretary stated that he had advertised the meeting in the *Gazette* and *Minerve* as is the custom.

The Chairman said in regard to the other objection that they were unable to call the meeting at the proper time, as they had to wait until they had received the amount of their claims from the Provincial Treasurer.

The meeting then adjourned, and at a meeting of the newly appointed Board of Directors, Dr. T. Sterry Hunt was re-elected president, Mr. G. Cheney, vice-president, and H. Evans, secretary-treasurer.

NOTES ON THE TREES AND SHRUBS

OF

NORTHERN JAPAN.

PROF. D. P. PENHALLOW.

In presenting these brief notes on the flora of Northern Japan, a part of the country as yet but imperfectly known, it seems quite desirable to enter upon a few general considerations relative to climate and geographical position, which will facilitate our comparisons of the flora with that of other parts of the world.*

Japan, as a whole, covers a fairly wide range of latitude, extending from 31°[2] to 52° N. Lat., but the range in longitude is limited, the country being nowhere over 250 miles in width. The chief natural divisions are Kiushiu, Shikoku, Honshiu, Yezo, and the Kuriles.

Both Kiushiu and Shikoku lie south of the Inland Sea between latitudes 31° and 34° 15′ N., the former island being the more southern. In both, the vegetation is sub-tropical, and in many respects distinct from that of the island of Honshiu next north.

Honshiu—erroneously called Niphon—lies north of the Inland Sea, and extends from latitude 33° 30′ to 41° 40′ N., and thus not only includes a portion of sub-tropical vegetation, but even embraces north temperate, and in some of the more elevated portions, a sub-arctic flora.

Yezo, or that portion which we will specially designate as Northern Japan, is well separated from Honshiu by the Straits of Tsugaru, and

* When this paper was first suggested, it was thought that a mere enumeration of trees and shrubs, with some of their prominent characteristics, would not present the subject in a sufficiently satisfactory form, and there has therefore been introduced such extra matter, embracing brief comparisons, considerations of distribution, partial synonyms, &c., as it is believed will materially aid in a more comprehensive and intelligent grasp of the subject. To keep within the limits of the Report, a number of trees and shrubs have been omitted, but in most cases they are of the least importance.

2. Excluding the Liu Kiu Islands, which carry the limits of the Empire down to 24°.

lies between latitudes 41° 30′ and 45° 30′ N. Its flora is strictly temperate and sub-arctic, though it embraces also several representatives of more purely tropical families.

The Kurile Islands extend north-eastward in a narrow chain, between latitudes 44° and 52° N. Their flora is but meagre, and chiefly arctic and sub-arctic.

The insular condition of the country causes important modifications of climate highly favorable to vegetation. From the South China Sea, an oceanic current—the Kuro Siwo—flows northward and eastward, along the south-eastern coast of Kiushiu, Shikoku, and Honshiu, doubtless exerting its influence upon the climate of these islands, close to the shores of which it flows. Its influence is lost in the north, however, since but a short distance north of Yedo Bay, it turns somewhat eastward and crosses the Pacific to the coast of California and Oregon. The northern portion of Honshiu and the whole of Yezo and the Kuriles are thus deprived of that ameliorating influence which is so conspicuously illustrated in the climate of Great Britain. On the other hand, the winds blowing across the Japan Sea from the north-west encounter the cool mountain air of both Yezo and northern Honshiu, and deposit their contained moisture, thus making these districts areas of great precipitation.

In Yezo, the annual snow-fall is 12·5 feet, commencing about the last of November and continuing until the middle of April, without mid-winter thaws. This alone is by no meaus indicative of severe winters. The frost, which rarely penetrates more than six inches in early autumn, soon disappears from the soil under the influence of the deep snow, and when the latter finally disappears, vegetation springs forth at once, and the soil may be prepared for planting without delay.

These considerations would guide us, therefore, in separating the country as a whole, into four regions, which would embrace (1) Kiushiu and Shikoku; (2) Honshiu; (3) Yezo, and (4) the Kuriles. Yet a further important division might be made in Honshiu, between the more temperate flora on the one hand, and the more sub-tropical on the other, a division which would be very appropriately defined by the distribution of the camellia and tea plant, both of which find their highest limits of distribution not far north of Tokio, in about 36° or 37° N. latitude.

The special region considered in the following pages as Northern Japan, embraces the island of Yezo alone, unless otherwise specified. From the insular character of this region, we might infer an influence

upon the flora by reason of which this latter would present some features of distribution quite different from what would obtain on continental areas, and this we find to be true in certain representatives of tropical families, which are carried to a higher northern limit than would otherwise be possible.

Comparing Yezo with the known climate of similar latitudes, we find in some instances, a fairly close correspondence. Thus, taking Boston in latitude 42° 22′, and Sapporo, the capital city Yezo, in latitude 43° N., and we find the same mean, annual isotherm common to both. The region about Montreal being considerably further north—latitude 45° 30′—the climate is necessarily somewhat more severe, and could not fairly be brought into comparison. From its insular character, the climate of Yezo is necessarily much more equable than that known here, or even in New England, a difference which is more manifest ftom the fact that while the mean annual temperatures of Boston and Sapporo are the same, the extremes of summer and winter temperature in the latter are much less, rarely exceeding +80° or —7° Fah. There is thus an absence of those extreme and sudden variations in temperature which are so trying and often prove so destructive to vegetable life.

From the earliest days of exploration and conquest, to the present time, there has been a constant interchange of floras between remote parts of the earth at the hand of man, a sure, though artificial means of rapidly distribnting those forms which would otherwise long remain confined to narrow limits. This movement has been greatly accelerated in recent years, and is constantly augmenting as the special value of plants becomes more clearly defined. Interchange between different localities where the physical conditions are largely similar, and the distribution of plants over new areas where they may come to have important local or general value, are determined by such well defined economic principles as to need no further and special argument in favour of it. It was in fact a recognition of these principles which first led to the introduction of mulberry trees into Europe from China, and of many of our most desirable fruits from Europe, as well as the transplanting of the pine apple from its native home in the West Indies to the antipodes. It is also a recognition of the same principles which lead the Japanese to-day, to import and distribute throughout their country all our improved varieties of fruit, grain and even forage plants. The principles which at first applied to the distribution of food plants, applies to-day with hardly less force to the

distribution of those trees which offer valuable sources of timber, or of those which, by their highly ornamental character, serve as a means of higher, broader and more ennobling education. There is no country in the world which cannot derive a large measure of benefit from an interchange with other countries, especially with those which have similar conditions of soil and climate, but dissimilar floras, and this can only be effected in a systematic and satisfactory manner through established centres of collection and distribution. Though there is much delay in organization, in many places where they should long since have been established, it is now a well recognized fact that no country can afford to be without at least one Botanic Garden, and in a country of such extent as Canada, with so many interests to care for, two or three gardens might not be superfluous. Much good has been and always will be accomplished by private parties interested in such subjects, but the work carried on in this manner is desultory, lacks the basis and strength of a broad and well defined system, and is always more or less unsatisfactory when the interests of the country at large are considered.

This is hardly the time or place to define the work of a botanic garden, but it does seem proper to urge the great desirability of establishing such a centre where authoritative information can be obtained upon subjects relative to botany in its broadest sense.

NAT. ORD. MAGNOLIACEÆ.

This interesting family, though chiefly of tropical and sub-tropical habit, has some very important representatives even in the northern latitudes of Yezo, where two genera, *Circidiphyllum* and *Magnolia*, are abundant.

The genus *Circidiphyllum* has no representatives in the Western Hemisphere, and is even wanting on the Asiatic Continent of the north. In common with the other representatives of this family, this tree appears to find its greatest northern distribution in Yezo; the family generally being of a more southern type, finding continental contact through more southern latitudes.

The genus *Magnolia* is abundantly represented on this continent, and though most of the forms are southern, one or two species enter the southern limits of Canada, and are sufficiently hardy to blossom regularly. The family is also represented in southern Canada by the tulip tree (*Liriodendron Tulipifera*).

MAGNOLIA OBOVATA—THUNB.

Syn.: *Buergeria obovata*—SIEB. & ZUC.

Japanese: Tofunoki.

Hab: Yezo.

A tree 15 to 25 feet high with obovate leaves 4 to 6 inches long, ⅔ as broad. The flowers appear in early May, and somewhat plecede the leaves. They are white and scentless, about the size of the flowers of *M. glauca*, 2½ to 3 inches wide, the outside of the petals tinged with pink.

This tree occurrs pretty abundantly in Yezo, though as far as observed, it appears to be chiefly confined to the moist woodlands of the upper valleys and lower slopes of the foot hills, occasionally ascending the more perfectly drained slopes for some distance. That it may prove hardy here is quite possible. The wood of this and other species is now being used very largely by the Japanese for the manufacture of matches.

MAGNOLIA KOBUS—D.C.

Japanese: Kobusi.

Hab: Northern and central Honshiu. Mountains of Hakone, throughout Yezo. (Fr. & Sav.)

The foliage of this species is more scattering than that of *M. hypoleuca*, but the leaves are not as large or handsome. They are 2½-3 inches broad and 3-6 inches long.

MAGNOLIA HYPOLEUCA—SIEB. & ZUC.

Japanese: Honoki.

Hab: Mountain woods throughout Japan.

A tree 20 to 35 feet high, with somewhat abundant foliage. Leaves 7 to 10 inches long, preceding the flowers and clustered near the ends of the branches. The flowers appear in June; are large, white and very sweetly fragrant. There is somewhat of a resemblance between this tree and *M. umbrella* of the southern U. S.

The Japanese name (hono) flame of fire, and (ki) tree evidently refers to the red, cone like fruit and scarlet seeds, which would give the appearance of flames darting out from among the leaves.

Franchet and Savatier note the occurrence of this species about Nagasaki in the very south of the principal islands, while it is also known through Honshiu and abundantly in Yezo. In the latter island it seeks rather more well drained slopes than *M. obovata*, and

hence we find it generally at a slightly greater elevation, less frequently in the valleys. This will prove a desirable acquisition.

In addition to these magnolias, there are several southern species, which, however, would not be likely to prove hardy in Canada.

CIRCIDIPHYLLUM JAPONICUM—SIEB. & ZUC.

Japanese: Katsura.

Hab: Mountains throughout Japan. Sub-Alpine woods of Yezo (Albrecht).

The *Circidiphyllum* is known to the Japanese as katsura, a name which we should adopt here as the common name, if we are to employ other than the generic, scientific term. In its distribution, it is found sparingly in the elevated lands of northern Honshiu, but abundantly in the forests of Yezo, where its true home appears to be. In this latter district, it is rarely found growing on bottom lands or where there is a large accumulation of moisture, but it delights in the well drained and gentle slopes of the foot hills, along the base of which it forms a narrow belt, its zone of distribution with reference to altitude, being slight, since it does not appear to thrive in the more exposed and more completely drained tracts of the higher slopes. In the sheltered valleys, however, it has been noted to reach an elevation of 2,000 feet above sea level, which would indicate that exposure is a stronger factor in its distribution than moisture.

The foliage is small, graceful and compact as a whole; the leaves are broadly cordate, from 2 to 2½ inches in diameter. When we come to consider the hight of the tree, this will be seen to be quite small. The flowers are very small and inconspicuous, so that the tree has no value in this respect as have the magnolias, in fact, the flowers are dicœcious, so that if propagation is to be effected by seed it would be a difficult matter to determine the sexes. The fruit is also small and inconspicuous, consisting of slender follicles which are only about ¾ to one inch long, and contain many very small seeds. The tree attains a hight of 80 to 90 feet, while the fairly close branching, rounded head and delicate foliage, all combine to render it a most stately and beautiful object. When growing under favorable circumstances, the trunk is very straight and usually free from branches for thirty or more feet from the ground, a fact which greatly enhances its value as a timber tree, and which is taken advantage of by the Ainos in making use of the straight, clear trunk for dug-out canoes. These are often forty feet long, and show no large knots from stem to stern.

In many trees, however, the trunk seems to be branched near the ground, though this is more probably due to union of several trees when young, rather than a natural habit of growth. It is very common to find the trees of great diameter, and several which I took as representing the oldest trees, were found to have a girth of over twenty feet, this being a very common size. The largest trees measured, gave a circumference of twenty-seven feet at three feet from the ground, or a diameter of nine feet, in round numbers.

With regard to its timber qualities, little can be said as the result of exact and careful determination; but certain it is that the wood is held in high repute. When freshly cut, it is light in color, but by exposure assumes a darker hue, which usually becomes light chocolate or brown. Owing to the fineness and compactness of the grain, it is used very largely for indoor and cabinet work, as it is capable of a good polish. It is moderately light in weight, strong, easily worked, though not as soft as pine, tough and durable. These latter qualities are evident from the extent to which it is used by the Ainos for their canoes, largely in preference to any other wood.

In 1879, in a short communication to the Gardeners' Monthly, I stated that there would probably be little or no difficulty in establishing the tree in Massachusetts, and thus far the prediction has proved a correct one. So far as I know, the tree was first introduced to the United States by my friend Col. W. S. Clark and then by myself through seed in 1876 and 1877, The trees have been growing since that time, and give every indication of proving hardy, although there have been some very severe winters to try them.

Whether the tree will prove hardy here, remains to be seen, but I am very strongly of the opinion that it will, more especially as there are in the College grounds, trees which are of a somewhat more southern type, finding their extreme northern limits in Japan where the katsura is most abundant, but which so far have proved hardy. The great value of this tree makes it desirable that an effort should be made to introduce it here. Its propagation must be effected through seed.

CERCIDIPHYLLUM OVALE—MAX.

Hab: High mountains of central Honshiu. Its more southern distribution renders it unlikely to prove hardy here. The tree differs in its foliage, from the preceding, by having longer or less rounded leaves.

NAT. ORD. BERBERIDACEÆ.

A somewhat interesting family, fairly well represented in Canada and the United States by indigenous, shrubby species. The chief representation is through the barberries, or the genus *Berberis*, of which there are three indigenous species in Canada, the Rocky Mountains and Oregon. There is also found in the wild state, the common European barberry (*Berberis vulgaris*) which, however, was originally introduced into cultivation and has since escaped and become naturalized. The Japan Mahonia (*B. Japonica*) is now known here in cultivation.

The genus is fairly well represented in Yezo by the *B. vulgaris*, though in northern continental Asia, this species is wanting and does not appear until Europe is reached. Notwithstanding this, however, *Berberis* is fairly well represented in eastern, southern and through central Siberia, as well as in the districts of the Caucasus, by other species.

BERBERIS VULGARIS—L. BARBERRY.

Japanese: Fomaraso.

Hab: Yezo.

The common European barberry now run wild in the eastern United States and southern Canada, is found sparingly distributed through the higher and more thoroughly drained valleys of Yezo, where its general form and habit of growth are the same as with us. It is represented in southern Japan by three species, one of which is our Japan Mahonia of cultivation. They are *B. Chinensis* Desf. (*B. Vulgaris* Thunb.) *B. Sieboldii* Miq. and *B. Japonica* R. Br.

NAT. ORD. TILIACEÆ.

This small, tropical family is widely distributed and has some few important representatives in temperate regions, of which the lindens (*Tilia*) are the best known and find wide distribution, being indigenous to Europe, Asia and America. Those species of this genus from the two former continents, are now not unknown to us, having been largely introduced in cultivation.

The genus (*Tilia*) is represented in central and southern Europe by five species, the greatest northern limit of which seems to be

reached towards the west, just after the Ural Mountains are crossed. In eastern Asia, the Amoor is the highest northern limit of distribution.

Through the eastern and northern parts of this continent, there are only two indigenous species, *T. Americana* and, *T. platyphylla*, of which the former is common in Canada, and the latter is known only to the more southern United States. Within the Dominion, the northern extension of the genus as represented in the common Basswood (*T. Americana*), is reached west of Winnipeg in Lat. 51° N. (Bell); thence the line of distribution dips southward along the northern border of the great lakes and through the St. Lawrence valley to the Atlantic. *Tilia Europea* is known here in cultivation, especially southward. Propagation of these trees may be readily effected, by cuttings, grafts or seed.

TILIA CORDATA—MILL—BASSWOOD.

Japanese: Shina.

Hab: Kiushiu. Mountains of Hakone and through central Honshiu. Common throughout Yezo and in the Amoor district of Siberia.

A fine tree twenty to forty feet high, and much resembling the common American and European species. Within Japan, it has a wide range of distribution, occurring throughout all the principal islands. It also unites the genus directly with the continental flora in Asia, by its general distribution through the Amoor district, this also being its most northern limit. Its name shina (China) and ki (tree), or tree of China, would seem to indicate the common occurrence of this species or its congeners in that country.

The chief value of the tree in Yezo, at the present time, is determined by the very fiibrous bark, which the Japanese and Ainos collect in large quantity, and from which they make most serviceable ropes and cords. Large quantities of this material are collected each year, and as this involves absolute destruction of the trees, it seems highly probable that the forests of Yezo may soon know the *shina* only as a thing of the past, unless proper restrictive measures are adopted and enforced.

TILIA MANDSHURICA—RUPR. ET MAX.

Syn.; *T. argentea*—REGL.

Japanese: Bodaiju.

Hab: Mountain woods of central Honshiu (Franchet & Savatier). Southern Amoor district (Max). Also through Yezo.

This tree is found almost as widely distributed as its congener, and in Yezo, where I believe it is commonly associated with *T. cordata*, it is used in much the same way for its fibrous bark. Both species could undoubtedly be introduced here without material difficulty and with advantage.

NAT. ORD. TERNSTRŒMIACEÆ.

Though this exceedingly interesting family, known to me chiefly through the camellias, is chiefly tropical or subtropical and very largely represented in southern Japan, yet a few important members carry the distribution to a rather high northern limit, as seen by the appearance of *Actinidia* in Yezo and through the Amoor district of Siberia. This genus thus extends the northern distribution of the family to about 51°–52° N. lat., but continental contact of both genus and family is chiefly effected through much more southern latitudes.

The family has no northern representatives on this continent, and even in Japan, *Actinidia* is the only group of northern extension, so that it would be specially desirable and important to introduce the different species here, if possible.

ACTINIDIA CALLOSA—LINDL.

Syn: *A. kalomitka*—RUPR.

Hab: Island of Yezo. About Hakodate (Wilford). It also probably extends through the mountains of the southern districts, associated with another species.

A graceful vine like its congeners, with leaves somewhat scattering and very variable in size, often reduced to one inch long and broad, though more generally 1½ to 4 inches long and 1½ to 3 inches broad. In the larger leaved varieties the foliage is abundant and of fine quality. The flowers are few and small, not exceeeding ½ inch in diameter. Though they are more abundant than in *A. polygama*, they are less numerous than in *A. arguta*.

Maximowicz mentions the occurrence of this species in Siberia along the lower Amoor, thus giving it a greater northern range than represented by its distribution in Yezo, and thus also rendering its easy acclimatization here, a matter of considerable probability. It is the only species of the genus in Siberia mentioned by Maximowicz, if we except the next species in the island of Saghalien.

ACTINIDIA POLYGAMA—PLAN.

Syn. : *Trochostigma polygama*—SIEB & ZUC.

Japanese : Matatabi.

Hab : Mountains of central Honshiu and throughout Yezo, also found in the island of Saghalien (Schmidt and Glehn).

A graceful vine with rather loose though fairly rich foliage. The leaves are 2 to 3 inches broad and 2½ to 5 inches long. The flowers are scattering along the stem, frequently single, though more generally in twos or threes; somewhat showy, one inch broad. The fruit, which is a berry, closely resembles that of *A. arguta*, and usually occurs in twos or threes.

In Yezo, this vine is almost wholly confined to the mountainous districts, having been found most frequently at elevations ranging from 2,000 to 3,000 feet. It is rarely or never seen in the bottom lands or on the lower slopes of the foot hills. The high elevation at which it grows, as well as its northern extension, would be tolerably safe guarantees of its hardiness here.

ACTINIDIA PLATYPHYLLA—GRAY.

Syn. : *Trochostigma platyphylla*—SIEB & ZUC.

Hab : Cape Sangar, northern Honshiu, and about Hakodate. (Small).

This would probably prove about as desirable as the first species.

ACTINIDIA ARGUTA—PLANCH.

Syn. : *Trochostigma arguta*—SIEB & ZUC.

Japanese : Kokuwa.

Hab : Kiushiu (*Siebold*) Yezo, about Hakodate (*Max.*). Common through Yezo.

A large, graceful vine; a rather more southern type than the others. but decidedly the best northern representative of the genus. Leaves, dark and shining, three inches long, two broad. Flowers several to many, ½ to ¾ inch broad, white. More showy than in the preceding on account of greater number. Fruit, an edible berry of agreeable taste and flavor.

In its distribution, it is interesting to note that this species, which extends at least to 44° N. lat. is found even to the southern limits of the principal islands (Kiushiu) in latitude 32° N., though it is more abundant through the mountains of central and northern Honshiu and reaches its best development in the island of Yezo, where it is

very generally distributed. Its special habitat there, seems to be the upper valleys and low foot hills. It is seldom seen on the bottom lands of new alluvium, but thrives on the old alluvium and drift of the upper valleys, and delights in the moist soil and shaded retreats of dense woods. It is a luxuriant and rapid grower, very much in general habit like the grape, growing over bushes and stumps and high into lofty trees, to all of which it gives a most pleasing effect. The foliage is of a rich green and dense, and this, together with its habit of growth, would render it a most desirable acquisition as a trellis plant. The white flowers are not very conspicuous or abundant, but so far as they go, are quite attractive. The fruit forms a loose bunch of from 7 to 12 berries. These latter are oblong and flattened, usually from ¾ to 1¼ inches long; of a fine light green with occasional purple tint, which is often much deepened when ripe. The skin is thin, while the flesh is uniform and somewhat juicy. The seeds are small, and thus form no obstacle. The general flavor is sweet and very pleasant when ripe, though there is a slight astringency when green. The fruit is generally collected and sold in the shops in early autumn, the ripening occurring about the time of early frosts, the last of September and first of October. Doubtless this fruit is susceptible of great improvement by cultivation, and if so, it will prove a most desirable acquisition.

The vine, as indeed are all the *Actinidias*, is easily propagated from cuttings; in fact, the whole treatment which we apply to the cultivation and propagation of grapes, may be applied to the kokuwa. There would thus be no difficulty in winter treatment and protection where desirable. So far as known, the first plants were introduced into the United States by my friend Col. W. S. Clark in 1876, through cuttings, and the following year I sent home a large quantity of seed which was successfully planted. Both cuttings and seeds were started at Amherst, Mass., where there are a large number of finely developed vines, which, up to the present time, have proved perfectly hardy. From some of these vines, at an age of five years, a few berries were obtained last year. A vine which promises so much, not only for ornament, but as a new source of fruit, should receive the attention of all those interested in progressive horticulture.

As to the possibilities of its cultivation in Canada, there seem to be reasonable grounds for the belief that it may be successfully introduced, more especially as it has been found possible to mature grapes here and keep the vines through the winter.

NAT. ORD. RUTACEÆ.

A useful and widely distributed family in both tropical and temporate regions. It is represented in Yezo by two genera, *Evodia* and *Zanthoxylum*, both of which are limited in their distribution through northern regions, especially the former. *Evodia* has no representative here, and *Zanthoxylum* is represented in southern Canada by only one indigenous species (*Z. Americanum*) which is found in low ground along streams.

ZANTHOXYLUM PIPERITUM—D.C. JAPANESE PEPPER.

Syn.: *Fagaria piperita*—THUNB.

Japanese: Sansho.

Hab: Mountains of Kiushiu and central Honshiu. About Hakodate and sparingly distributed through southern Yezo.

A low, shrubby tree of no very special ornamental value, but bearing a pungent berry which constitutes the so-called Japanese pepper of commerce.

EVODIA GLAUCA—MIQ.

Japanese: Kise-wata.

Hab: Kiushiu and northward through Yezo.

A tree 20 to 35 feet high, with whitish flowers and nine—foliate leaves about nine inches in length. The hight and general habit of growth make it very much resemble our common butternut. It is therefore not to be considered an acquisition to ornamental resources. The bark contains a very large amount of bright yellow pigment, which is readily extracted and is frequently employed by the Japanese. It may find a more extended use.

NAT. ORD. ANACARDIACEÆ.

This somewhat interesting family of about 450 species, is largely tropical in its distribution, though it also embraces several important species peculiar to temperate regions. The most important Japanese members of this family are included in the genus *Rhus*, chiefly confined to the island of Honshiu and south, though one or two indigenous species appear in Yezo, where also, some of the more desirable and useful of the southern species have been introduced. The European connection of this genus is established through the Caucasus

and southern Russia by *R. coriaria* and *R. cotinus*. More numerously is the genus represented on this continent, there being seven species indigenous to Canada, one of which, *R. toxicodendron* and its variety *radicaus*, unites us directly with the Oriental flora of northern Japan.

RHUS SEMIALATA—MURRAY.

Syn.: *R. Javanicum*—THUNB.

Japanese: Kadsiki.

Hab: Kiushiu about Nagasaki (Oldham). Central Honshiu and Yezo (Max.)

A low, shrubby tree with somewhat graceful foliage. Leaves 8 to 12 inches long; oddly pinnate with 5 pairs of leaflets; the rachis narrowly winged. Might prove a desirable acquisition. Common throughout southern Yezo in the open woodlands.

RHUS TRICOCARPA—MIQ.

Maximowicz mentions this species as growing in Yezo about Hakodate, but it is not known to me.

RHUS TOXICODENDRON—L.

Also: *var. radicans*—L.

Japanese: Urushi.

Hab: Mountainous woods of central Honshiu and about Hakodate (Small and Max.). Abundant through Yezo.

Both the species and the variety are to be met with, growing much as with us. It forms one of the conspicuous features of the forests and has frequently been observed to attain a diameter exceeding four inches, reaching to the tops of lofty trees and spreading to the ends of branches. It is fully as noxious as with us.

NAT. ORD. VITACEÆ.

An important family of tropical and sub-tropical habit, but also represented in northern latitudes by the grape and Ampelopsis. In northern Japan, the family is well represented by two indigenous grapes, one of which is unknown in the New World except in cultivation, the other being our common Fox Grape (*Vitis labrusca* L). This seems to form a curious connection between the Asiatic and North American floras, since it disappears? on the Asiatic conti-

nent, its only representative in eastern Siberia, as recorded by Maximowicz being *V. Amurensis* Rupr, which occurs along the Amoor River. In Europe, the genus is represented by the well known European species of cultivation, *V. vinifera* L.

In Canada there are three well-defined species of *Vitis*—*V. labrusca* L.; *V. cordifolia* Lam; and *V. riparia* Mich., the latter carrying the distribution of the family to its highest northern limits in lat. 52°.

VITIS LABRUSCA—MOUNTAIN GRAPE.

Japanese: Yama budo.

Hab: Kiushiu, central Honshiu, Yezo.

Our common northern Fox grape is abundantly represented throughout the wooded districts of Yezo. The vine, as it clings to the branches of lofty trees and hangs in great festoons, forms one of the most conspicuous and beautiful features of the forest. It often attains great size, one specimen found in 1876 measuring 13 inches in diameter.

VITIS HETEROPHYLLA—THUNB. BLIND GRAPE.

Japanese: Mekura budo.

Hab: Central Honshiu and Yezo.

This vine has now been in cultivation for some little time, under the name of Japanese Ampelopsis, on account of its variegated foliage. It is hardy in New England. The leaves are variegated with white and somewhat variable in form, 3-5 lobed, thin. It is found growing abundantly over the rocks and sand along the banks of streams, or in other similarly warm localities. Its small, somewhat variegated, purple and white berries are quite attractive in Autumn. The genus and family are further represented in southern Japan by the *V. vinifera* L., which has long been cultivated there.

NAT. ORD. CELASTRACEÆ.

Of the 400 species embraced in this family, only about four in all, representing two genera, are to be found in northern Japan. Of these two, *Celastrus* and *Euonymus*, the former appears to be largely isolated, since it does not appear in northern Asia or in European Russia, though it appears on the American continent in the climbing bittersweet (*Celastrus scandens*), which is common all through the woods of Lower Canada and southward.

Euonymus is well represented on the Asiatic continent by four species, whieh are abundant in the Amoor district of south-eastern Siberia, one of which, *E. Alatus*, is probably to be found in Yezo. From the Amoor westward, the genus probably crosses Asia along the southern confines of Siberia into the Urals, and southward into the Caucasus, where the greatest number of species appear; thence through central and southern Russia into Europe. Two species are indigenous to eastern North America, viz.: *E. atropurpureus* and *E. Americanus*, both of which are found within Dominion limits.

CELASTRUS ARTICULATUS—THUNB.

Japanese: Tsuru mume modoki.

Hab: Kiushiu, central Honshiu, and Yezo.

A bushy vine growing 4-6 fcet high and then falling over or climbing on other plants. Flowers green and somewhat abundant, but of no special ornamental value. Fruit scarlet like that of our common bittersweet, *C. scandens*. This vine is found abundantly in the woods throughout Yezo. It is the only northern species, though there are others common in Honshiu and southward. From its somewhat shrubby habit of growth it is easy to train it into very desirable forms, and it would, in all probability, prove quite an addition.

Of the seven species of *Euonymus* known in Japan, only two occur within the limits of Yezo.

EUONYMUS JAPONICUS—THUNB.

Japanese: Isu kurogi.

Hab: Kiushiu (Thunberg), central Honshiu (Savatier), and Hakodate, as well as through Yezo.

A shrubly tree 10-15 feet high, with shining, bright green leaves, and whitish flowers. This species is rather common along the high banks of streams in southern Yezo, associated with the next. It is cultivated in the United States as Chinese box and proves hardy South, though it is treated as a greenhouse plant in the north.

EUONYMUS SIEBOLDIANUS—FR. & SAV. (?)

Syn.: *E. Europeus*—THUNB.

Japanese: Majumi.

Hab: Mountains of Kiushiu and through Yezo. (Small.)

A short shrub rather below the height of the preceding, bearing greenish flowers and orange red fruit. The leaves are ovate, 1½ to

2½ inches long, ½ to ⅞ inches broad. This species is not unfamiliar with us, since it occasionally appears in cultivation as the European spindle tree.

EUONYMUS ALATUS—THUNB.

Syn. : *E. Thnnbergianus*—BL.

Japanese : Ko Majumi.

Hab : Nagasaki, and through central Honshiu. Alpng the Amoor at Ussuri. (Max.)

So far as I am aware, this species is not known in Yezo, though its great northern range shows that it should be there. Three other species are given by Maximowicz as occurring in the Amoor district of Siberia, making it evident that the genus has a strong northern tendency.

NAT. ORD. SAPINDACEÆ.

This widely distributed family embraces several important northern representatives ; those of northern Japan having congeners in both the European and American continental areas. The genera found in Yezo include *Staphylea*, *Æsculus* and *Acer*, of which the latter is by far the most important.

Staphylea finds but limited representation in the northern regions of the Old World, only one species, (*S. Pinnata*, L.,) appearing in the Caucasus and through central and southern Russia. The genus is represented in Canada by the common bladder-nut (*S. Trifolia*), which, however, is very closely allied to and probably identical with the Japanese species (*S. bumalda*) of Yezo.

The genus *Æsculus* is a well known Old World group as represented here in cultivation by our common horse chestnut, *Æ. hippocastanum*, though several species are also indigenous to the western United States. Of the five or more indigenous species, none are properly represented in Canada, except in cultivation. They prove hardy.

By far the most important group of this family, and that in which our interest naturally centres for a variety of reasons, in the genus *Acer* or the maples. These trees find a very wide range through both the Eastern and Western Hemispheres, and more or less directly connect the floras of the two. Of the northern Japanese species, *A.*

Tartaricum and *A. spicatum*, both occur through the sonthern Amoor district, while the former also extends westward through the Caucasus into central Russia. The east North American maples embrace several species, of which five are well represented in Canada. In the sugar maple, *A. saccharinum*, the tree forms find their greatest northern distribution, but this species is confined to Lower Canada, and does not extend north of 49° lat. On the northwest coast, the genus is represented by the large leaved maple (*A. macrophyllum*) and the circinal leaved or so-called vine maple (*A. circinatum*). This latter, which is a beautiful tree now being introduced into cuttivation east, is very closely allied to the Japanese *A. septemlobum*, with which it is in all probability identical.

STAPHYLEA BUMALDA.—SIEB. & ZUC.

Syn.: *Bumalda trifolia*—THUNB.

Hab: Mountains of Japan. In Honshiu about Kamakura (Savatier) and Mountains of Hakone (Buerger) Hakodate (Max) and throughout the woods of Yezo.

A shrub from 6 to 10 feet high with three parted leaves and fragnant, white flowers. It very closely resembles our common bladdernut, *S. trifolia*. It has already been introduced into cultivation in Pennsylvania, where of course it has proved hardy. It may be propagated by layers. In Yezo, where the shrub is abundant, it is found in close, moist woods, running somewhat up the slopes of the foot hills, but chiefly confined to the moist woodlands of the valleys.

ÆSCULUS TURBINATA.

Japanese: Satsinoki.

Hab: Wooded mountains of central Honshiu (Buerger) and Hakone (Savatier). Mountain slopes of Yezo. (Wright.)

The foliage of this species very closely resembled that of our common horse chestnut, *Æ. hippocastanum*. The leaves are 1 foot broad and composed of 7 leaflets. The tree is but sparingly distributed in Yezo. Maximowicz mentions the occurrence of *Æ. Chinensis* at Hakodate, probably only in cultivation.

ACER JAPONICUM—THUNB.

Japanese: Mai gatsu.

Hab: Central Honshiu, about Fujiyama (Thunberg), Yokoska (Savatier), and in Yezo, about Hakodate (Max).

A shrubby species found in the vicinity of Hakodate, growing in the sandy soil of dry hill-sides. Its distribution in Yezo is apparently limited.

ACER PICTUM—THUNB.

Hab: Woody mountains of central Honshiu, about Hakone (Savatier), Yezo, about Hakodate (Max). Abundant throughout Yezo.

A good sized tree of comely form, bearing a rather large, coarsely-toothed and three-lobed leaf. In its size, form, and general habit of growth, it cosely resembles our sugar maple (*A. saccharinum*). The flowers are greenish-yellow and abundant. The sap yields a small percentage of sugar, but not in sufficient quantities to make its collection of value. The wood is highly esteemed for the manufacture of furniture.

ACER POLYMORPHUM—SIEB. & ZUC.

Japanese: Momiji.

Hab: Nagasaki (Max), central Honshiu about Yokohama (Max), Yokoska (Savatier). Some of the many forms which this species assumes are indigenous to and abundant in Yezo. The foliage is exceedingly variable and very beautiful—features which have given the Japanese maples the high and justifiable reputation, as valuable for ornament, which they now bear. The northern forms are embraced in three principle varieties—*palmatum*; *septemlobum*, and *dissectum*.

Flowers red, or deep crimson. Bark close, smooth and ashy grey.

Var. *palmatum*.

Syn.: *A. palmatum*—THUNB.

A low tree chiefly valued for its beautiful cut-leaved foliage. Leaves with 5-6—chiefly 5—narrow lobes, ½ inch broad. This variety assumes a more shrubby, spreading character than the next, but is found with it all through the woods of Yezo. The foliage is more finely cut, but the tree is hardly more beautiful than

Var. *septemlobum*.

Syn.: *A. septemlobum*—THUNB.

A slender tree from 15 to 40 feet high. Leaves rounded, 7-9 lobed, 3-5 inches broad. The wood is of fine grain and handsome, and takes a very fine polish. A very ornamental tree with branches often spreading into flat leafy sprays. Abundant throughout Yezo, and would in all probability prove hardy here.

The *A. circinatum* of the N.W. coast of America, takes its name

from the peculiar manner in which the leaves are rolled in the bud, a circumstance also observed in *A. septemlobum* of Japan. Like the latter, the *circinatum* is a fine tree of slender growth, often clustered, and beautiful foliage. It ranges between latitudes 43° and49° N., and is principally confined to woody mountains skirting the shore; also abundant in the pine forests. It was introduced into England in 1827 by Douglas. The wood is close grained, tough, and takes a high polish. All these characters will be seen to be shared in common with the Japanese variety, with which it is doubtless identical, and thus forms a direct link between the Oriental and Western maples.

Var. *dissectum.*

Syn.: *A. dissectum*—THUNB.

A low, shrubby tree with beautiful foliage which assumes a most pleasing scarlet and crimson color in autumn. Leaves palmately several parted, the lobes linear or linear lanceolate. A most desirable variety, but it is doubtful whether it would prove hardy here, as its greatest northern range is about Hakodate in northern Yezo, while it is more abundant further south.

A. TARTARICUM—L.

Syn.: *A. gynnala*—MAX.

Hab: Wooded mountains of central Honshiu, and plains of Yezo. Amoor district of Siberia (Max).

A fine, round-headed tree, 20-25 feet high. Introduced into England in 1759, and now cultivated in many of the gardens of Europe, and America.

ACER SPICATUM—LAM.

Syn: *A. Ukurundense.*—MIDD.

A. Dedyle.—MAX.

This species is common in the mountains of central Honshiu (Fr. and Sav.), and also in the southern Amoor district of Siberia (Max). This range would indicate that it must also occur in Yezo, though I have never seen it there. Maximowicz describes it as a tree 20-30 feet high; leaves 5-lobed; the fruit persisting through the winter; heartwood yellow. It is interesting to note that this species is also common to the moist woods of the northern United States and Canada, but the forms are materially different. In our form the leaves are 3-lobed (rarely 5), and the tree is reduced to a tall shrub growing in clumps.

NAT. ORD. LEGUMINOSÆ.

This large and important family is widely distributed through tropical and temperate regions, and is well represented throughout Japan. In Yezo the species are nearly all herbaceous, though there are two important representative, the one (*Sophora Japonica*), a tree, and the other, (*Wistaria Chinensis*), a vine; the former indigenous and the latter introduced.

SOPHORA JAPONICA—L. SOPHORA.

Hab: Kiushiu (*Franchet and Savatier*). Throughout Yezo.

A tree 20 to 35 feet high, bearing loose panicles of yellowish flowers of a somewhat disagreeable odor, much resorted to by insects. Leaves rather pale green, bearing 10 to 14 leaflets: flowers in August. This might prove a desirable species in cultivation; in fact it is already favorably known and proves hardy in New England. It is the only representative of the genus in Yezo, though both *S. platycarpa* Max. and *S. angustifolia* Sieb. & Zuc., are commonto more southern districts.

The genus passes to the Asiatic continent through *S. flavescens* L., which is well represented in the Amoor district,thence through northern Mongolia (?) into the Caucasus, where this last species is replaced by *S. alopecuroidis*.

Though the genus is represented by one or two species in the west and south-west of the United States, it has no alliance with the Canadian flora.

WISTARIA CHINENSIS—SIEB. ET ZUC.—WISTARIA.

Syn: *Dolichos polystachyus*.—THUNB.

This fine vine, now found in Yezo in cultivation, has been introduced from China. It proves perfectly hardy, and reaches great size at Hakodate. I do not know if it is growing further north, and doubt if it would be possible, as the temperature changes somewhat rapidly after crossing the mountains just north of Hakodate.

NAT. ORD. ROSACEÆ.

Of this widely distributed and very useful family, there is a fair representation in the flora of northern Japan, including trees, shrubs and herbs, though the two latter largely predominate. The genus

Prunus, of which we may enumerate at least three species, is well represented both in other parts of the Old World and in the New World, in some cases identical species being found to have very wide distribution. *P. Maximowiczii* Rupr is noted by Maximowicz as occurring all through the lower Amoor district of Siberia, as also the *P. padus* L, which reaches a high northern range, being noted by Ermann in Kamtschatka and thereby extending the genus to at least 52° N. lat. Ledebour mentions this as the only species of Kamtschatka, though his enumeration of distribution shows a decided increase in number of species towards the west, from 2 to 3 being found through the various districts of Siberia, 12 in the Caucasus, and from 6 to 8 species in the various parts of southern and central Russia. In Canada there are seven representatives of the genus. Most of them are found either along the southern boundary or in the coast regions, though the wild plum, *P. Americana*, Marshall, (*P. nigra* Ait.: *P. hiemalis* Ell.: *Cerasus nigra* Loisel) carries the range of distribution well to the north and westward, since in occurs as far up as Hudson's Bay (*Michaux*) and west to the 100° meridian. (*Macoun.*)

In the southern portion of Japan, the genus has long been represented by the plums, as also by the peach and several kinds of cherry, while the recent efforts to introduce desirable fruits from abroad have resulted in the distribution, through the northern districts of Yezo, of many varieties of plums, cherries and peaches; a very interesting instance of Old World people seeking in the New World for improvements upon stock which originally came from them.

The apples and pears are fairly well represented in Japan, though there are but few in the island of Yezo where the *Pyrus speciabilis* Ait is the chief, if not the only indigenous species, though both the apple (*P. Malus*) and pear (*P. communis*) are now common in cultivation. The genus is represented in the Amoor district by four species (*Maximowicz*), of which *P. baccata* L. is a conspicuous member. Of these, also, *P. sambucifolia* Chamiss, is found in Kamtschatka, giving the greatest northern extension. Like the plums, the apples and pears increase in number of species to the westward through the interior of Siberia. *P. rivularis* is found on the island of Sitka in Alaska, thence down the coast to lower Oregon, and inland from the coast for at least 90 miles. It is also common on the coast islands.

The Canadian species include five others in all, but this latter (*P. rivularis*) is by far the most northern representative. *P. sambucifolia*

Cham., which we have seen to be an Old World species, is found in the British Possessions as far northward as the upper end of Lake Winnipeg. (*Bell.*)

The thorns, represented in Yezo by *Cratægus alnifolia*, Sieb. & Zuc., are here found to number eight, the most of them extending along the southern boundary, though *C. Douglasii* Lindl. (*C. Sanguinea*, var. *Douglasii*, Torr. & Gray, *C. Sanguinea*, Pall) is found on Vancouver's Island and as far north as latitude 55°. The Old World speeies are somewhat more numerous, and embrace the last mentioned species (*C. Sanguinea* Pall) which occurs through central Siberia. The genus disappears, however, in eastern Siberia and Kamtschatka, but reaches its highest limits in the Caucasus where there are twelve species in all.

PRUNUS PSEUDO-CERASUS—LINDL.

Japanese: Yama Sakura.

Hab: From Yokohama, north through central Honshiu (Max). Abundant in the woods of Yezo and much prized by the Japanese, both for its wood and for its flowers. These latter are salted and dried and extensively used as the source of a pleasantly fragrant cherry tea. The flowers are so abundant and handsome, that the tree has gained great celebrity throughout the country, and the "Sakura" are annually visited by thousands of admirers.

PRUNUS MAXIMOWICZII—RUPR.

According to Maximowicz this species is found in the vicinity of Hakodate, and probably through the central region of the island also.

PYRUS SPECTABILIS—AIT. Chinese flowering apple.

Japanese: Todo-nashi.

Hab: Through central Honshiu and about Hakodate (*Wright*). Also through the southern portion of the island of Yezo.

The principal representatives of this genus are native to southern and central Japan, where they are largely cultivated. Like the cherries and plums, however, apples and pears are now successfully cultivated in Yezo, there being several large orchards in various parts of the island, and fresh tree are annually distributed.

CRATŒGUS ALNIFOLIA—SIEB. & ZUC.

Japanese: Hakari momi.

Hab: Through Yezo, about Hakodate (Max). A low tree very much like our common thorn. It might serve as an additional source of material for high hedges and screens.

NAT. ORD. SAXIFRAGACEÆ.

A family well distributed through temperate and cold regions and well represented in Yezo by shrubby and climbing forms, embracing *Deutzia*, *Schizophragma* and *Hydrangea*.

The genus *Deutzia* is represented here only in cultivation by species introduced from China and Japan. *Schizophragma* has no representative, and has been known to America in cultivation for a very few years only. The *Hydrangeas* now common here in cultivation, are represented by indigenous species only in more southern latitudes. On the Asiatic continent, *Deutzia* is represented well to the north, in *D. parviflora* Bge. of the southern Amoor, thus giving the genus a much greater northern range than represented by its distribution in Yezo.

SCHIZOPHRAGMA HYDRANGIOIDES—SIEB. & ZUC.

Japanese: Tsuru demari.

Hab: Mountain woods of Kiushiu, Hakone and Yezo.

A very fine vine with showy foliage and flowers. In its distribution it is most abundant in Yezo, where it is very common in the woods of the valleys, rarely or never ascending the well-drained slopes. The vine often reaches great size, both with regard to length and diameter. It ascends trees much after the manner of the ivy, by developing numerons rootlets which penetrate the outer bark of the tree and thereby secure a very firm hold. The bark is very loose and shaggy. As an ornamental climber this vine has a just claim to consideration, both on account of its rich and heavy foliage, and the showy flowers. It was first introduced from Japan by Peter Henderson, I believe, though large quantities of seed were sent home by myself in 1878. It has been growing since that time at Amherst, Mass., where it has proved quite hardy, but it is found to be somewhat unsatisfactory on account of its very slow growth. Nevertheless, it is well worthy of introduction here on trial.

HYDRANGEA HORTENSIS—D.C.

Syn.: H. *Azisai* & H. *otoksa*—SIEB. & ZUC.

Var. *acuminata*—GRAY.

H. *acuminata*—SIEB. & ZUC.

Japanese: Gasuko.

Hab: Kiushiu and central Honshiu. Common about Hakodate and in the mountains about Lake Konoma (Max.)

Flowers a fine blue, appearing in July and August. Found sparingly distributed all through the lower slopes of the upper valleys. Widely cultivated.

Var. *Azisai*—GRAY.

Syn.: H. *Azisai*—SIEB. & ZUC.

Japanese: Azisai.

Hab: Yezo, about Hakodate.

A variety bearing fine, large blue flowers in a much looser cyme than the preceding, and not so showy.

HYDRANGEA PANICULATA—SIEB.

Japanese: Nori noki.

Hab: Common from Kiushiu to Yokohama, and in Yezo about Hakodate (Max).

Frequently appears in cultivation. Flowers white or light rose, in a long and loose cyme.

DEUTZIA SCABRA—THUNB.

Japanese: Kawa utsugi.

Hab: Kiushiu and Yokohama to Hakodate and through northern Yezo.

A fine shrub bearing abundant flowers. Found commonly through the valleys of Yezo. Somewhat known to cultivation here.

NAT. ORD. CAPRIFOLIACÆ.

Of the Japanese representatives of this family, both the Viburnums and the elders appear to have wide distribution, both in allied and identical species. *Sambucus pubens* of Yezo appears in all the littoral regions of the Amoor district, and extends across the continent through central Siberia and Russia. It finds its greatest northern range in Kamtschatka, and passes over to the North American continent through the Island of Sitka, thence descending the west coast (?) and into Canada where it is abundant. Two other species (*S. ebulus* L. and *S. nigra* L.) accompany *S. pubens* on the continental areas of Asia, while here, *S. Canadensis* is the only other representative of the genus.

The Viburnums are very well represented in Yezo, and fairly well on the continent of Asia. The *V. opulus* extends from Arctic Russia

eastward through central Siberia to the Island of Yezo. On the American continent, the Japanese species, *lantanoides* and *opulus* are both indigenous. The genus has a high northern extension, entering the continental area in *V. pauciflorum* through the island of Sitka, thence southward.

Of the Diervillas, there appears to be no representative in north continental Asia, and the Yezo species is probably the most northern extention of the genus in the Orient. In the Dominion of Canada, the genus is represented in the cultivated Weigelias and also in the indigenous *D. trifida*.

SAMBUCUS PUBENS—MICH.
Syn.: *S. racemosa*—L.
S. pubescens—PERS.
S. racemosa var. *pubens*—MIDD.
Japanese: Tata.
Hab: Honshiu and common throughout Yezo.

This shrub is the same as our common North American species, which is found to extend from New England to Russia, Siberia and Japan. Maximowicz notes it as occurring in the entire Amoor district, the leaves and branches becoming more pubescent in the littoral regions.

VIBURNUM LANTANOIDES—MICH.
Syn.: *V. plicatum*—THUNB.
V. tomentosum—SIEB. & ZUC.
Japanese: Munekari.
Hab: Central Honshiu (Max), Hakodate and through Yezo.

This is the same as our familiar *V. lantanoides*. It occurs through Yezo, most generally on the slopes of mountains, where it has been observed at an elevation of 2,000 to 2,500 feet, rarely at lower levels. It should be cultivated.

The other representatives of this genus in Yezo are:

VIBURNUM LANTANA—L.
Var. *Japonica*.
Hab: Hakodate. (Fr. & Sav.)

VIBURNUM WRIGHTII—MIQ.
Hab: Mountains near Hakodate (Fr. & Sav.)

VIBURNUM OPULUS—L.
Hab: Yezo (Fr. & Sav) and throughout the Amoor district (Max.)

DIERVILLA VERSICOLOR—SIEB. & ZUC.
Syn.: *D. Japonica*—D.C.
Weigelia Japonica—THUNB.
Japanese: Tani usugi.
Hab: Mountains of Japan.

A shrnb 6 to 8 feet high, with small leaves and numerous flowers in fives. This species, now well known in cultivation, is represented by three species in Honshiu and southward. It is sparingly distributed through Yezo, being found by me only on the eastern slopes of the volcano Tarumai.

NAT. ORD. ERICACEÆ.

The heath family as represented in the rhododendrons is but sparingly distributed through northern Japan, though it is well represented through the northern regions of continental Asia. The *R. indicum* of Yezo has no proper representation in Siberia, though the genus is carried northward into Kamtschatka where the highest limits of distribution are reached, and thence through the Alcutian Islands and Alaska into America, by *R. Kamtschaticum*, Pall. There are no proper representativəs of the former species in Canada unless we except *R. viscosum* (*Azalea viscosa*) and *R. nudiflorum* (*Azalea nudiflora*) which are cited by Gray as occurring along the southern borders.

RHODODENDRON INDICUM—SAV.
Syn.: *Azalea Indica*—L.
Var. *Kaempferi.*
A. Kaempferi.
Japanese: Kirisima sutsusi.
Hab: Kiushiu to the north, about Hakodate (Sav. & Fr.) and through southern Yezo.

A low shrub resembling our common swamp, honeysuckle (*R. nudiflorum*). Found on the slopes of Mt. Inewa at an elevation of 3,000 feet.

NAT. ORD. STYRACACEÆ.

The storax family, which is represented in northern Japan by one genus and species, probably reaches its highest northern limits in that district. On our own continent, all the eastern members of the family

are of a southern type, and are hardly spontaneous north of Virginia. Japan is represented by the genus *Styrax*, of which there are three species indigenous to the eastern United States, but none within the limits of Canada, and it thus might prove of special interest if the Japanese species could be successfully introduced here.

STYRAX JAPONICUM—SIEB. & ZUC. STORAX.

Japanese: Tsima.

Hab: Mountain woods throughout Honshiu (Fr. & Sav). Common in the woods of Yezo.

This is a somewhat ungainly, shrubby tree, 12 to 15 feet high, with stiff and angular branches. Leaves clustered, 1 to 2 inches long, ½ to 1 inch broad. Flowers white. This tree is common in the rocky woodlands along the base of the foot hills and in the more elevated valleys. It has already been introduced into the United States at the Arnold Arboretum, and appears to be doing well.

NAT. ORD. LAURACEÆ.

The distribution of this family is chiefly tropical, though it is well represented in temperate climates. The members are characterized by being more or less spicy and aromatic. The genus *Lindera* represents the family in northern Japan, through *L. sericea*, which, though not found here, is well represented in our wild allspice, *L. benzoin*.

LINDERA SERICEA—BLUME.

Syn.: *Benzoin sericeum*—SIEB. & ZUC.

Japanese: Kuro moji.

Hab: Yokoska and Yokohama. Hakodate and Yezo.

This shrub is the only representative of the genus in Yezo, though there are eight other species common to Honshiu and southern Japan. The plant is interesting as being the source of the spicy and fragrant tooth-picks so commonly in use by the Japanese. Advantage has recently been taken of the presence of the volatile oil in the bark, to extract it by distillation for use as a perfume, but its great and disagreeable pungency renders it wholly unfit for this purpose.

NAT. ORD. ELEAGNACEÆ.

This remarkably small family is well distributed through the temperate zone of both Asia and America. The genus *Eleagnus*, represented in northern Japan by *E. umbellata*, Thunb., appears in western Asia and in Europe through *E. hortensis*, and in America through the silver berry (*E. argentea*) which is often brought into cultivation, and is the indigenous representative of the genus within the Dominion, being found through the Rocky Mountains and as far as the Saskatchewan.

ELEAGNUS UMBELLATA—THUNB.

Japanese: Masiro gumi.

Hab: Kiushiu, central Honshiu (Max) and through Yezo.

The only (?) northern species, though there are five other species representing the genus in the south.

NAT. ORD. URTICACEÆ.

A very small family embracing 150 species of north temperate distribution, among which are several of economic and ornamental value. Of these, the genus *Ulmus* is the most important in the northern districts, and finds wide distribution. Both the *U. campestris* and the *U. montana* of Yezo are to be met with through the lower Amoor district of eastern Siberia, and they are found extending across Asia into Europe to the Atlantic coast, and even into America through cultivatihn. The indigenous American and Canadian species of northern distribution, are but two in number, the American elm (*U. Americana*) and the red or slippery elm (*U. fulva*). The former reaches its highest northern limit—which is also that of the family—west of Lake Winnipeg in north latitude 54° 30′.

The Plane tree (*Zelkowa* or *Planera*) of Yezo, is not otherwise represented in northern Asia until the Caucasus districts are reached. It has no representative in Canada and the north. The mulberry has a much wider distribution, more nearly like that of the elms. Of the two species found in Yezo, the one (*M. alba*) is exotic—being hardy only in south Japan, and even introduced there from China—the other (*M. nigra*) indigenous in the north. The former finds a continental, Asiatic distribution through China, west through central Asia to the Caucasus and thence into Europe through southern

Russia. This wide distribution has been developed through cultivation, which has also brought the species into America. The latter has a somewhat similar distribution, though it carries the genus up to a higher northern limit than does the *M. alba*. The only indigenous representative we have of this genus is to be found in *M. rubra*, the red mulberry, which, however, is not indigenous to Canada, except, perhaps, in the extreme south, as it reaches its northern limit of distribution about the head of Lake Champlain.

ULMUS CAMPESTRIS—SM. EUROPEAN ELM.

Syn.: *U. vulgaris*—PLANCH.
U. glabra—MAX. & RUPR.

Japanese: Kobuniri.

Hab: Hakone, central Honshiu and throughout Yezo. Also through lower district of Siberia (Max).

This well known elm is found throughout Yezo and serves as a conspicuous feature of the forests. Maximowicz refers to two forms, var. *denudata* (*vulgaris* Led), and var. *suberosa alata* (*suberosa* Led), both of which are to be met with in Yezo, and they are also spoken of by Maximowicz as occurring on the lower Amoor. The root of *U. campestris* becomes very porous when well dried, and because of this and the fact that it is not too soft, while it is readily inflammable, the Ainos make use of it for the production of fire by the old method of fraction—the rapid rotation of one stick upon another.

ULMUS MONTANA—WILD.

Var. *laciniata*—TRAUTV.

Syn.: *U. major* var. *heterophylla*—MAX. & RUPR.

Japanese: Ohiyo.

Hab: Mountain woods of Yezo. Lower Amoor (Max).

A fine tree 40 to 60 feet high, with large and rather dense foliage. Leaves obovate, three lobed. The bark is very fibrous and largely used by the aborigines in northern Japan and Siberia as a source of material for the manufacture of cloth, of which their clothing is almost exclusively made. The tree is widely distributed through the woods of Yezo, being found on the alluvium of the upper valleys and running up the mountain slopes for a considerable distance.

ZELKOWA KEAKI—SIEB.

Syn.: *Planera acuminata*—LINDL.
Planera Japonica—MIQ.

Zelkowa acuminata—PLANCH.
Chorchorus hirsutus—THUNB.

Japanese: Keaki.

Hab: Woods of Kiushiu, Hakone and central Honshiu. Also found in Yezo (Bird).

A fine, large tree, but not very abundantly distributed through Yezo.

MORUS ALBA—L. WHITE MULBERRY.

Japanese: Kuwa.

Introduced from China and widely cultivated throughout Japan. Of recent years only, introduced to Yezo and not yet acclimated. Doubtful if it ever becomes hardy. Thus far, the trees have been killed to the ground each winter.

MORUS NIGRA—L. BLACK MULBERRY.

Japanese: Kuwa.

Well distributed throughout Yezo, but found chiefly in the upper valleys, which it follows up to an elevation of 2,000 feet. It is now largely used, though inferior, for feeding silk worms as a substitute for the more delicate, but as yet unacclimated white mulberry.

NAT. ORD. JUGLANDACEÆ.

The walnut family is about equally divided between Asia and America, in natural distribution, though this has been somewhat modified through the introduction into European cultivation of the Asiatic species (*Juglans regia*). This species is also found in the island of Honshiu of southern Japan, but the northern species are embraced in *J. Sieboldiana* (*Max*) and *J. cordiformis* (*Max*) of which the former is now abundantly distributed. On the Asiatic continent, the walnuts are represented in the Amoor district, which gives them a higher northern range, by *J. Mandshurica*, (*Max*,) and *J. Stenocarpa*, (*Max*). *Juglans nigra* L. does not appear in the north of Asia until the Caucasus and Asia Minor are reached.

Our representative of this genus is the butternut, *J. cinerea*, which just finds its northern limit within the Dominion.

JUGLANS SIEBOLDIANA—MAX.

J. nigra—THUNB.

J. mandshurica—MIQ.

Pterocarya sorbifolia—MIQ.

Hab: Kiushiu, Yokohama, Hakodate and through Yezo.

This tree is found abundantly distributed through the woods of Yezo, and is one of the most highly prized timber trees, rising to a good height with a fairly straight and clear trunk. The wood, which is somewhat darker (?) than that of *J. regia*, is highly prized for cabinet work and indoor finishing. It is not uncommon for the principal woodwork of house interiors, to be composed chiefly of this material, large timbers often being introduced into the structure. The grain is about the same as that of our black walnut (*J. nigra*), but the wood is somewhat softer.

NAT. ORD. CUPULIFERÆ.

This valuable though rather small family is somewhat generally distributed through the northern hemisphere. The oaks are represented in northern Japan by at least three species, and in southern Japan by several species which furnish more valuable and durable timber, the difference in the wood being about equivalent to the difference which we observe between the red oak (*Q. rubra*) of the north, and the live oak (*Q. virens*) of the south. In fact, Yezo may be regarded as about the northern limits of growth, since in Siberia, Maximowicz makes mention of none in the Amoor district, and the most northern species cited by Ledebour is the *Q. mongolica*, Fisch., found in northwestern Mantchuria, about 52° N. lat.

On our own continent the oaks are abundantiy represented, but chiefly in the middle and southern States, though a fair number are indigenous to Canada, including the bur, red, gray and white oaks, and possibly also the black oak, which extends at least as far as northern New Hampshire. Of these, the bur oak (*Q. macrocarpa*), reaches the highest limit, about 53° 30′ N. lat. The red oak (*Q. rubra*) and gray oak (*Q. borealis*) find their northern limit at about 48° N. lat., while the most southern of all, the white oak (*Q. alba*) is not found north of 46° 30′. All of these enter Canada in the southeast and do little more than gain a footing on the southern borders.

The beeches are represented in Japan by the Old World species, *F.*

sylvatica L., which is found abundantly distributed through central and southern Europe. Its only representative here is the American beech, *F. ferruginea* Ait. (*F. sylvestris* Mich.) which is found in south-eastern Canada, reaching its northern limit of distribution at about 47° 30′ N. lat.

The chestnuts, well represented in Yezo, though by only one species (*C. vulgaris*, Lam.), is found narrowly distributed, being largely confined to the Caucasus and wanting all through Siberia, thus making an important break in its distribution. The genus is barely represented in Canada, *Castanea vesca*, var *Americana*, being the only representative, which, it is interesting to observe, is closely allied to the Old World species. Its northern limit of distribution hardly more than enters the Dominion along the north shore of Lake Erie, touching the parallel of 44°.

QUERCUS DENTATA—THUNB.

Japanese: Kashiwa.

Hab: Mountain woods from Fujiyama through Honshiu, north to Yezo.

This fine tree is found abundantly through Yezo on the low hills and well drained slopes. It is the source of much valuable timber, and at present supplies lumber of very large dimensions, the virgin forests not yet having been removed.

QUERCUS SERRATA—THUNB.

Japanese: Sasakusi.

Hab: Kiushiu and mountains of Honshiu and Yezo.

This tree is nearly as abundant in Yezo as the preceding, and though not so large, it is also an important source of timber.

QUERCUS GLANDULIFERA—BLUM.

Japanese: Konara.

Hab. Kiushiu, central Honshiu and Hakodate (Max).

Common through Yezo. The oaks are chiefly found in the more southern islands, where there are several important species furnishing timber more valuable than do those of the north.

FAGUS SYLVATICA—L.

Hab: Throughout Yezo. Jap. Buna

This fine tree, so well known, is found commonly through the upper valleys and along the lower slopes of the foot hills. Small also

mentions *F. Sieboldii* Endl. as occurring in Yezo, as well as in the mountains of Kiushiu and Honshiu, thus giving to this species a tolerably wide range in latitude.

CASTANEA VULGARIS—LAM.
Syn.: *C. vesca*—GÆRTN.
C. sativa—MILL.
C. Japonica—BL. MUS.
Fagus castanea—THUNB.
Japanese: Kuri.
Hab: Yezo.

This representative of our common chestnut is found somewhat abundantly along the lower slopes of the mountains and on nearly all the low hills. The fruit is highly esteemed by the Japanese as food, the nut being of large size. The wood is also largely used in the manufacture of furniture and cabinet work.

NAT. ORD. BETULACEÆ.

A family widely distributed through the north temperate zone and forming a direct connection between the New and Old World floras. The three species of *Alnus* in northern Japan, are represented by the same number in Siberia and Russia, among which is the *A. incana* of our own region. They are distributed from Kamtschatka through central Siberia and southern Russia. On the other hand, in North America, the genus is represented in Alaska (*Sitka*) by *A. rubra* Bon) and in Canada by five species, including the *A. viridis* of Yezo, which latter has the greatest northern extension of them all (*Sitka*), and which unites the Asiatic and North American floras.

The birches (*Betula*) are represented in both Asia and North America by the white birch (*B. alba*) which is a widely distributed and useful tree. The distribution of the genus in Asia is found to extend entirely across the Asiatic and European continents, becoming more abundant in Kamtschatka and Mantchuria and the elevated lands of northern Siberia. On the American continent, the northern limit is defined by *B. papyracea*, which extends from N. lat. 67° on the McKenzie River, southward to 51°, when it reaches the Atlantic coast (*Bell*). The *B. alba* and *B. lutea* both serve as an important link with the Asiatic forms.

ALNUS VIRIDIS—D. C. ALDER.

Hab: Common in moist woods of the elevated lands of central Honshiu, about Nikko and in Yezo.

ALNUS FIRMA—SIEB & ZUC.

Japanese: Fari Yanagi.

Hab: Common in wet places near ponds and streams of central Honshiu and through Yezo.

ALNUS MARITIMA—NUTT.

Japanese: Huri noki.

Hab: Found in the coast regions of Honshiu, about Yokohama and north, and sparingly in Yezo.

BETULA ALBA—L. var TAUSCHII—FR. & SAV.

Syn.: *B. alba*—THUNB.
B. Japonica—SIEB.
B. alba var. *Japonica*—MIQ.

Japanese: Mine-bari.

Common throughout Yezo in the upper valleys along the base of the foot hills. A tree very closely resembling our common white birch.

BETULA LENTA—WILD.

Japanese: Kawara buna.

Hab: Found sparingly in the mountains of Kiushiu (Fr. & Sav.) and abundantly through Yezo, where its distribution is pretty much the same as here.

Betula ulmifolia, Sieb. & Zuc., and *Betnla Maximowicziana*, Regl., are both common through Yexo according to Maximowicz.

NAT. ORD. SALICACEÆ.

In this small family of high northern distribution, there are several representatives in Yezo, both of willows and poplars. That which claims our special attention, however, is the poplar, *Populus tremula* L. This same species is found running across the Asiatic continent through Mantchuria and southern Siberia, thence up into Arctic Russia. Its northern range is not so great as that of its congener, *P. alba*, or white poplar, which is found as a good-sized tree 40 feet high, with a diameter of 4 feet, in the Amoor district, thence running

into Kamtschatka. The continental distribution shows that the genus is represented in Kamtschatka by two species, but that the number increases towards the west, where seven appear in western and central Siberia.

In Canada, the genus is represented by *P. balsamifera* L. (*P. suaveolens* Fisch) which is also common to the Amoor district of Siberia, and appears in Kamtschatka together with *P. alba*. Here, it reaches northern limits west of Hudson's Bay at about 66°. Four other species are ennmerated by Hooker as occurring within Dominion limits.

POPULUS TREMULA—L. POPLAR.

Japanese: Yome fusi.

Hab: Central Honshiu and Yezo. Amoor district of Siberia. (Max.)

Tree 40 feet high, often attaining a diameter of 4 feet. Quite common through the upper valleys of Yezo, along the banks of streams.

NAT. ORD. CONIFERÆ.

This valuable and widely distributed family has several important representatives throughout Japan. The spruces (*Abies*), which there serve the purpose which the pines do with us, find abundant representation across the entire European and Asiatic continent and connect the flora there, directly with our own, through high northern limits of distribution. Within British North America, this northern range is probably carried to the highest latitude by *A. alba* which extends to 68′ 30′ N. at the mouth of the McKenzie River (*Bell*). A direct connection is established between our spruces and those of Japan, through *A. Menziesii*, which, on this continent, is found in northern California, about Cape Disappointment and eastward to the Rocky Mountains.

The arbor vitæs are represented here by our white cedar, *Thuja occidentalis* Mich., and the larches by the common American larch, *Larix Americana* L. The ginko (*Salisbur.a adiantifolia*, Smith), the cryptomeria (*Cryptomeria Japonica*, Don) and the *Torreya nucifera*, Sieb. & Zuc., have no proper representatives here, the latter being represented only by the southern *T. taxifolia* which attains a height of 20 to 40 feet.

The yew of northern Japan (*Taxus cuspidata*) finds a representative in both Europe and America in the *T. baccata* L. and *T. brevifolia*, Nutt. respectively, the latter occurring within the Dominion, being found as far north as Nootka Sound, where it attains a height of 40 to 60 feet.

The pines are numerously represented, and in the *Pinus banksiana* the northern limit of distribution is carried to about 67° N. lat. (*Bell.*)

SALISBURIA ADIANTIFOLIA—SMITH.

Syn. . *Ginko biloba*—L.

Japanese: Ginko.

Hab: Throughout central Japan.

This fine large tree is easily recognized by its two-lobed, fan-shaped leaves which bear a strong resemblance to the divisions of the frond in maiden hair ferns, whence the specific name. It is commonly found in gardens, and is now to be met with in cultivation in Yezo, where it proves hardy. Of late years, it has become familiar to cultivation in Europe and America. Thus far it has proved hardy, even so far north as Montreal, where a small tree may be found in the garden at McGill College. It is a most desirable acquisition wherever it proves hardy.

The Japanese name refers to the white seeds which are believed to promote digestion, on which account they are largely eaten, though with caution, as they are said to produce a peculiar intoxication and even death.

TORREYA NUCIFERA—SIEB & ZUC.

Syn.: *Taxus nucifera*—KÆMPF.

Hab: Kiushiu, Yokohama and abundant in Yezo.

This low shrub is found abundantly through Yezo on the well drained slopes of foot hills, which it ascends to an elevation of about 1,000 to 1,500 feet.

TAXUS CUSPIDATA.—SIEB & ZUC.

Japanese, Mome-noki.

Hab: Mountain ranges of Honshiu and Yezo.

A rather fine, low tree, much prized by the Japanese for ornament. It is very commonly distributed through the wooded plains of Yezo, rarely ascending the mountains. The tough wood is used by the Ainos for bows, as was that of its congeners by the early Greeks.

CRYPTOMERIA JAPONICA—DON.

Syn.: *C. dacryoides*—ZEITCH.

C. elegans—ZEITCH.

Japanese: Sugi.

Hab: Kiushiu, Nagasaki, and in Yezo about Hakodate.

This very fine tree occurs naturally in the more southern islands of Japan, though it was introduced into Yezo some years (50) since, where a plantation has been carefully preserved on the north-eastern slope of Hakodate Head, an old volcanic formation. The special use now made of this grove, is as a source of material for ships' spars, to which purpose the very straight, tall and high branching trees are admirably adapted. The wood is very highly prized for a variety of purposes. The packing cases in which goods are shipped abroad are largely made from the wood of this tree. It also furnishes the material for the lacquered wooden ware, for which it is valuable, on account of its lightness.

Cryptomeria is now cultivated to some extent in the middle States. It is regarded as not hardy north.

THUJA ORIENTALIS—L.

Syn.: *Biota orientalis*—ENDL.

Japanese: Konote.

Hab: Mountain ranges of central Honshiu, Yezo.

A very desirable small tree, introduced into Yezo for hedging, where it has proved hardy. It has been successfully introduced into the United States for the same purpose, though it is regarded as not hardy far north.

LARIX LEPTOLEPIS—GORD. LARCH.

Japanese: Fusi matsu.

Hab: Central Honshiu, Hakone, Hakodate.

PINUS PARVIFLORA—SIEB & ZUC.

Japansee: Goyu-matsu.

Hab: Northern Japan and Yezo.

A straggling, low tree, much prized by the Japanese for ornament and also used by the gardeners for producing the dwarf pines. Chiefly found in Yezo in cultivation, but also found sparingly in the wild state about Hakodate.

ABIES POLITA—SIEB & ZUC.

Syn.: *Pinus abies*—THUNB.

Japanese: Todo matsu.

Hab: Mountains of central and northern Japan. Yezo.

A fine tree with a very straight trunk, and a valuable source of timber. The wood is to the Japanese about what white pine is to us, though the grain is not so fine. In its cultivation, it is found on the lower slopes of the foot hills and covering the more elevated and thoroughly drained plains. Its range in altitude is quite limited, its greatest elevation found by me being 2,500 feet, though only sparingly. It appears to thrive best at an altitude of about 1,000 to 1,200 feet. It is commonly associated with

ABIES YESOENSIS—SIEB & ZUC.

Syn.: *Abies Menziesii*—LOUD.

A. microsperma—LINDL.

Japanese: Yezo matsu.

Hab: Elevated regions of central Honshiu and Yezo.

This spruce is very abundantly distributed throughout Yezo, where it occupies large tracts. It is more abundant than the preceding, but the grain is coarser and its range of distribution is much more elevated. Indeed, its lowest limits occur a little within the highest limits of distribution of *A. polita*. It has been found abundantly at elevations ranging from 2,000 to 4,000 feet. Like *A. polita*, it is a very important source of timber.

CATALOGUE

OF

APPLE-TREES IMPORTED IN 1870

FROM

ST. PETERSBURG, RUSSIA,

BY THE

UNITED STATES DEPARTMENT OF AGRICULTURE,

Scions of which have been distributed under the following numbers.

No.	RUSSIAN NAMES.	TRANSLATION.
†* A 1	Astrachaner, Rother	Red Astrachan.
" 2	Weisser Calville, Sommer	White Summer Calville.
* " 15	Süssapfel von Toenarius	Von Toenarius Sweet apple.
* " 44	Astrachaner, Weisser	White Astrachan.
* " 54	Luikenapfel	Luiken apple.
* " 60	Anasapfel, Rother	Red Duck apple.
* " 61	Edler Rosenstreifling	Noble Redstreak.
* " 68	Champagner, Früher	Early Champagne.
* " 69	Sommer Birnapfel	Summer Pear apple.
" 70	Winter Birnapfel	Winter Pear apple.
* " 105	Graftensteiner, Russischer	Russian Gravenstein.
* " 122	Borsdorfer Revaler	Borsdorf Revel apple.
" 128	Schafnase	Sheepnose apple.
* " 153	Skvoasnoi Nalin	Transparent Juicy apple.
* " 157	Belui Nalin	Juicy White.
* " 159	Limonoe	Lemon apple,
* " 161	Langerfeldskoe	Longfield's apple.
* " 162	Buschbon	Buschbon.
* " 164	Polosatoe Heidorns	Heidorn's Streaked.
* " 166	Aport Letny	Summer O'Porto apple.
* " 167	Scholtoe Sladkoe	Yellow Sweet.
" 169	Sclenka Sladkaya	Green Sweeting.
* " 170	Revelskoe	The Revel apple.
" 171	Stekliannoe Z Simowoe	Glass Winter apple.
" 173	Skorospelka Rannaja	Earliest Early.
* " 174	Pipka, Malaja	Little Pipka.
* " 176	Krasnabakoe	Red-sided apple.
* " 177	Schlenka, Polosstaja	Green Streaked.
* " 178	Barlowskoe	Barloff's apple.

†The numbers marked with an asterisk (*) are those described or referred to in the following paper.

No.	RUSSIAN NAMES.	TRANSLATION.
* A 180	Nejolowskoe	Negoloff's apple.
* " 181	Pipka Champanskaja	Champagne Pipka.
* " 182	Kalville Kwasnuiletny	Calville Summer-red.
* " 183	Burlowka	Burloff'ka apple.
* " 184	Arabskoe	Arabian apple.
* " 185	Anisowka	Anisette.
* " 186	Steklianka Revels Kaja	Glass Revel apple.
* " 187	Steklianka Selonka	Glass Green apple.
* " 188	Arkad Scholti	Yellow Arcadian apple.
* " 190	Tiesenhausenskoe	Tiesenhausen.
* " 196	Polosatoe Sladkoe	Streaked Sweet.
* " 197	Kriwospizoe	Curly Spiced apple.
* " 198	Polu Miron	Crossed Barbel.
" 199	Naleiv Woskowoi	Waxen Juicy.
" 200	Repka Rosowaja	Rosy Little Turnip apple.
* " 202	Saitschia Pipka	Hare Pipka.
* " 203	Arkad	Arcade.
* " 204	Rubez	Cut apple.
* " 205	Kajabowka	Karaboff apple.
* " 206	Zarski Schip	Czar's Thorn.
* " 207	Stupka	Stoupka.
* " 208	Korolewskoe	Royal.
* " 210	Rubezuinogradni	Cut Wine apple.
* " 212	Berkowskoe	Berkoff's apple.
* " 213	Stepanouka	Stepanoff's apple.
* " 214	Sadowskoe	Garden apple.
* " 215	Kustoe	Bushy apple.
" 217	Sacharnoe	Sugar Sweet.
* " 218	Fokinskoe	Fokin's apple.
* " 219	Belaja Tebedka	White Swan.
* " 220	Scholkowka	Silken apple.
* " 225	Getmanski Bob	Getman's Bean.
* " 226	Rubez Belui	White Cut.
* " 228	Krimskoe Wochina	Vochin's Crimean apple.
* " 230	Titouka	Titus apple.
* " 231	Solotoi Arkad	Yellow Arcadian.
* " 234	Muscatelnoe	Muscatel.
* " 236	Antonouka	Anthony's apple.
* " 240	Teschanka	Lieby apple.
* " 242	Schriokolitschiko	Broadleaved.
* " 245	Borouinka	Mushroom.
* " 246	Plodowitka	Prolific.
* " 247	Popouka Polosataja	Popoff's Streaked.
* " 248	Beel	White.
* " 252	Aport	O'Porto apple.
" 260	Simnoe Polosatoe	Winter Streaked.
* " 261	Aport Reptschati	O'Porto Turnip See l ug.
* " 262	Charlamowskoe	Charlamoff.
* " 264	Duchowoe	Smelling apple.
* " 265	Pipka Govkaja	Butter Pipka.
* " 266	Polosatoe Nowgorodskoe	Novgorod Streake
" 267	Gruscheffka	Pear apple.
* " 268	Sakaritnoe	Saccharine.

No.	RUSSSIAN NAMES.	TRANSLATION.
* A 269	Aport Rosowui	O'Porto Rosy.
* " 272	Schapotschka	Little Hat apple.
" 273	Gruscheff'ka Bsennaja	Autumn Pear apple.
* " 274	Rosowoe	Rosy.
* " 275	Sototoreff'ka	Zolotoreff's apple.
" 276	Polo Stekianka	Half Glassy.
* " 277	Wargul	Wargul.
* " 278	Borowinka Krasnaja	Red Mushroom.
* " 279	Aportowoge Simowoe	Winter O'Porto.
* " 282	Renetto Woroneschski	Woronech's (name of a province).
* " 283	Slast	Apple Sweet.
* " 284	Steklianka Kremer's	Kremer's Glassy.
* " 285	Repristoe Walisonoe	Turnipy Juicy apple.
* " 286	Kremerskoe	Kremer's (seedling).
" 287	Rigaer Skwosnoinalin	Riga Transparent Juicy.
* " 288	Malinowskoe	Raspberry.
* " 290	Ukrainskoe	Ukraine apple.
" 295	Imperial	Imperial.
* " 304	Suislepper	Switzer.
" 310	Christapfel	Christmas apple.
" 313	Muscatapfel	Muscat or Persian apple.
* " 315	Herrenapfel	Lord's apple.
* " 316	Rothe Reinette	Red Queen.
* " 317	Golubinoe Beeloe	White Pigeon.
* " 321	Pipka Sladkaja	Sweet Pipka.
* " 322	Kovitschneoe	Browny apple.
* " 323	Repouka	Turnip apple.
* " 324	Neemezki Kalville	German Calville.
" 327	Scholti Arkad	Yellow Arcadian apple.
* " 330	Polosatoe Naliwnoe	Juicy Streaked.
* " 332	Plodowitka Ramaja	Early Prolific.
* " 333	Skwosnoi Krasnoi	Red Transparent.
* " 334	Skwosnoi Schotoi	Yellow Transparent.
* " 335	Skwosnoi Selennôe	Green Transparent.
* " 336	Skwosnoi Beeloe	White Transparent.
* " 337	Scrinka	Grayest.
* " 338	Gruscheff'ka Revelskaja	Revel Pear apple.
" 339	Reinetti Beelui	White Queen.
* " 340	Himbeerapfel, Lievlander	Lowland Raspberry.
" 341	Borsdorfer	Borsdorf.
* " 342	Scharlottenthaler Golba	Charlottenthaler (the name of a place) apple.
* " 343	Weinapfel Rother	Red Wine apple.
* " 344	Sultanapfel	Sultan apple.
* " 350	Lapouch	Burr apple.
* " 351	Plodowitka Cuadkaja	Prolific Sweeting.
" 352	Swonkoe	Resonant apple.
* " 354	Kriwospizoe Aromatnoe	Curly Spiced Aromatic.
* " 355	Aport Herbst	Autumn Orange.
* " 359	Motschetschnoe	Wetting apple. Literally, apple *to be preserved in water* (as done in Russia).

No.	RUSSIAN NAMES.	TRANSLATION.
* A 360	Funtowoe	Pound apple.
* " 362	Swinzoffka	Lead apple.
* " 364	Beel Wochins	White Wochins (a name) apple.
* " 367	Polosatoe	Red Streak.
* " 368	Mirone Sacharni	Sugar Barbel.
* " 369	Pipka	Pipka.
" 370	Lebedka	Swan apple.
* " 371	Skrut, Deutscher	Skrout, German.
* " 372	Petrowskoe	St. Peter's.
* " 374	Wislowchoe	Pendent Ear apple.
* " 375	Koritschewoe Ananasnoe	Browny Pine apple.
" 377	Limonnoe Scholtoe	Yellow Lemon.
* " 378	Orsimui	Hibernal apple.
* " 380	Gruscheffka Moskoloskaja	Moscow Pear apple.
* " 382	Buzkafa Selonka	Russian Green apple.
" 385	Bodewskoe	Bode's apple.
* " 387	Dobrui Krestianin	Good Husbandman apple.
* " 393	Zitsonnoe Zarskoe	Imperial Citron.
* " 398	Krupneena	Enormous.
* " 399	Krimskaja Selonka	Green Crimean.
* " 402	Borsdorfer	Borsdorf.
" 403	Anis Sacharnui	Sweet Anisette.
" 406	Pipka Sacharnaja	Saccharine Pipka.
* " 407	Tschernoe Drewo	Blackwood.
" 408	General Greig	General Greig.
" 409	S. Wochinskoe	Wochin's apple.
* " 410	Repka Malenka	Little Seedling.
* " 413	Skrischapfel	Cross apple.
" 424	Bergamottnoe	Bergamotte.
" 425	Anis Rospisni	Pointed Anisette.
* " 426	Swinez	Apple " Lead."
* " 427	Anisimowskoe	Anissim's apple.
* " 429	Bosklonowka	Bosklonoff's apple.
" 430	Arkad Kruglui Woskowoi	Round Waxen Arcade.
* " 433	Orlowskoe	Orloff.
* " 437	Sachoiswan	Saxonian.
" 438	Rospisnoe	Pointed.
* " 439	Krimskaja Beel	White Krim.
* " 441	Grimuschka	Rattling apple.
* " 442	Kalville Scholti	Yellow Calville.
* " 444	Reinette Liubski	Lubsk (name of a place) Queen.
" 445	Romianka	Red-cheeked apple.
" 447	Ranette Kiluski	Queen of Kiew.
* " 448	Kardinal	Cardinal.
* " 450	Beel Krasawiza	Handsome White.
* " 451	Warschtapel	Warsztappel.
* " 453	Arkad Krasiwui	Beautiful Arcade.
* " 455	Riabinouka	Berry apple.
* " 457	Klinewskoe	Klineff's apple.
* " 458	Scholtinaliw	Yellow Juice.
" 461	Rebristoe	Strong-ribbed.
* " 462	Rubez Sclonniu	Green Cut.
* " 463	Pipka Postillnaja	Spreading Pipka.

No.	RUSSIAN NAMES.	TRANSLATION.
* A 466	Repka Kislaja	Sour Turnip.
* " 467	Miron Ploskui	Flattened Barbel.
" 468	Beel Rospisnaja	Pointed White.
* " 469	Babuschkino	Grandmother's apple.
" 470	Lapouchoe	Burr apple.
" 471	Anisowaja Plodowitka	Prolific Anisette.
* " 472	Ostrekowskaja Steklianka	Ostrekoff's Glass.
" 475	Postichouka	Holdfast.
* " 476	Arkad, Rother	Red Arcade.
* " 477	Roschdestwenskoe	Christ Birth apple.
" 478	Tonkowetka Polosataja	Thin Twig Streaked.
* " 481	Mzenskoe	Mzensk apple.
* " 490	Glinzowoe	Clay apple.
* " 502	Russische Rambour Reinette	Russian Rambour Queen.
* " 544	Lapouchoe Naliw	Juicy Burr apple.
* " 548	Borowinka Lugouaja	Meadows Mushroom.
* " 551	Arbusowskoe	Water-melon apple.
* " 555	Krass Sladkaja	Red Sweeting.
* " 557	Revelskaja Polosatoe	Streaked Revel.
" 558	Konitschenewoe Rannoe	Early Cinnamon.
* " 563	Krimskoo Naliwnoe	Juicy Krimtarter.
* " 565	Wergunoks	Worgunok.
" 566	Krupnui Skworminaliw	Large Sub-acid.
* " 568	Melonenapfel	Melon apple.
" 569	Rosenhager	Slender Rose.
" 575	Alabaster, Weisser	Alabaster White.
* " 578	Boresdorfer Leipziger	Leipzig Borsdorf.
* " 579	—— Tierlandischer Sommer	Summer Lowland.
* " 580	—— Tierlandischer Winter	Winter Lowland.
* " 584	Erdbeerapfel	Red Calville.
* " 585	Zusows Winterapfel	Zusoff's Winter apple.
* " 587	Englischer Pepping	English Pippin.
* " 592	Arkad Dlimui	Long Arcade.
" 595	Mzenskoe Sladkoe	Mzensk Sweet.
* " 597	Pesolschnaja Steklianka	Glassy Sand apple.
* " 599	Romenskoe	Omensk (name of a place).
* " 600	Dlimoe	Long apple.
* " 864	Arkad Duimtschataja	Smoky Arcade.
* " 874	Borowinka Sladkaja	Sweet Muskroom.
" 962	Reinette Muscâteller	Queen Muscatel.
" 963	Muscateller Tievlander	Lowland Muscatel.
" 964	Herbst Streifling	Autumn Streaked.
* " 965	Gruscheff'ka Sladkaja	Sweet Pear apple.
* " 966	Tuchernokrasnoe	Red-black.
" 967	Sclonnoe	Greening.
" 968	Saburonskoe	Aloe appel.
" 969	Zantarnoe	Zantar apple.
* " 970	Tuhuginka Selomaja	Green Citron.
* " 971	Wassilli Welikui	Vasilis Largest.
" 972	Trechtrshomnoc	Overflowing.
* " 973	Stekliannoe Duschisstoe	Shining Aromatic.
" 974	Rasumowski Noschok	Razumoffsky's Downy.
* " 975	Tetneksrasnoe	Red Teat.

No.	
A 976	T
" 977	T
* " 978	B
" 979	B
" 980	B
* " 981	B
" 982	S
* " 983	A
* " 984	A
* " 985	A
" 986	A
* " 987	A
* " 988	A

No.	RUSSIAN NAMES.	TRANSLATION.
A 976	Tipka.....	Linden apple.
" 977	Tuhutilotschnoe	Aromatic.
* " 978	Beel Solotofskaja	Golden White.
" 979	Beel Krupnaja Prodolgouataja..	Large Long White.
" 980	Beel Plikano Uskaja	Plikanoff Small.
* " 981	Beelowoe Scholto Seroe.....	White Russet.
" 982	Skrut Beelowoi	Round White.
* " 983	Astrachanskoe Skwasnoe.....	Red Astrachan.
* " 984	Anis Kurski	Koursk's (a name of a place) Anisette.
* " 985	Anis Krasnui.....	Red Anisette.
" 986	Anis Selanui.....	Green Anisette.
* " 987	Anis Schaltui	Yellow Anisette.
* " 988	Ananasnoe	Pine apple.

ON THE RUSSIAN APPLES

Imported by the U. S. Department of Agriculture in 1870.

By Charles Gibb, Abbottsford, Quebec.

My object in writing the following pages is to note, as far as I can, the opinions of those who have fruited these apples on this continent, and also to give the opinion of Dr. Edward Regel, Director of the Imperial Botanic Gardens at St. Petersburgh, from whom these apples were received.

My endeavour is to cause this matter to be thoroughly looked into, so that, in spite of all drawbacks, we may soon know which are the really valuable apples in this large collection.

The confusion in Russian nomenclature has been a great drawback to the introduction of the Russian apples into this country. In the Department catalogue we find duplicates under different names, confusion of names as to types and families, evident mistakes.

In Dr. Regel's work on Russian Pomology, the lists of synonyms show how confused is nomenclature in Russia. Aport, which is of the Kaiser Alexander Family, is noted as a synonym of Antonovka; Titovka of Aport, Red Calville of Titovka, Titovka of Steklianka, Anisovka of Borovinka. Truly if Spitzenburg and Northern Spy were synonyms of Golden Russet the case would be somewhat parallel.

Unfortunately in the Department list, the name is, too often, no guarantee to the nature of the fruit. Of the two apples named Red Astrachan, the first is Duchess, or very like it; the other is a mistranslation, and not intended for it. Apples whose names state them to be of Greening, Anis or Blue Permain type, prove to be Duchess; Aports do not prove to be of Alexander family; Steklianka the very opposite of Greenings. Apples marked Beel or Belui are far from white, and others noted as red, show no trace of it. Those marked winter, if from the northern parts of the coast provinces, where the summer is short and cool, are by no means winter apples in our longer and warmer summers.

The early ripening of these apples on the Department grounds at Washington, gave many the idea that they were all summer apples, that is summer irrespective of the climate they are grown in. Prof. Budd, of Ames, Iowa, in 1876, on 20th Augnst, noted Borsdorf, No. 341, in the Department Grounds, as "falling from the tree and about ready for use," while he quotes an authority from Northern Vermont, saying, "a long-keeping apple of finest quality." Again, Red Queen, No. 316, Mr. Budd notes as "a rusty, green apple about mature 20th of August, and falling from the tree." Mr. A. G. Tuttle, Baraboo, Wis., says: "Fruit of good size, red on the sunny side, season, January to April." It may thus be seen that the Department test was no test at all as regards the quality and keeping of these fruits, nor were they so intended by the Department who used their grounds merely for the purpose of growing for distribution. These trees, as received by the Department, were labelled by number; they were also sent out by number. Some mistakes are observable and mistakes will happen when things are received and sent out by number; but the numbering as sent out by the Department, I am told, was unmistakably plain. These numbers referred to a list in Russian which was translated at the Russian Embassy in Washington, and distributed by the Department. Unfortunately, the Russian names are rendered into English sounds from a Russian, not an English, standpoint. These names should be rendered *euphonically* from an English point of view. Thus "ow" and "ou" are intended to be pronounced "ov" or "off," also "ja" should be pronounced "ya." The Russian language is as musical as Italian, and when these names are properly rendered into English sounds, it will divest them of half their difficulty.

We also should have uniformity in the spelling of the Russian names. We find naliw, naliv, nalin, naleiv, naliwnoe, and even walisonoe, for the word translated juicy or transparent. We find scholti, schotoi, schaltui, scholtoe, for the word yellow.

We find schlenka, sclenka, selonka, sclonnoe, selennoe, sclonnui, for the words green and greening. Of course this is in part the work of the printer. We find Rannet Kiluski, Queen of Kiew, or Kiev, as we would say, but who would suspect Kiluski of being Kievski. Any number of such mistakes.

The translation also is badly done. In 399 Krimskaja is translated Crimean, in 439 Krim, and in 563 Krimtarter, and these mistakes have been puzzled over and copied by every one who has grown them.

The translation of the German names is still more faulty. Aport Herbst (355) is translated Autumn Orange, but Aport does not mean Orange; Erdbeerapfel, which means Strawberry Apple, is translated Red Calville; Suislepper is translated into the English (?) word Switzer; Buschbon, which is probably Buschbohn, dwarf bean, is translated Buschbon. The Department catalogue should certainly be revised.

There is also another drawback. In the North scions have been usually top-grafted on crabs. Growers in Vermont, Wisconsin, and Minnesota are now agreed that the crab stock is uncongenial to the Russian apple. The experience of Mr. Tuttle will illustrate this. Of 127 Tetofsky, top-grafted on Transcendent, after ten year's growth, but one living; on Yellow Crab, two trees alive out of 74, the Tetofsky having made a growth, before dying, of six to eight feet; of 57 on apple, root grafted, all alive and doing well. Mr. Sias, of Rochester, Minn., and Mr. Webster, of South Northfield, Vt., often speak of fruit, medium in size, top worked on crab, larger on apple. It is to be regretted that our first impressions of the Russian apple were either from specimens grown in the climate of Washington, or else from top grafts on crab at the north.

It was in 1860 that Dr. Regel began his Pomological work at St. Petersburg, a work which he followed up with the same energy that had characterized his botanical labors. He began by studying the apples growing in his neighborhood; exhibitions also were held at St. Petersburg in 1860, 1861, 1862 and 1863. The apples exhibited were from different parts of the Province of St. Petersburg, also from Riga, Novgorod, Pskov, Valaam, Tver, Moscow, Tula and Tchernigov; also from Dr. Lucas, of Wurtemburg.

Dr. Regel wrote his Russkaya Pomologaya in 1868. In this work he gives a full, minute description of 225 varieties of apples, nearly all of Russian origin; a woodcut is given of each variety, also beautiful colored plates of about 144 of them. The descriptions of these apples were, for the most part, taken from the samples exhibited at St. Petersburg; and here, partially hidden under cover, as foundation-stones are apt to be, is one of the best parts of Dr. Regel's work—the naming of these fruits and the noting of their synonyms. For instance, the Borovinka he traces to its probable origin, but states it to be the same as the Anisovka of Mr. Heidorn, the Plodovitka of the Valaam Monastery, the Boloska of Mr. Atriganiev, etc., etc., etc.

Dr. Regel also gives a supplemental list of about 181 Russian varieties. These he received in part from the places I have mentioned above, also from Voronesh, Penza, Riazan, Vladimir, Saratof, Sarepta, Astrachan, Revel and other places. The varieties in this list are not *described*, only in a few instances is the quality of the fruit spoken of. The place from where received, and their behavior in nursery up to date is usually noted.

There is also a list of 296 foreign varieties received from Germany, Sweden, and from the Royal Horticultural Society in London, including many American varieties; these are noted mainly to show their hardiness in nursery, and especially how they stood the severe winter of 1866-67.

Of the 252 varieties received by the Department from Dr. Regel about 120 are fully described, about eighty-two are but briefly noted, or perhaps mentioned only as to their behaviour in nursery, three are duplicates, about six appear only as synonyms in Dr. Regel's book, and about thirty-eight I have not been able to find, although some of them are no doubt noted or described.

With these facts before us, we can see Dr. Regel's estimate of the value of the collection he sent us.

Dr. Regel speaks of his Pomology as a *report* rather than a book—a something to build upon and add to year by year. He calls it the first Russian Pomology, as being the first systematic work on the subject; yet draws attention to the book published by Nicolai Krasnoglazov in 1848, in which seventy-three varieties of apples are briefly described, and also to other authors.

Dr. Regel speaks of the winters of 1861-62, 1862-63, 1864-65 and 1866-67 as trying winters, and especially the last, when the thermometer went down to 42° below zero, Fahr. The temperature seldom falls below 35½° below zero Fahr. at St. Petersburg. "Seven years' nursery experience, with a variety," says Dr. Regel, "is not enough to test its hardiness." He also draws attention to the fact that many varieties that he has, he has not yet fruited, and that he may, therefore, have the same apple growing under different names in his nursery.

This Russian Pomology is full of facts of interest to us. Dr. Regel assumes nothing—what he does know, and what he does not know, are stated so fairly. His work is grand, good, fundamental work; but it was not followed up, as it should nave been, by a national convention of fruit-growers and a national exhibition of fruits. On

the other hand, the fickle climate of St. Petersburg proved a severe test to many of the varieties Dr. Regel had gathered for trial in his nurseries. He ceased to experiment so largely and selected a smaller list as those best suited to the needs of his own climate, and henceforth gave but little thought to apples, but devoted his vigorous energies to gathering from the colder parts of Asia, those numberless botanic rarities which have made the St. Petersburg Imperial Gardens so interesting to men of the north.

It will be observed that when Dr. Regel describes the apples grown in the Province of St. Petersburg, he usually under-rates their size; he entirely under-rates their color, and altogether over-rates their keeping qualities. Even the Early Transparents keep till December. Such is the effect of the cool, short summers in that high latitude. This does not apply to samples grown in other parts of Russia.

My information in the following list is based upon visits in August last to the orchards of Mr. Spaulding (formerly that of Mr. Moulton), near Minneapolis; A. W. Sias, Rochester, Minn.; J. M. Underwood, Lake City, Minn.; A. G. Tuttle, Baraboo, Wis.; State Agricultural College, Ames, Iowa; Ellwanger & Barry, Rochester, N.Y. Also Mr. A. Webster, of South Northfield, Vt., and Dr. Hoskins, of Newport, Vt., brought to the Montreal Horticultural Society Exhibition samples of their Russian fruits, and gave me every opportunity of getting information from them. Mr. Webster, in a paper published in the Montreal Horticultural Society's report for 1881 described thirty-eight varieties of these apples which he had fruited—by far the most important article upon this subject that had appeared. Mr. Wm. Saunders, of the Department of Agriculture, also very kindly loaned me brief notes and tracings he had taken. The Washington climate, however, is so different from the climates these trees were intended to be grown in, that I shall seldom quote from these notes. I have also valuable information from Oliver Gibbs, Secretary of the Minnesota Horticultural Society, Lake City, Minn., also from C. Perry, of Beaver Dam, Wis., and others.

Prof. Budd is not able to help in this matter as one might expect, as the State Agricultural College at Ames, Iowa, received their own importation from Dr. Regel; but as Russian apples have been, or are being, received by the college from twelve different sources in Europe, much valuable light will be thrown upon the matter.

CATALOGUE.

—:o:—

(1) ASTRACHANER ROTHER—*Red Astrachan.*

If not Duchess, so like it as to be hardly distinguishable from it.—*Spaulding.*

Dr. Regel received this from Dr. Lucas, the eminent pomologist, of Reutlingen, Wurtemburg, where it is said to be a very popular summer apple. It is believed by Dr. Lucas to have come from Russia. Dr. Regel says that until it fruits he will be unable to decide whether it is one of the Russian apples known to him. It proved quite hardy at St. Petersburg, and did not suffer even during the very severe winter of 1866-67.

(15) SUSSAPFEL VON TŒNARIUS—*Von Tœnarius, Sweet.*

A beautiful sweet apple, which grows plentifully in the Imperial Gardens at St. Petersburg. It is not described by Dr. Regel.

(44) ASTRACHANER WEISSER—*White Astrachan.*

Dr. Regel received trees of this from Revel from Mr. Detrich. The trees, however, proved sensitive to the cold of winter. They were injured each year, and at length died. Trees grown at St. Petersburg stood better; in fact, proved even fairly hardy—stood even the test of 1866-67. This White Astrachan Dr. Regel believes to be a Russian apple. Anerot thinks it is the same as the White Naliv, which is grown in other countries under synonyms, but this is not proved. Phlotov gives as Russian synonyms, Naliv and Fonarik.

54) LUIKENAPFEL—*Luiken Apple.*

Dr. Regel says that he received this from Dr. Lucas, of Reutlingen, in Wurtemburg, where it is a popular fruit for dessert and home use. Dr. Lucas recommended it for dry soils. Dr. Regel tried it on such soils, but it was injured during the severer winters, and most, if not all, of his trees were killed.

(60) ANASAPFEL ROTHER—*Red Duck.*

Of the Yellow Transparent family. A large, oblong conic, greenish-yellow apple, much like Yellow Transparent; skin rougher than Yellow Transparent, and not as yellow, says Mr. Tuttle. Mr. Webster finds it a little better in quality than Charlottenthaler, but smaller in size, and therefore not equal for market. At Mr. Underwood's, it agreed exactly with Mr. Tuttle's description.

Dr. Regel does not mention the Anasapfel Rother. Both the name and translation of this are puzzling. The *Ananasapfel Rother* Dr. Regel received from Gotha, in Germany, and speaks of it as perhaps the same as the Prinzenapfel; a good-sized pale yellow apple, with perhaps a faint mottling of red on one side. This apple, however, was killed in 1866-67, whereas young trees of Anasapfel Rother were not injured. Dr. Regel therefore thinks they may be different varieties.

(61) EDLER ROSENSTREFILING—*Noble Redstreak.*

Dr. Regel speaks of this as growing in his own garden at St. Petersburg. It is a medium-sized apple, roundish, very slightly flattened; stalk very long, and remarkably stout; yellow, mostly covered with red in splashes and stripes. Flesh, greenish-white, tender, sweet, like honey, with an after taste like honey. Good for table and home use. In season from September to November. Young trees stood well during the severe winters of 1861-62 and in 1862-63.

(68) CHAMPAGNER FRUHER—*Early Champagne.*

A small early conic apple, colored like a Duchess; a sharp acid with slight flavor. I saw this both at Mr. Tuttle's and Mr. Spaulding's, but am not sure if the same fruit or not.

Mr. Sias says, "this is the earliest apple we know, an early and abundant bearer; rather tart, but an excellent pie apple. It is striped with red, beautiful in shape, and very hardy." Mr. Sias has had it bear the same season that he had grafted it on the Palmer's Sweet Crab. It makes a good union with that stock. Mr. Saunders speaks of it on the Department grounds as a promising early fruit; small in size, but very pretty, and would make a fine cooking apple. Ripe enough to test on 24th of June.

(69) SOMMER BIRNAPFEL—*Summer Pear.*

A white apple, rather small, very conic, with wrinkled basin.—*Sias.*

It seems not the same as Pear Apple, No. 267.

(105) GRAFENSTEINER RUSSISCHER—*Russian Gravenstein.*

Dr. Regel mentions this as growing in the Baltic Provinces, in Finland and at Pskov. A roundish, rather irregular apple, strongly ribbed. It is above medium in size, and in color a yellowish green, afterwards yellow, two-thirds of the apple often being covered with red stripes. Flesh, white, tender, vinous sub-acid and agreeable. An excellent table apple, which ripens in September and keeps long into winter; in a light room, however, it does not keep later than the 1st of December. Dr. Regel says that the tree grows to a large size, and bears a large amount of fruit. The fruit is sent to St. Petersburg from Germany in great quantity, and sells at high prices

as a dessert apple. The woodcut and colored plate given by Dr. Regel are from specimens grown in Russia.

(122) Borsdorfer Revaler—*Borsdorf Revel.*

Dr. Regel mentions this as growing in the Baltic Provinces. Neither the young or old trees had suffered during any of their severe winters.

(153) Skvoasnoi Nalin—*Transparent Juicy.*

The Skvosnoi Naliv, Dr. Regel describes as one of the most popular kinds of apples. It is grown in the northern part of the Province of St. Petersburg and in the provinces to the south of Moscow. This and the White Naliv constitute the larger part of the apples to be seen in the Province of St. Petersburg. This true Russian apple, on account of its good quality, heavy bearing, transparency and beauty, has become widely popular.

Transparent (nalivnoe) apples are beautiful dessert fruits. This apple sells at high prices, ripens in September, and must be used at once. When the fruit is opaque it may be kept till December, but if not conserved very carefully it will rot in September and October. Dr. Regel notes as synonyms of this apple, the White Astrachan (of Lucas and Oberdick), and the Possart's Moskauer Nalivia (of Lucas and Oberdick.) This apple, however, is not at all of White Astrachan type.

The Belui Skvosnoi Naliv, Dr. Regel describes from samples received from Nijni Novgorod, and the Provinces of Moscow and Vladimir, and the South. He says he thinks it is often mixed with Naliv Belui.

(157) Belui Nalin—*Juicy White.*

"A white fruit of good size; acid, but milder when fully ripe," says Mr. Tuttle.

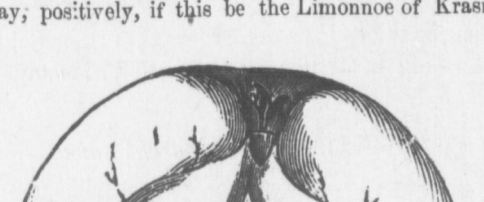
Dr. Regel says the Belui Naliv is one of the most valuable of Russian apples, because it grows even in the northern part of the Province of St. Petersburg, even at the Valaam Monastery, near the northern end of Lake Ladoga, and in some parts of Finland. It takes first place before all others, just as does Skvosnoi Naliv, which is about as popular. It stands our severest winters at St. Petersburg, and bears every year, or at any rate every second year, heavily. It grows without any care, grows in neglected gardens, and is the earliest green apple in our markets.

Ordinary samples are a little below medium in size, good specimens a good deal above it, and quite yellow when ripe. Season, August till December.

(159) Limonoe—*Lemon Apple.*

Dr. Regel says, this is grown from St. Petersburg to Moscow. It is a small, roundish, or roundish-oblong apple, with a long stalk; yellow with a few splashes of red; tender, agreeably vinous acid, with a very slight astrin-

gent after taste. A summer apple, which ripens about the end of August. Good for table or kitchen. The tree is large and spreading, and endures the severest winters at St. Petersburg, and bears heavily every second year. Dr. Regel cannot say, positively, if this be the Limonnoe of Krasnoglazov of Moscow.



LONGFIELD.

(161) LANGERFELDSKOE—*Longfield.*

An early winter fruit of fine quality and bright attractive color. As pointed out by Mr. Webster, it is the same as No. 587, English Pippin. Mr. Budd was told at the nursery of Mr. C. H. Wagner, at Riga, that this apple was a seedling grown by an Englishman on the Volga, and that it was sometimes known as the English Pippin, and sometimes as Longfield—the latter name supposed to have come from the shape of the field the tree was growing in. Mr. Budd received it both from Moscow and St. Petersburg, and I think he has that of the Department List under both numbers. His are all alike and true to name. It therefore seems to be one of those apples which is apt to come true to name from different sources. Mr. Tuttle says it is as good a bearer as Duchess, and thinks the finding of this is worth all the labor and expense he has had of testing so many Russian varieties. The flesh is white and fine-grained; the skin bright yellow and bright pink. Mr. Tuttle says it would be safe to plant a thousand trees of it. Its fault is its small size, a fault increased by the top-grafting on crabs;

but those who are growing it on apple roots in rich prairie soils in the West do not seem to grumble at its smallness in size.

Mr. C. Perry, of Beaver Dam, Wis., says:—Very similar to Good Peasant (see No. 387) both in tree and fruit. Longfield, however, averages a trifle larger and is two to four weeks later in ripening. Quality, fair; season, December. Tree hardy and a prodigious bearer, and seems likely to prove a most valuable cider apple for the Northwest.

Dr. Regel says:—The Langerfeldskoe, as far as we know, has been grown only in the garden of Mr. Langerfeld, at the German colony of Sarepta, on the Volga, half-way between Saratov and Astrachan. It is a lemon-colored apple, red on the sunny side, with white, tender, juicy flesh. Neither the cold, nor the winds, nor the storms of the intensely steppe climate of Sarepta have disturbed the growth of this tree. Of 100 different varieties growing in the garden of Mr. Langerfeld, only this one bears fruit every year.

Let us bear in mind that Sarepta has not a high northern climate.

(162) BUSCHBON—*Buschbon.*

Mr. Saunders, of the Department of Agriculture at Washington, says:—A very good summer fruit, somewhat aromatic in flavor; ripe from June 22nd.

Dr. Regel mentions this only as a synonym of Popovka Polosataya, No. 247.

(164) POLOSATOE HEIDORNS—*Heidorn's Streaked.*

A very beautiful, large-sized striped apple, sweet and of delicate texture, but short in season. Such were the specimens brought to the Montreal Horticultural Society's Exhibition last September. Mr. Webster finds the fruit large and fine, even when grafted on crab. The tree, Mr. Webster says, is of slow growth and a moderate bearer.

Dr. Regel speaks of this as being one of the apples exhibited at St Petersburg in 1866. It is named after Calvin Heidorn, gardener of Baron Tiesenhausen at Yamburg, eighty-six miles southwest of St. Petersburg. A medium-sized, roundish apple, dull yellow, mostly covered with dull red in splashes. Flesh white, soft, juicy and very sweet. The tree grows to a large size and has a great many branches. It bears a large amount of fruit every second year, and stands well the climate of St. Petersburg. It ripens in September, but begins to rot at the core soon after ripening, yet may sometimes be kept till November or December.

(166) APORT LETNY—*Summer O'Porto.*

"A large, flattened, angular, brown-cheeked apple of fair quality—September. It has no Aport or Alexander likeness," says Mr. Webster.

Dr. Regel speaks of this as a fruit, samples of which he received from the Provinces of Moscow and Tchernigov. It seems to have been named by Mr. Atriganiev. It is at first a greenish-yellow, and becomes later a beautiful yellow, like wax, with dots. The flesh is tender, juicy, agreeable and mildly acid. A nice early table apple from September to December. It is different from the Skvosnoi Naliv, being larger in size and more yellow in color. It endures well their cold winters. The colored picture in Dr. Regel's book is a somewhat ribbed apple, a good deal like Charlottenthaler.

(167) Scholtoe Sladkoe—*Yellow Sweet.*

Mr. Tuttle says:—Fruit medium to large; earlier than Yellow Transparent.

Dr. Regel speaks of this as grown in the Province of St. Petersburg and southwards, and says it is very like the Yellow Arcade. Judging from the woodcut and the colored plate, it would seem to be somewhat larger and a better looking fruit. It seems to be a yellowish apple, with some red on the sunny side; flesh firm and agreeably sweet; good for dessert, but better suited for cooking. The tree is quite hardy, but not productive. In season from November till December.

(170) Revelskoe—*Revel.*

Dr. Regel notes several places where this has been grown, at or near St. Petersburg. A pale yellow apple with some red on the sunny side. Flesh pure white, firm, agreeably sour, with an aftertaste like almonds. A good table apple from September till late winter, but seems to lack size.

(174) Pipka Malaja—*Little Pipka.*

Mr. Sias says:—Below medium in size; fine in grain and flavor; a delicious, very small sweet apple.

(176) Krasnabakoe—*Red-sided.*

Dr. Regel speaks of this as growing in the Provinces of St. Petersburg and Novgorod. It is a small greenish apple with red side; sometimes the sunny side is blushed with dark blood-red. The flesh is sometimes stained with red; tender, juicy, and agreeably sub-acid. A good early summer apple, which ripens on the tree about the end of August and keeps till November. It is very nice either for table or cooking. The tree is small, and yields a good supply of fruit every second year. It endures the worst winters at St. Petersburg, and is well worth growing.

(177) Schlenka Polosstaja—*Green Streaked.*

Mr. Tuttle speaks very highly of this as a very large apple, sometimes of the largest size, striped with red, a little coarse in texture, but a showy, saleable, market fruit, that keeps into winter. Its name may, perhaps, have been given to it from green veinings in the flesh.

It seems to belong to the same family as Turnipy Juicy, Zolotoreff and Vassilis Largest, and, like them, shows some tendency to blight in nursery.

Mr. Perry says :—A large showy, oblong, red-striped apple of good quality; September. The tree is an early bearer, but has blighted for seven consecutive years.

(178) BARLOWSKOE—*Barloff.*

An apple of distinct Alexander features, as I saw it in Mr. Tuttle's orchard, showing near relationship in its size, form and color. It is a sweet apple of fair quality, ripe at the beginning of September. Perhaps it may be the Sweet Aport which I saw at Orel, in Russia. That grown by Mr. Webster, however, is a flat, sub-acid, thin-flavored fruit, and in shape more like Zolotoreff and Turnipy Juicy, and not of special merit.

Dr. Regel says, that the only tree he knows of, is in the Imperial Gardens at St. Petersburg, and seems to have been named after a gardener. A large apple of Alexander type, green, with a good deal of dark red. Flesh white and agreeably vinous-sweet; an excellent autumn apple, which ripens in September and keeps till December. The Barloff grown by Mr. Tuttle is evidently true to name.

(180) NEJOLOWSKOE—*Negoloff.*

"An October fruit of good size and fair quality, but not of special value. Tree of Duchess growth," says Mr. Webster.

(181) PIPKA CHAMPANSKAJA—*Champagne Pipka.*

Dr. Regel describes this from samples from different parts of the Province of St. Petersburg, from Pskov and other places. A small, or perhaps medium-sized, greenish-yellow apple, with some red on the sunny side. The flesh is white, under the skin reddish; a very agreeable vinous-sweet. The tree is large and spreading, bears well every second year, and does well in the climate of St. Petersburg. The fruit is good for dessert or home use, and keeps through the winter.

(182) KALVILLE KWASNUILETNY—*Red Summer Calville.*

Dr. Hoskins has a Red Summer Calville, perhaps that of the Department. He received it from James A. Nelson, Indian River, Mercer County, Pa. Mr. Nelson speaks of it as a fine, early dessert apple, and the only Russian he has found to be of any value.

The Krasnui Simnui Calville, which I saw in the grounds of Ellwanger & Barry last summer, as far as I can remember, is very like

the colored plate and description of Dr. Regel. Although in name winter (Simnui), it ripened in August.

Dr. Regel states that there are many of these Calvilles, German, Polish and Russian, but he describes the variety which has been grown in the Province of St. Petersburg, and no specimen of it appeared in the collections sent from Moscow and the South Provinces. It is an apple about medium in size, pretty well covered with red. The flesh is white, near the skin a little red, very tender, a highly agreeable vinous acid. It ripens the end of August and beginning of September, and keeps till November or December. On dry soil the tree suffers in severe winters, and yet is stated to be one of the best, if not "the" best, summer apple for the St. Petersburg climate.

Dr. Regel, in his appended list of foreign varieties, mentions having received the Red Summer Calville from Gotha, and queries whether it may not be the same as that grown about St. Petersburg. They both suffer at St. Petersburg during severe winters. The beautiful Calville Rother Winter received from Wagner, of Riga, was injured more or less each winter, and finally died.

(183) Burlowka—*Burloffka.*

Dr. Regel says this apple is grown in the Provinces of St. Petersburg and Vladimir. A flattish apple of full medium size, yellowish-green, reddish-yellow on the sunny side. It is sweet and good for cooking. It ripens in September and does not keep long. The tree stands the cold winters at St. Petersburg.

(184) Arabskoe—*Arabian.*

There is some mistake here. Both Mr. Budd and Mr. Tuttle have fruited the apple, and it appears to be a Duchess or an apple very closely resembling it. The Arabskoe of Ellwanger & Barry is a large, flattish fruit, of deep pink color, very beautiful, though only of fair quality, and not a long keeper like the Arabskoe we saw at Volsk. This was received from Moscow, and yet hardly agrees with the description given to me by Mr. Shroeder, at Moscow, as a flat conic, hard winter apple. However, No. 315 (Lord's apple) is a true Arabskoe.

Dr. Regel speaks of the Arabskoe as being grown at St. Petersburg and in the provinces to the south of Moscow. When on the tree the apple is green, afterwards a yellow green, and on the sunny side a peculiar shade of dark, dingy red, covering one-third or half of the apple. The flesh is white, hard and sour, and when ripe, somewhat tender and agreeably sour. The tree is hardy at St. Petersburg, only young trees being injured there. The tree is large, and bears a medium amount of fruit, which ripens in October and keeps till spring or next fall. It is recommended as one of the best winter apples.

Dr. Regel also received samples from Astrachan and from another place.

The woodcut given by Dr. Regel is from a specimen of St. Petersburg growth, and, from its conic, almost Gilliflower shape, is quite unrecognizable as an Arabskoe. Dr. Regel's colored print is from a specimen from Astrachan, and is more like those we saw in Russia. Dr. Regel believes these to be the same, only modified by climate.

The *Arabskoe Polosatoe*, known to Dr. Regel only from sample from Riazan, southeast of Moscow, is described as a yellowish-green kitchen apple, with a dark carmine-red side; an agreeable vinous acid. In season from November till the end of winter.

(185) ANISOWKA—*Anisette.*

Mr. Tuttle says this is Duchess. (There is some mistake here.)

The Anisovka seems to be the best variety of the Anis with which Dr. Regel is acquainted. It is grown in the Provinces of St. Petersburg and Moscow, and southward from these points. It has also been grown at the Convent of Valaam. He says that the trees have stood the worst winters at St. Petersburg, and bear heavily every second year. It is very popular and commands high prices, as it is good either for dessert or cooking. It is at its perfection at the end of September, and may be kept till February or even March.

(186) STEKLIANKA REVELS KAJA—*Glass Revel.*

Dr. Regel says this has been grown at St. Petersburg and other places in that neighborhood, and also at Pskov. A medium-sized or small apple, somewhat conic, yellow, with some dashes of red on one side. Flesh white, very juicy, and when fully ripe a very agreable vinous acid. A good table apple from 1st September till January. The tree may be said to be hardy at St. Petersburg, although young trees suffer in severe winters.

(187) STEKLIANKA SELONKA—*Glass Green.*

"Just like Duchess," says Mr. Spaulding and Mr. Tuttle, "in tree and fruit." But stated by both to be later in ripening. Mr. Tuttle also says that the tree is a stronger grower. (There is some mistake here.)

This was brought by Baron Tiesenhausen from Dorpat, says Dr. Regel. An apple of scarcely medium size—1⅞ to 2¼ diuim or inches in depth and ⅞ of an inch more across. It is green or yellowish-green, with some red on the sunny side. Flesh greenish-white, firm, afterwards tender; acid. The tree bears a good crop every second year. A cooking apple, which ripens in October and keeps all winter. Baron Tiesenhausen says that only young trees have suffered, and that only during extreme winters.

Mr. Charles Patten, of Charles City, Iowa, received this along with others, not from the Department, but directly from Dr. Regel. Mr. Patten says:—Tree like Duchess and a good grower. The apple is of the same size and general appearance as Duchess, but not quite as

acid nor as good. Whatever mistake there may be here, is clearly trans-Atlantic.

(188) ARKAD SCHOLTI—*Yellow Arcadian.*

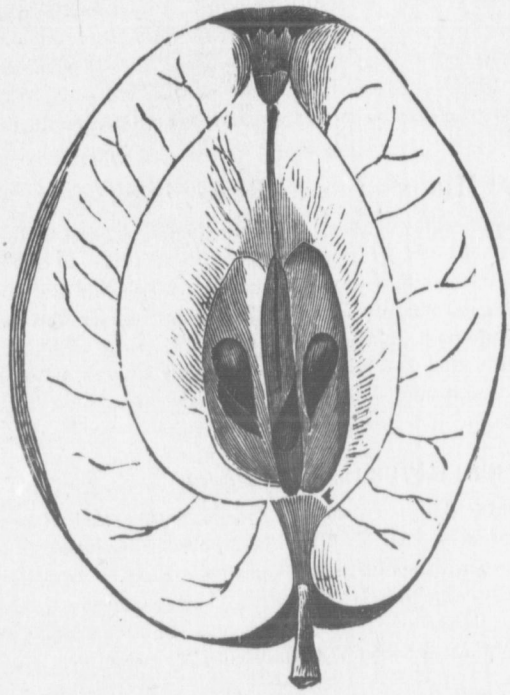
No. 327 in the catalogue bears the same name, and No. 231 the same translation. The Arkads in Russia are early sweetish apples, of medium size, valued only for their earliness and hardiness of the tree. Mr. Sias has fruited No. 188, and speaks of it as one of the most successful varieties on the Hislop Crab, as far as the tree is concerned. Fruit nearly white, and glossy, roundish, of full medium size, second rate in quality, a shy bearer. Others who have fruited Yellow Arcadian do not know under which number they obtained it.

Dr. Regel speaks of this as growing about St. Petersburg and the Baltic Provinces. It is medium or below medium; yellow, with perhaps a little red on the sunny side; tender, sweet, with a slightly bitter aftertaste. Good for cooking, though some people like it raw. Noted for its great productiveness, and its power to withstand cold winters. Season, September to January.

(190) TIESENHAUSENSKOE—*Tiesenhausen.*

Mr. Tuttle says that this, in form and color, is like Ben Davis, that it is of good quality, and the best keeper of all the Russians fruited with him. Tree a fine grower and very hardy.

Dr. Regel speaks of this, as a fruit, introduced by Baron Tiesenhausen into the Province of St. Petersburg, whither it was sent for exhibition in 1860 and in 1866. The Baron seems to have received it from Dorpat, but Dr. Regel queries whether it is known in the coast Provinces, and names it after the genleman who brought it into notice. It is a yellow apple, with scarcely a tinge of red, as grown in the north. Some specimens are oblong conic, others abruptly conic, towards the cavity, as well as towards the basin. The flesh is white, tender, juicy, sub-acid, good for table and home use. It ripens in September, and keeps, says Baron Tiesenhausen, till March. The tree is small, but productive, and suffers only in the severest winters at St. Petersburg.



TIESENHAUSEN.

(196) POLOSATOE SLADKOE—*Streaked Sweet.*

Dr. Regel speaks of this as growing in the gardens at Czarskoe Selo, about fifteen miles west of St. Petersburgh. A medium-sized, flat conic apple; greenish yellow or lemon-colored, with a little red on the sunny side. Flesh, white, tender, agreeable, and sweet. A good cooking apple, which ripens in September and keeps till November and December. It stands the winters of St.. Petersburgh very well, although some of the young trees suffered in 1866-67.

(197) KRIWOSPIZOE—*Curly Spiced.*

An apple somewhat of the Alexander type. Mr. Tuttle says, it has been condemned in the East, but it is an apple of pretty good quality; acid, with some flavor, not bad; but we have too many such apples.

Dr. Regel says—This is an apple which is well known and a good deal thought of about St. Petersburg, and thence towards Moscow and eastwards. It is of medium size, roundish, and slightly conic. When ripe it is a yellowish green, with red dashes. On the sunny side, carmine red dashes on

yellow ground. Flesh, greenish white, firm, juicy; and agreeably vinous acid; if over-ripe, mealy. It is useful for the table, kitchen, and for drying, and deserves to be widely grown, because useful for all purposes. Only the young trees suffer in the severest winters at St. Petersburg. The tree has many branches, and bears lots of fruit each year. Season from September to January.

(198) Polu Miron—*Crossed Barbel.*

Dr. Regel says—This is grown about St. Petersburg and in the Provinces to the south of Moscow. It is an apple of from small to medium size, a yellowish-green in color, with red on one side in splashes and stripes. Farther south it is more highly colored. The flesh is tender and sweet, with a kind of bitter aftertaste, which it loses when fully ripe. The tree is upright, bears plentifully, and does not suffer during cold winters at St. Petersburg. It ripens in the beginning of September, and keeps some months later. Recommended for home use only.

(202) Saitschia Pipka—*Hare Pipka.*

Dr. Regel says—This is grown about St. Petersburg, and, it seems, in the coast Provinces also. An oblong conic apple of medium size, green or greenish-yellow, with some red in splashes. Flesh is white, tender and juicy, and has an agreeable vinous flavor. The tree grows to a large size, and stands the climate of St. Petersburg well. A table apple, that keeps till winter. According to Baron Tiesenhausen, not productive.

(203) Arkad—*Arcade.*

Dr. Regel says—This is grown at St. Petersburg and Moscow. It is below medium in size, light yellow, with perhaps a little red. Firm, very sweet, with nice aftertaste. It ripens the first of September and keeps till December. Tree hardy, but not productive. On account of its good sweet flavor, it is liked for dessert and cooking.

(204) Rubez—*Cut Apple.*

Dr. Regel says that this is grown in the Provinces of St. Petersburg and Novgorod. A greenish and afterwards a yellow-green apple, with more or less red dashes, which often cover the apple on the sunny side. The flesh is white, vinous acid, with slight aftertaste. A cooking apple, in season from September to January. Tree quite hardy at St. Petersburg. Fruit about medium size.

(205) Karabowka—*Karaboff.*

Dr. Regel says that this grows from St. Peterburg to the south of Russia; a little green apple, no larger than a crab, with some red on one side. A summer apple, with an agreeable sweet taste. It is one of the earliest, and is very much liked, and hence sells at high prices. The tree stands the coldest winters and bears well.

(206) ZARSKI SCHIP—*Czar's Thorn.*

Mr. Webster says—An extremely hardy tree, the scions and spurs having a peculiar stiff thorny appearance. Fruit, large, coarse, watery, bitter and worthless. I think there is some mistake here. Mr. Tuttle describes it as sweet apple. Ellwanger & Barry received it from Moscow. They describe it as a large, oblong, sweet apple; skin, red and yellow. If sweet, and nearly all yellow, it is very like that which we saw on the Upper Volga.

Dr. Regel speaks of this as a pale yellow apple with light dots. Flesh, greenish white, tender, juicy, and sweet. It seems to be above medium in size, oblong, and very conic. According to Krasnoglazov, and other apple dealers in Moscow, it often becomes transparent. Young trees suffer in severe winters at St. Petersburg. Dr. Regel thinks it is grown all through the South Provinces, but in small quantities only.

Dr. Regel describes the Moskovskoe Tsarskui Schip as a small or medium sized yellow, conic apple, with yellowish-red side; agreeably sour. September.

The Tsarskui Schip Ploskui is a good sized, roundish, conic apple, from Yamburg and Dorpat. Yellow, all one color; sweet, with a somewhat bitter aftertaste. It bears lots of fruit, but good only for cooking; from September to December.

Dr. Regel does not seem to describe the apple Mr. Budd and I saw upon the Volga.

(207) STUPKA—*Stoupka.*

Dr. Regel speaks of this as growing in the Province of Moscow, also at Yamburg, near St. Petersburg. A small or medium-sized apple, pale yellow or lemon-colored, usually all one color, although it sometimes has a faint blush on the sunny side. Flesh, pure white, sweetish. A good kitchen apple; ripe the end of September, and keeps till January.

(208) KOROLEWSKOE—*Royal.*

Dr. Regel says this is grown in the Provinces of St. Petersburg and Pskov. A pale yellow apple, of full medium size, roundish, or very slightly oblong. Basin, wide, shallow and wrinkled; stalk, long; flesh, tender and sub-acid, and soon becomes mealy, and when mealy it is very apt to burst. In good years it becomes transparent, and then has a vinous sweet taste. It ripens in September and does not keep long. The tree has been injured during each of the severer winters at St. Petersburg.

(210) RUBEZUINOGRADNI—*Cut Wine.*

Size and shape of Maiden's Blush; a sharp acid apple, with some flavor. October.—*Webster.*

This, says Dr. Regel, is grown in the Province of St. Petersburg. It

would seem from the wood-cut in Dr. Regel's book to be an apple of about medium size. When upon the tree, it is green; when ripe, yellowish green, sometimes with a nice red cheek. The flesh is greenish white, tender and agreeable, and sub-acid. A good Autumn table and cooking apple, said by some people to keep till the end of February, but the samples Dr. Regel had rotted in October.

(212) BERKOWSKOE—*Berkoff.*

Fruit much like German Calville, probably the same.—*Tuttle.*—See 324.

Dr. Regel states that the Borkovskoe came from the village of Noronov, in the Province of Novgorod, whether it had been brought forty years previous from the village of Bork.

A rather large apple, and judging from the plates given, roundish, but somewhat irregular and ribbed. The fruit is yellow, and usually half covered with a blush of bright red, which it maintains even when growing in the shade. The flesh is reddish, tender, juicy, and sweet; useful for kitchen or table. On account of its fine appearance, good quality, and sweet taste, it sells at high prices. It ripens about the 15th of August, and keeps about six months. The tree seems quite hardy, bears heavily for two years, and then takes a year's rest.

(213) STEPANOUKA—*Stepanoff.*

Dr. Regel speaks of this as grown by Mr. Timofiev, in the village of Naronov, Province of Novgorod. A yellowish-green apple, with perhaps a faint blush, and some marbling of red. Flesh, tender, very sweet; good for cooking. It ripens in August and keeps till November. The tree is large, both tall and spreading, and does not suffer during the severest winters. This is a medium-sized apple, roundish, and slighly conic. It is strikingly like 374 Pendent Ear, and was obtained by Dr. Regel from the same orchard.

(214) SADOWSKOE—*Garden.*

A smooth, green, crude, fall apple; sweetish, or very mildly acid; fruit, medium in size and quality.—*Tuttle.*

Dr. Regel says this is grown from St. Petersburg to the country to the south of Moscow. A roundish apple, full medium or largish in size; a pale yellow-green, with just a little red on the sunny side, with a few carmine stripes; flesh, white, tender and sweet. Good for cooking. Ripe in September, and keeps till November and December. The tree is small, spreading, and stands the winters well.

(215) KUSTOE—*Bushy.*

Dr. Regel speaks of the *Kisloe* as growing in the gardens of the Province of St. Petersburg. A rather small-sized, yellowish apple, with some red; a nice looking fruit, but not recommended on account of its lack of quality.

(218) FOKINSKOE—*Fokin's.*

Dr. Regel describes Vochinskoe from samples received from Mr. Vochin, of Pskov. A rather small green apple, with a little red on one side; juicy, and sub-acid; worth growing for dessert or cooking.

(219) BELAJA TEBEDKA—*White Swan.*

"A large good-looking fruit, rather acid on June 28th," says Mr. Saunders, Washington.

(220) SCHOLKOWKA—*Silken Apple.*

A handsome fruit, nearly white, of fair size and good quality; season, September.—*Sias.*

Dr. Regel mentions this as growing in the Province of Moscow, and southward. A small, very conic apple, mostly deep red. Flesh, white, a little reddish under the skin, tender, quite juicy, vinous sweet, with an aftertaste like strawberries. A very fine table-apple, which ripens in August and the beginning of September, and keeps till November and December.

(225) GETMANSKI BOB—*Getman's Bean.*

"Tree," says Mr. Webster, "a slow grower, of peculiar irregular spreading habit, and a tardy bearer. Fruit, large to very large; striped, magnificent, firm, crisp, and of most excellent flavor. Season, October." Mr. Tuttle says, it is one of the best trees, and speaks of the fine size and appearance of the fruit, and its probable market value. The fruit, as I saw it at Mr. Tuttle's, showed the size, angularity, flatness, and conicness of the *Anis*, of the striped or mottled type, but the fruit as I saw it, was below par.

Dr. Regel received this from the Pomological Gardens at Voronesh. Some young trees lived through the severe winter of 1866-67, others did not.

(226) RUBEZ BELUI—*White Cut.*

Dr. Regel mentions this as growing in the Provinces of St. Petersburg and Moscow. A roundish conic apple, of from medium to large size. When fully ripe, a whitish yellow. The flesh is greenish-white, or white, and at first a vinous acid; later it becomes mealy, and sometimes bursts. It ripens in September, and may be kept till mid-winter, but samples kept in a light room rotted in October; good for dessert or cooking.

(228) KRIMSKOE WOCHINA—*Vochin's Crimean.*

Dr. Regel describes this only from samples grown by Mr. Vochin, at Pskov. It is a yellowish-green, and when ripe, waxy yellow, with more or less red on the sunny side. Flesh, pure white. very juicy, a very agreeable vinous acid, with fine aftertaste. One of the best Russian table apples. It ripens the end of September, and keeps till the end of February. Mr.

Vochin had received it as the Krimskoe, and as there are other apples under that name, Dr. Regel named it Vochin's Crimean. Its hardiness and productiveness are not stated. Judging from the woodcut and colored plate, it is an apple of full medium size.

(230) TITOUKA—*Titus.*

I do not know of this having been fruited. An apple known as Titovka is grown along the Volga and throughout Middle Russia. We saw it everywhere and in quantity. Mr. Budd described it as the "market woman and car boy apple" of those regions. In Western Russia, however, another apple is known as Titovka.

Ellwanger & Barry received their Titovka from Moscow. They describe it as a large, handsome fruit, resembling twenty ounce, and they say it is the largest and showiest of the new Russian varieties which they have tested thus far. A specimen sent by them to Ames, Iowa, was tested by Mr. Budd and myself. It is strikingly like Zolotoreff, a sample of which I had brought from Mr. Tuttle's, but seemed different in flesh. A sample lately sent by Mr. Goegginger to Mr. W. Evans, of Montreal, would seem to be this same apple, the same I believe as that described and pictured by Dr. Regel in his Pomology.

Dr. Regel says, that this apple originated at the little hamlet of Titov, between Tula and Kaluga, and received very favorable notices from the journals of some of the Moscow societies. He says it is grown from St. Petersburg southwards. Dr. Regel speaks of it as green when on the tree, afterwards as becoming a yellowish-green or lemon color, with some red in the sun, and blood-red in the South.

Dr. Edward Jankowsky, Director of the Pomological Gardens at Warsaw, in his "Sad i ogrod owocowy," says: "In Poland it is known as the Toulski, or apple from Tula." He describes it as large, beautifully yellow, nicely blushed or painted dark red, with large or small stripes; tender and very good. Mr. Budd thinks that the Titovka received from Voronosh is not the same in leaf as that of the Department.

(231) SOLOTOI ARKAD—*Yellow Arcadian.*

Dr. Regel mentions this as growing in the Provinces of St. Petersburg and Riazan. It is a roundish, slightly flattened apple, scarcely medium in size; pale yellow, sometimes with a tinge of orange red, with an agreeable mingling of vinous sweet and acid. Dr. Regel can recommend it for dessert and cooking. It is especially valued for bottling in water. It ripens in September, and in a light room does not keep later than the 15th of October. Baron Tiesenhausen says it keeps till March. The tree is a rapid grower, and was injured only in the very severe winter of 1866-67.

Mr. Saunders sends me a tracing of this taken in the Department Grounds at Washington, which is over $3\frac{1}{2}$ inches wide and 3 inches deep. Mr. Saunders says that it is an apple of good size, deep yellow, striped with red; flavor not high, but a good cooking fruit. This is the Golden, rather than the Yellow Arcadian.

(234) MUSCATELNOE—*Muscatel.*

Dr. Regel says this may often be found in the gardens in the Province of St. Petersburg, also in those about Moscow and beyond. It is a pale yellow apple, the sunny side and often the whole surface being covered with yellowish-red, with some stripes. The flesh is white, sometimes a little red, tender, vinous sweet, with a very agreeable aftertaste like raspberries. A good autumn apple, for dessert or kitchen use; in season from December till January. The tree grows to a large size, and does well in the climate of St. Petersburg.

(236) ANTONOUKA—*Anthony.*

The Antonovka is the king apple of the Russian Steppes, and I hope this apple in the Department list is true to name. That received by Mr. Budd from Moscow, St. Petersburg, Riga and Voronesh, and perhaps elsewhere, all seem true to name, but he has not scions of it from the Department. Mr. Tuttle showed me good healthy trees in an orchard adjoining his own. They were not in bearing, but the fruit borne last year answered my description exactly. The Antonovka of Ellwanger & Barry is true to name, but it was received from Moscow.

Dr. Regel says:—This is one of the most highly prized and widely grown apples in Russia. It grows in the northern part of the Province of St. Petersburg, at Valaam, along the Baltic Sea and in Eastern Russia. Mr. Krasnoglazov states that it was brought from Kursk to Moscow by an uncle of his of the same name, and named after him, but it is known in the Ukraine as Antonovka, and it is necessary to uphold that name. Dr. Regel speaks of it as sub-acid with an agreeable aftertaste, firm and juicy. It ripens in October and keeps till July, and is a delicate dessert fruit. This tree grows so readily in the North, and has such a combination of good points, that many grow scarcely anything else. It is very much liked by the people and brings the highest prices.

(240) TESCHANKA—*Lieby.*

Mr. Oliver Gibbs, of Lake City, Minn., speaks of this as growing in his neighborhood, and closely resembling 378 Hibernal and 472 Ostrekoff's Glass both in tree and fruit. The tree is spreading and irregular in growth, such as nurserymen dislike. Fruit large, rather

flat in shape, tapering toward calyx; color red and streaked. Of these, Lieby is a little the ripest. They are good, sub-acid cooking apples. (There is some confusion here.) Mr. Sias says this is identical with 374 Pendant Ear. Tree hardy, free from blight, of Duchess type and a good annual bearer. It was exhibited at the winter meeting of the Minnesota Horticultural Society, at Minneapolis, by a grower from Carver Co., Minn., but past its season. Pulp loose, coarse in texture and somewhat astringent.

Dr. Regel says that Lejanka is grown in the Provinces of Moscow, Riazan, and Kursk, and elsewhere. Judging from the woodcut and colored plate given, it is an apple of rather large size, and would seem to be somewhat of Alexander form and colored somewhat like it. Flesh, firm, greenish white, sour, with a slightly astringent aftertaste. It ripens in October and keeps all winter. Good for cooking.

(242) SCHRIOKOLITSCHIKO—*Broadleaved.*

Dr. Regel says that this is growing in the Province of St. Petersburg, and, according to Baron Tiesenhausen, was brought from Dorpat. Judging from the woodcut and plate in Dr. Regel's book, it is one of the largest and a rather handsome fruit. It is a yellowish-green, and later yellow; on the sunny side dull, or more lively red, in stripes and splashes. The flesh is white, tender, acid, with a bad aftertaste; useful only for cooking from September to January. The tree seems quite hardy at St. Petersburg.

(245) BOROUINKA—*Mushroom.*

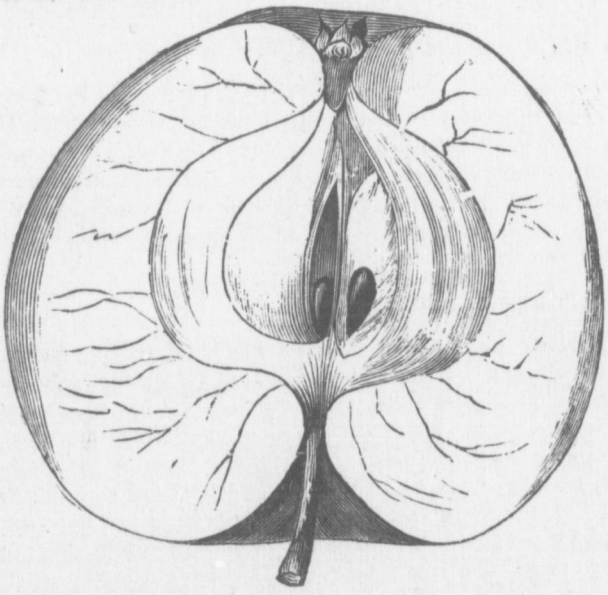
Mr. Budd says—Like Duchess, but a month later.

Dr. Regel speaks of the Borovinka as one of the most important of the Russian apples, and says it is grown largely as far as the Provinces to the south of Moscow. It has been grown even at the convent of Valaam, on Lake Ladoga. The tree is large and spreading, and stands the coldest winters of the St. Petersburg climate, bearing fruit every year, and bearing very heavily alternate years. This tree is named after the family of Borovinyh, in the Province of Tula. The fruit is large, lemon-colored, with marblings, splashes and stripes of bright red. When uncolored, owing to wet weather, it is known as the White Borovinka, and different names are given to it according to its size and color. The flesh is white, sometimes tinged with red; tender, agreeably sour, with a very nice aftertaste. Some specimens Dr. Regel had, decayed in September; others kept until the beginning of December. An opinion, cited by Dr. Regel, gives to the Borovinka a place second only to Antonovka.

In my report on Russian fruits, I had spoken of Borovinka as the family of which the Duchess of Oldenburg is a member. In this catalogue the Duchess appears under all sorts of names, yet we did not see the Duchess in Russia, neither have I been able to find out the Russian name for it. In the Pomology by Dr. Regel, of the 144

apples, of which a colored print is given, the Duchess certainly does not appear.

The "Sad i ogrod owocowy," by Prof. Jankowsky, of Warsaw, gives a description of Charlamovskoe, which is very like Duchess, noting also that it is known to the French as Borovitsky. In the "Dutche Pomologie," by W. Lauche, of the Pomological Gardens at Berlin, there is a beautiful colored print of Charlamovskoe, which one can hardly believe to be other than Duchess. The description too is Duchess, and among the synonyms are Borovitsky and Duchess of Oldenburg. I think I have thrown enough light on this subject to make the darkness visible.



BOROVINKA.

(246) PLODOWITKA—*Prolific.*

A good cooking apple but a little bitter.—*Spaulding.*

Dr. Regel says that this is grown about St. Petersburg, and in the Coast Provinces, and at Pskov and Moscow. A roundish apple, about medium in ize, and somewhat ribbed. When ripe, yellowish-green, with some splashes and stripes of red on the sunny side. The flesh is greenish-white, vinous acid; before fully ripe, very acid; in a good season it has an agreeable vinous taste. Good for cooking or bottling in water. It bears every year, and stands the winters well. It ripens about the 1st of October and keeps till spring. Samples, however, kept in a light room, did not keep longer than December.

(247) POPOUKA POLOSATAJA—*Popoff's Streaked.*

A mild sub-acid, aromatic dessert apple; size medium or small, yet not of special value.—*Webster.*

Dr. Regel says this apple grows at Strelna, about thirteen miles southeast of St. Petersburg. Baron Tiesenhausen says also at Dorpat. A fruit scarcely medium in size. and, judging from the wood cut, very slightly oblong. When fully ripe, it is a golden yellow, with a blush on the sunny side, upon which are dark carmine stripes. It is also speckled like a trout. The flesh is white, reddish under the skin, juicy, and a vinous acid, with a very slight astringent after taste. When not perfectly ripe it is very sour. The tree is hardy and productive, ripens in September. and keeps till December, but soon spoils in a light room. For home use only.

(248) BEEL—*White.*

Dr. Regel says this is grown in St. Petersburg, and from the Baltic Provinces to the South Provinces of Russia. It is a medium, or small-sized, greenish-yellow or lemon-colored apple, all one color. The flesh is white, tender and juicy, an agreeable vinous acid taste, without aftertaste. An autumn apple, of use for dessert and kitchen. It ripens in September and keeps till December. The tree bears abundantly, and endures the worst winters in the climate of St. Petersburg.

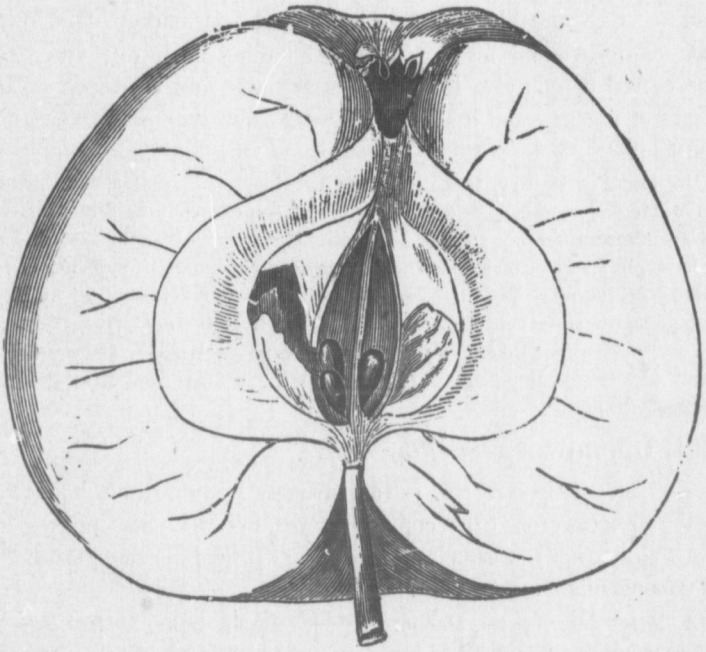
(252) APORT—*O'Porto.*

Dr. Regel says this is one of the most popular of Russian apples, grown at St. Petersburg and southward into the Baltic Provinces. In color it is green and yellowish-green, often with more than half the apple covered with red. Flesh yellowish-white, juicy, and after it is ripe a tender, vinous acid, with a nice agreeable aftertaste. Dr. Regel says Aport is one of the most generally liked of table apples. It ripens in October and keeps till May, and with care it may even be kept till July. It sells at high prices on account of its high color and attractive appearance. From Dr. Regel's colored plate it is clearly of Alexander type.

Among the many synonyms given by Dr. Regel to this apple, I find Titovka, and also Kaiser Alexander, of the German Pomologists. The Kaiser Alexander described by Mr. Jankowsky and by Mr. Lauche is very like our Alexander, most probably it, slightly modified by climate.

Dr. Regel speaks of the *Alexandrovskoe* as grown to the south of Moscow, and describes it from samples in the collection sent by Mr. Botvinsky. It seems to be an apple of Alexander form, but much smaller, and with a singularly long stalk. A yellowish apple with a little red on one side, hard in texture but afterwards becomes tender and vinous acid. Ripe in September, and does not keep long.

The Aport of Ellwanger and Barry, received from Moscow, is not of Aport type. It is a good sprightly apple. Ripe in August.



APORT.

(261) APORT REPTSCHATI—*O'Porto Turnip Seedling.*

Dr. Regel speaks of this as growing in the Province of St. Petersburg and in the southern parts of Russia. A medium or largish flat conic apple, somewhat ribbed; greenish, with a good deal of dark red. The flesh is greenish-white, agreeably vinous acid, with a nice aftertaste. The tree is large and spreading and is able to stand the severe winters at St. Petersburg, and has even been grown at Valaam. A good fruit for dessert or home use. It ripens in October and keeps throughout the winter. Samples which Dr. Regel kept in a light rroom, however, rotted in November. I notice Alexander-Aport among the synonyms of this apple; the colored plate in Dr. Regel's book shows a certain family likeness.

(262) CHARLAMOWSKOE—*Charlamoff.*

"An early fall apple, large and oblong, streaked with red and of excellent quality," says Mr. Oliver Gibbs, of Lake City, Minn. Mr. Webster speaks of the fruit as "large and handsome, resembling Duchess, but more conical in form, less acid and of much better flavor." Strange enough, the above two descriptions are exactly that of the Titovka, of Middle Russia. Mr. Webster, on reading my description of the Titovka we saw in Russia, at once thought of Charlamoff. However, with Mr. Webster, Charlamoff soon turns watery and rots,

and hence is valuable only for a quick and near market. Mr. Webster queries whether his slaty soil has anything to do with this. He has ceased to cultivate it. The Titovka we saw in Russia in all stages of ripeness, and it showed no weak point such as Mr. Webster speaks of.

Dr. Regel says that this apple originated at Tula, whence it spread throughout Russia. It is quite large, and sometimes measures thirteen inches in circumference; yellowish, without any red. Phlotov describes it as having red stripes on the sunny side, but the Charlamoff of Krasnoglazov, of Moscow, has no stripes. It is mildly acid, and ripens at the end of August. Krasnoglazov says that the tree is tender, but trees received from Moscow did not suffer at St. Petersburg during the winter of 1866-67, and are doing well. Dr. Regel cannot say if this is the same as the Charlamovskoe of Germany or not.

(264) DUCHOWOE—*Smelling Apple.*

Mr. Sias says:—"A No. 1 fruit, strongly perfumed, almost equal to the sweetest rose; the color of Red Gilliflower and the size of Black Gilliflower; season, last of August. It died because grafted on an uncongenial stock."

Dr. Regel describes the Duchovoe, from samples from the Province of Tchernigov from Baron Tiesenhausen, a yellowish-green or yellow apple, with a good deal of red on one side and rather above medium in size; flesh white, juicy, agreeable and vinous acid; a fine looking fruit, good for table and cooking; ripe in September and keeps till December; not highly perfumed.

(265) PIPKA GOVKAJA—*Butter Pipka.*

Dr. Regel says this is grown about St. Petersburg, also in the garden of Mr. Atriganiov. A small, roundish oblong, conic apple, sub-acid, with slightly bitter aftertaste; in season from November to December. Good for bottling in water.

This should have been translated *bitter*, not butter pipka.

(266) POLOSATOE NOWGORODSKOE—*Novgorod Streaked.*

Dr. Regel speaks of this as growing in the Province of St. Petersburg and in the country to the south of Moscow. A medium-sized apple, with a good deal of dull red on the sunny side. Flesh soft and sweetish, and used for cooking from September till December. The tree is upright in growth, bears a good amount of fruit every second year, and is not injured by the coldest winters of the St. Petersburg climate.

(268) SAKARITNOE—*Saccharine.*

Dr. Regel describes this only from samples from the garden of Mr. Atriganiev in Tchernigov. It is a largish, oblong ovate, irregular apple,

yellowish-green, with a yellowish-red side with some splashes. The flesh is white and very agreeably vinous acid. A splendid table apple, which ripens in September and keeps till December and longer. It seems to be hardy at St. Petersburg, although young trees were injured during the winters of 1866-67.

There is some mistake in my notes or elsewhere, as a sour apple could not be known under such a name.

(269) Aport Rosowui—*O'Porto Rosy.*

Dr. Regel describes this from specimens received from Mr. Atriganiev, in the Province of Tchernigov. A medium-sized, roundish pale-yellow apple, with red on the sunny side. Flesh as white as snow, tender, acid; useful for either table or cooking. Ripens in October and keeps till January and even longer:

(272) Schapotschka—*Little Hat.*

Dr. Regel describes this from samples received from Mr. Atriganiev, in the Province of Tchernigov. A globular fruit of full medium size. On the sunny side a pale blush with a good deal of dark red in stripes and splashes. Flesh greenish-white, juicy and a little sweet. A good-looking fruit, which ripens in September and keeps till December. For home use only.

(274) Rosowoe—*Rosy.*

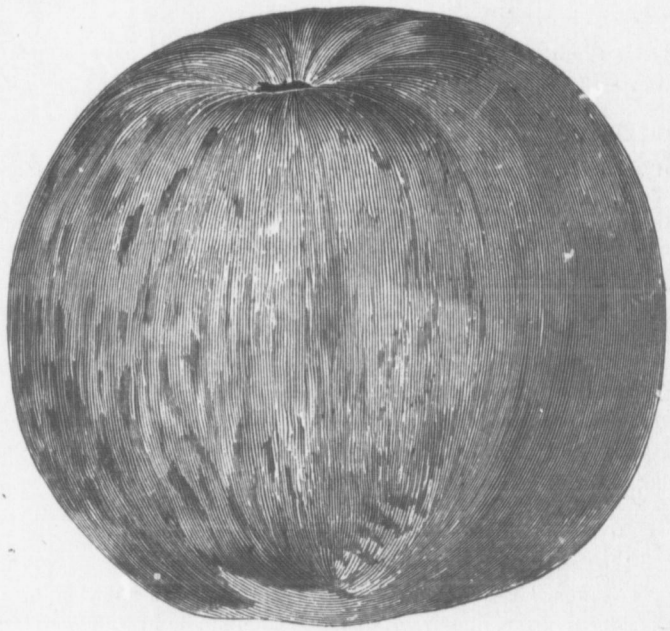
Dr. Regel received this from Mr. Atriganiev, in the Province of Tchernigov; also from Baron Tiesenhausen, of Yamburg. An apple of medium size, yellowish-green, mostly covered by a carmine blush, with splashes and stripes. Flesh white, sometimes stained with red, tender and juicy, vinous-sweet, with a fine aftertaste. When fully ripe it loses its juice and begins to decay inside. A fine-looking dessert apple, of excellent quality. It ripens in December and may be kept about two months.

(275) Sototoreffka—*Zolotoreff.*

Mr. Tuttle thinks highly of this as a fall market fruit. It is a large, cylindrical, showy apple with a good deal of color. Flesh a little coarse, but juicy and spicy, with a good mingling of sweet and acid; keeps till November. Mr. Webster speaks of it as a large, showy apple, very productive, and ripe in October, but flattish in form and oblong; and a specimen sent by him to Mr. Tuttle was not recognized by Mr. Tuttle as the same apple. Mr. Downing has expressed a favorable opinion of Zolotoreff, but of which I do not know.

Dr. Regel speaks of this as growing in the fruit gardens about Moscow and in the provinces to the south—Tula, Tchernigov and others. It is a medium or large-sized yellowish-green or greenish-yellow fruit, blushed with red on the sunny side. I believe there is no mention, in the description, of the red

appearing in splashes or stripes. The flesh is a vinous-sour or vinous-sweet, with a very agreeable aftertaste, like a Reinette. It ripens about the first of October, and keeps all winter.



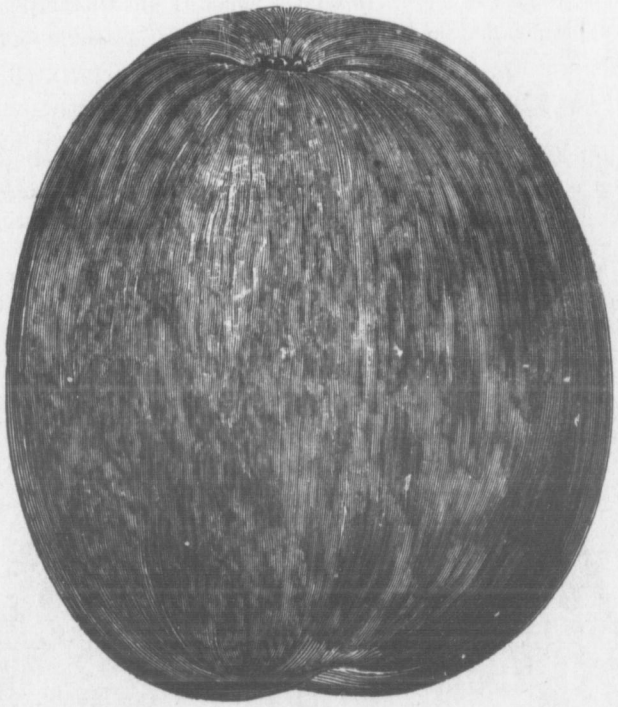
VARGUL.

(277) Wargul—*Wargul.*

Dr. Regel says that the Vargul is one of the most popular apples at Voronesh. When fully ripe it is a yellowish-green, with red on the sunny side, covering half to three-quarters of the fruit. The flesh is white, soft, juicy and somewhat acid, of agreeable brisk flavor, with nice aftertaste. For its good looks, and its good flavor, it is much liked both for the table and kitchen. Season from October till the end of winter.

(278) Borowinka Krasnaja—*Red Mushroom.*

Dr. Regel speaks of this as growing in the provinces to the south of Moscow, and says that it is often mistaken for Borovinka. The skin is a dingy yellow, the sunny side, and sometimes the whole apple, being covered with a lively dark red, upon which are splashes of carmine, or dark blood-red. The flesh is usually a little reddish, tender, very agreeably acid, with a nice aftertaste. It is a good and handsome table apple; in season from November to December. Judging from the plate in Dr. Regel's book, it is a fruit of full medium size, roundish, and sometimes slightly oblong; a very beautiful fruit.



WINTER APORT.

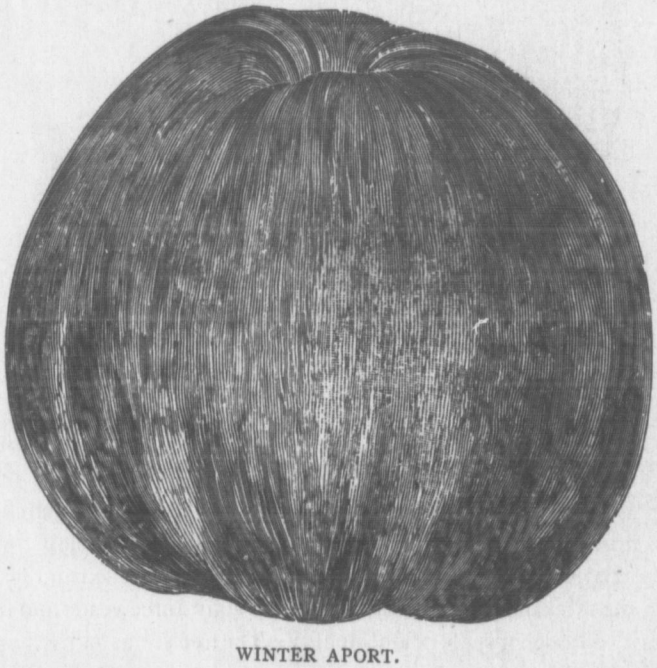
(279) APORTOWOGE SIMOWOE—*Winter O'Porto.*

This apple did not suggest to Mr. Sias any Alexander parentage. The fruit was below medium in size when grafted on Hislop crab; a trifle above medium on apple roots. It is more flattened and less red than the Alexander. Mr. Sias has fruited it for three years, and rather likes it, although it is not of fine quality. The tree seems hardy.

Among these winter Aports in Russia we find some remarkably good apples. In the Kozlov market we tasted one which was just like Alexander in appearance, but tough in texture, a mingling of sharp acid and sweet; an apple of fine quality, and evidently a good keeper. Dr. Regel describes an Aport which keeps from October till May. Mr. Schroeder, at Petrovskoe Rasumovskoe, near Moscow, says Aport, or Kaiser Alexander, is aromatic in flavor and keeps till spring. Mr. Wagner, at Riga, notes his Aportapfel Grosster as a late winter apple. I men-

tion this because Emperor Alexander, which is but another name for these apples, should be imported for trial from all possible sources in Russia.

Dr. Regel describes Winter Aport, from samples received from the garden of Mr. Atriganiev, in Tchernigov. In color, a light green, and on the sunny side a dull dark red, covered with carmine in splashes and stripes, covering often three fourths of the surface. Flesh greenish white, rather crude, sour. A good kitchen apple which keeps all Winter. The colored print as given in Dr. Regel's book, is strikingly like that which we saw at Prince Gagarine's, at Tenki, on the Volga; a large, handsome, oblong, winter apple. This apple as noted in my report on "Russian Fruits" is very like the Titovka of the Volga and of middle Russia.



WINTER APORT.

Another Winter Aport is described by Dr. Regel. A large, flattish conic, ribbed apple, somewhat of Alexander type, though not as much so, judging from the plates in Dr. Regel's book, as Aport (252). It is described from samples from the Provinces of Pskov and Vladimir. It is a pale yellow, mostly covered with splashes of light and dark red. The flesh is white, firm, very agreeably acid, with nice aftertaste. It is valued on account of its fine size and delicate flavor. One of the best dessert apples. It ripens in September, and keeps till December and January, though specimens kept in

a light room rotted about the end of October. Young trees at St. Petersburg only suffer during such unusual winters as 1866-67.

(282) Renetto Woroneschski—*Woronesch's.*

Dr. Regel describes the Voronesh Reinette from specimens sent to him from that place. It seems to be an apple of full medium size or above; green or yellowish-green, often with some yellowish-red on the sunny side. The flesh is greenish-white, firm and juicy, with a delicious vinous-sweet flavor. An excellent table apple; in season from November till the end of winter.

(283) Slast—*Sweet.*

Dr. Regel mentions this as growing about St. Petersburg and in the Province of Pskov. It is an apple of full medium size, somewhat flat and conic, and somewhat ribbed. It is yellowish, with a few stripes of pale red; tender, and very sweet; very good for cooking; in season from September till January and later. The tree stands the severest winters at St. Petersburg, and bears plentifully every year.

(284) Steklianka Kremer's—*Kremer's Glassy.*

Dr. Regel saw this in the gardens at Czarskoe Selo, fifteen miles from St. Petersburg. It seems to have been named after Mr. Kremer, the gardener, probably, at the Imperial residence. It seems to be a medium or largish apple, pale yellow or a little red; flesh greenish-white, tender, and slightly acid; a cooking apple, which ripens in September and does not keep long. The tree suffers somewhat during changeable winters, and bears every year.

(285) Repristoe Walisonoe—*Turnipy Juicy.*

This is a large or very large, somewhat oblong apple, rather better in quality than Alexander and about as well colored. It carries well and keeps towards winter. A showy market fruit, which Mr. Tuttle values highly. It ripens with Alexander. Mr. Perry says "a large, oblong, red-striped apple of fair quality, resembles Alexander; season, September and October."

(286) Kremerskoe—*Kremer's.*

This I saw in Mr. Sias' orchard—a rather large, tender apple of good quality. Mr. Sias seems to think a good deal of it. Season probably about September.

As far as we know, says Dr. Regel, this has been grown only at Czarskoe Selo, fifteen miles from St. Petersburg. A medium or small-sized apple; when ripe a waxy yellow, with a little red on the sunny side. The flesh is white and very sour. The tree is of medium size, and does well in the climate of St. Petersburg, and bears a good crop of fruit every year. It ripens in September and keeps till November.

(288) MALINOWSKOE—*Raspberry.*

Mr. Tuttle says:—"Fruit of medium size, bright red, very beautiful; a mild, pleasant sub-acid when fully ripe. Flesh quite red."

Dr. Regel speaks of the Malinovskoe as an apple of which he had merely seen a sample from the garden of a farmer in the Province of Novgorod. I should describe it as a small apple with a large core. It is yellowish-green, and on the sunny side a reddish-yellow. Flesh sweet and of use for cooking. Ripe in September and does not keep long. Tree not hardy.

Another Malinovkoe is described by Dr. Regel:—A small-sized, round, reddish apple, grown about St. Petersburg and Moscow. Flesh white, often reddish under the skin, tender, juicy, agreeable, vinous acid, with a nice aftertaste. The tree stands the worst winters at St. Petersburg. The fruit is nice looking, and recommended for table use on account of its fine flavor. Season from September till the end of winter.

Mr. Saunders, of Washington, says:—"A small apple, very brilliant in color—crimson. Flesh white, very juicy, sweet and crisp." According to the cut given by Mr. Saunders, it cannot be the first given above. From the description given, it does not seem likely to be the second. See No. 340 for the Malinovskoe Lievlandskoe (Lievlander Himbeerapfel) is the Himbeerapfel or Malinovskoe of Mr. Goegginger, of Riga.

(290) UKRAINSKOE—*Ukraine.*

I saw this in bearing at Mr. Underwood's. The fruit was large and fine, though top-grafted on crab. I saw it in bearing at Vilna, in the West of Russia: a large apple like an uncolored Northern Spy. It has the name in Russia of being a hardy tree, yet a light bearer of apples of second quality that keep and ship well. I rather think this apple is true to name.

Mr. Perry, of Beaver Dam, Wis., says:—An apple of large size, in form and color like Northern Spy, plaited or ribbed at the blossom end; very showy; flavor, sub-acid; tree hardy, strong and upright. Season, September and October; however, if picked early, it might keep a month later.

Dr. Regel says this is grown in the Provinces of St. Petersburg and Moscow. A medium-sized apple, green when picked from the tree, afterwards a yellowish-green with dull red on the sunny side. Flesh greenish-white, granular; at first vinous acid, afterwards becomes sweeter and more agreeable. Good from September till January and later. The tree grows to a large size, and stands the coldest winters. In good seasons it may be considered a dessert apple, but usually is fit only for cooking.

(304) SUISLEPPER—*Switzer.*

Mr. Webster says:—Here we have a hardy, vigorous tree, a good bearer of handsome apples, valuable for home use and market. Fruit medium to large, often covered with red, juicy, half-fine, rather tender, with a fine sub-acid, slightly quince-like flavor, more like French than Russian apples; a good keeper for its season, which is September and October. Dr. Hoskins, however, notes the fact that, as it bears on the ends of its shoots, it is apt to drop off; other than that, he is inclined to think highly of it. It is certainly an apple of fine quality, and Mr. Downing says "undoubtedly valuable for home use and commerce."

Dr. Regel notes this as perfectly hardy as far as tried.

(315) HERRENAPFEL—*Lord's Apple.*

Mr. Tuttle describes this as a large fruit, the size of Blue Pearmain, with much the same color and bloom; a clear, strong, pleasant acid; an apple that hangs well on the tree, and keeps longer than Longfield. Mr. Tuttle also says that the tree is hardy and a good grower, so that he considers it one of the most valuable he has tested. Mr. Sias says that on Hislop Crab stock it is only medium in size, and not as good a keeper as Blue Pearmain. This is evidently an *Arabskoe.* The Riga catalogues contain both the names of Arabskoe and Herrenapfel, although Mr. Wagner does not mark either of them as late winter. Mr. H. Goegginger says that the Herrenapfel, or, more correctly speaking, the Polnischer Herrenapfel, is of medium size, red all over, of first quality, and a good market apple from October to Deeember. He says further that it is a hardy and a large tree, which bears very well, and he thinks very highly of it.

Dr. Regel received his Herrenapfel from Mr. Wagner and from Mr. Detrich, of Riga. His young trees stood the trying winter of 1866-67.

(316) ROTHE REINETTE—*Red Queen.*

This Mr. Tuttle believes to be the same as his Rennet Red. Fruit of good size, dark green with red side. Keeps till March.

(317) GOLUBINOE BEELOE—*White Pigeon.*

This is a small fruit, very conic in form, with wrinkled eye and no basin. A sweet apple, of fine, but very peculiar flavor, and of defective texture. Both Mr. Webster and Mr. Sias speak of the extra hardiness of this tree. Those who have fruited this do not speak of its defective

texture, I think I must have tasted an unfair specimen. Mr. Sias says tender and juicy.

(321) PIPKA SLADKAJA—*Sweet Pipka.*

An excellent, though under-sized, striped, autumn, sweet apple, that died from being grafted on an uncongenial stock.—*Sias.*

(322) KOVITSCHNEOE—*Browny.*

Like Duchess, but harder and later in season, and less acid.—*Tuttle.*

Dr. Regel speaks of this as growing about St. Petersburg, and as far as the provinces to the south of Moscow. The fruit is yellowish-green, and afterwards yellow, on the sunny side reddish, on which are many carmine stripes and splashes. Specimens grown in the shade have little or no red. Flesh white, or stained with red under the skin; tender, mildly acid, with a good aftertaste. A good table apple, but specially valued for cooking. It sells at good prices. Judging from the woodcut and colored plate given by Dr. Regel, it is a flattish apple of medium size, with rather shallow basin, much like the Koritschnevoe Polosatoe we saw in Middle Russia.

(323) REPOUKA—*Turnip.*

Dr. Regel says his samples were from Ropsha, the place where Peter the Great breathed his last. A medium sized, very flat and ribbed apple. Color yellowish-green, on the sunny side a yellowish-red, on which are some blotches and stripes. The flesh is greenish-white, very firm, a good vinous-sweet, with an agreeable aftertaste. Good for dessert and home use. It ripens in October, and in a warm room does not keep longer than the last of that month. The tree is quite hardy.

(324) NEEMEZKI KALVILLE—*German Calville.*

Mr. Webster says this tree is a fair grower, an early and abundant bearer. Fruit large to very large, flattened and ribbed. It is in its best condition from December to January, yet may be kept till March. Specimens brought by Mr. Webster to the Montreal Horticultural Society's Exhibition had much the appearance of the White Calville of France.

Mr. Perry says:—"This, to my mind, is Duchess of Oldenburg." Mr. Perry says he had twelve specimens on a transplanted tree, and will be able to report positively another year. This is evidently not the same as that grown by Mr. Webster.

Dr. Regel finds this tree not quite hardy.

330) POLOSATOE NALIWNOE—*Juicy Streaked.*

Mr. Sias says :—Fruit medium or above ; yellowish-white in color ; good in quality ; tree hardy ; season, last of August or beginning of September.

Dr. Regel says that this grows about St. Petersburg and Pskov. Judging from the woodcuts in Dr. Regel's book, it is a medium-sized, conic, yellowish-green apple with a little red on one side. The tree seems not quite as hardy as some other Nalivs.

(332) PLODOWITKA RAMAJA—*Early Prolific.*

Dr. Regel says that this is grown from St. Petersburg to the country beyond Moscow. It is a medium or small-sized flat conic apple, covered with red on the sunny side ; juicy and agreeably sub-acid. The tree stands the worst winters, and bears well every year. Good for cooking or dessert. It ripens in September and keeps all winter.

(333) SKWOSNOI KRASNOI—*Red Transparent.*

A sweetish apple of white Astrachan type, but more bright and attractive in color.—*Sias.*

(334) SKWOSNOI SCHOTOI—*Yellow Transparent.*

This is one of the best known of the apples in this catalogue, and has been propagated a good deal in place of Tetofsky. Now Charlottenthaler looms up as a rival both in size and earliness.

(335) SKWOSNOI SELENNOE—*Green Transparent.*

"Much like Yellow Transparent, but smaller and more conical, and the tree less vigorous in growth," says Mr. Webster. Mr. Tuttle says it is White Astrachan.

(336) SKWOSNOI BEELOE—*White Transparent.*

"Just like Yellow Transparent," says Mr. Tuttle ; "if any preference, I would choose the White." Mr. Webster discards it. Dr. Hoskins says "considerably smaller than Yellow Transparent ; whiter, rounder and better in quality ; very like Early Harvest."

(337) SCRINKA—*Grayest.*

I have not yet heard of this having fruited. It is a popular autumn dessert apple in the Baltic Provinces. Mr. Goegginger, of Riga, says that of the two kinds known as Serinka, the *red* is the valuable one. This, as received from Mr. Goegginger, is not the same as that received by Mr. Budd from St. Petersburg. The fruit sent by Mr.

Goegginger to Montreal this last autumn was mostly a dull red in close marblings and stripes. I mention this to enable the fruit to be identified.

Dr. Regel received his Sierianka or Glinistoe, or Lehmapfel, from Mr. Wagner, of Riga; it is grown mostly in the Baltic Provinces. It is above medium in size, greenish-yellow, splashed and striped with red; an excellent dessert apple. It is firm in flesh, and with good care keeps till the New Year.

(338) GRUSCHEFFKA REVELSKAJA—*Revel Pear.*

This I saw in the orchard of Mr. Sias. It is mild in flavor, being neither sweet or sub-acid, water-cored, but very nice; very good in quality for an apple of that type.

Dr. Regel says this is a fruit grown in the Coast Provinces, and brought from thence to St. Petersburg. The fruit is large on young trees, smaller as the trees get older. When grown in the shade it has very little color, and is then known as the Green Gruscheffka; when grown in the sun it has a few splashes and stripes of red. The flesh is white, juicy, an agreeable vinous acid, with fine aftertaste. The tree stands the severest winters at St. Petersburg and bears lots of fruit each year. It ripens in September and may be kept till December.

(340) HIMBEERAPFEL, LIEVLANDER—*Lowland Raspberry.*

"A medium-sized ribbed apple of pretty good quality;" says Mr. Tuttle.

Dr. Regel says he has only seen samples of this from the Baltic Provinces. Judging from the woodcut, it would appear to be an apple above medium in size and roundish conic. In color, says Dr. Regel, a dull yellow green, sometimes with dashes and spots of red. The flesh white, fine and juicy. It has scarcely any acidity, and has a slight degree of aftertaste suggesting the flavor of the strawberry. An excellent autumn table apple, that keeps from September till the New Year. This tree does not stand the coldest winters very well. Dr. Regel says this is the Himbeerapfel or Malinovskoe of Mr. Goegginger, of Riga.

(342) SCHARLOTTENTHALER GOLBA—*Charlottenthaler.*

This is perhaps the best of the family of which the Yellow, Green and White Transparent, and Red Duck are members. Mr. Webster also places Sweet Pear and Moscow Pear in the same group. In the opinion of Dr. Hoskins it is rather larger than the Yellow Transparent, and it is thought by some to be a little earlier. Dr. Hoskins, however, says not a day earlier. Mr. Webster says its season commences and closes ten or twelve days earlier than Red Astrachan. The word

Golba, is intended for Gelber, Yellow. Dr. Regel received this apple from Wagner, of Riga.

(343) WEINAPFEL ROTHER—*Red Wine.*

"This is much like Sops of Wine in appearance, and very handsome. It is below medium in size, quite acid and earlier than Duchess," says Mr. Tuttle. Mr. Webster says "a sharp acid fruit like Red Astrachan, perhaps a seedling of it."

(344) SULTANAPFEL—*Sultan.*

I am not sure that I know of this having been fruited from the Department List. This, or Grand Sultan, has been introduced from several sources. Ellwanger & Barry received theirs from Thomas Rivers, of Sawbridgeworth, England. Some say it is, or is like, White Astrachan. Dr. Hoskins, who received it from D. W. Adams, of Waukon, Iowa, in 1872, says "not at all like White Astrachan, but exactly like Yellow Transparent in tree and fruit, except that the latter seems less hardy than Yellow Transparent."

(350) LAPOUCH—*Burr.*

"A small or medium-sized flattish apple, yellowish-white; a tart, pie apple. A hardy tree and a good and early bearer," says Mr. Sias. Mr. Tuttle says "much like Red Duck in form, size and quality, but a month later and not as yellow. Tree a slow grower. No. 470 is the same in name, but whether like this or not I cannot say."

Mr. Perry describes *Burr*, whether 350 or 470 I cannot say, as a large, oblong, white apple, which resembles Keswick Codling, for which it is an excellent substitute. A fine, tender, sharp acid cooking apple; season, August; tree very hardy and a stocky grower.

Dr. Regel received this from Moscow. It was not injured in 1866–67.

(351) PLODOWITKA CAUDKAJA—*Prolific Sweeting.*

A yellow apple of medium or largish size. The best of the sweet apples for market purposes, says Dr. Hoskins. Mr. Webster says—The tree is of Tetofsky type, and very productive. An excellent sweet apple; ripe in August and September.

Dr. Regel says this grows in the Provinces of St. Petersburg and Pskov, a small, greenish-yellow apple with some red on the sunny side; flesh, white, soft, and somewhat sweet; use, cooking; season, September to January.

(354) KRIWOSPIZOE AROMATNOE—*Curly Spiced Aromatic.*

Dr. Regel speaks of having seen this at or from Mr. Vochin's, at Pskov, and also in the Imperial Gardens at St. Petersburg. It is a medium-sized,

apple, roundish, somewhat conic, and slightly ribbed. In color, yellowish-green; when fully ripe, the color of a lemon, with dashes of light and dark red, covering the greater part of the sunny side. The flesh is greenish-white, juicy, mildly acid, with very fine aftertaste. An excellent dessert apple, which ripens in September, and may be kept till the following spring. This apple is recommended for trial. Mr. Vochin has planted it largely. Young trees suffer only in very cold winters at St. Petersburg.

(355) APORT HERBST—*Autumn Orange.*

Mr. Sias showed this in good condition at the winter exhibition of the Minnesota Horticultural Society, from the 16th to the 19th of January last, and took second premium. Fruit, small, irregular in shape, dull greenish-yellow; not valuable, at least not on Hislop crab stock. The wrong translation of these names is much to be regretted.

(359) MOTSCHETSCHNOE—*Wetting Apple.*

Dr. Regel says this is grown in the Provinces of St. Petersburg, Pskov, and Moscow. An oblong conic apple of medium size. When fully ripe, yellow, with a faint blush; juicy, tender, and agreeably sub-acid. It ripens at the end of September, and keeps till late winter. It is especially good for bottling in water.

(360) FUNTOWOE—*Pound Apple.*

Dr. Regel describes this only from samples received from Mr. Vochin's, near Pskov. A large, roundish, slightly conic apple. Judging from the colored plate, it looks a good deal like Cellini. When fully ripe the skin is yellow, mostly covered with red. Flesh, white, and agreeably acid, with a slightly astringent aftertaste. It ripens in September and keeps till midwinter.

(362) SWINZOFFKA—*Lead Apple.*

Dr. Regel says that this grows about St. Petersburg and in the Provinces to the south of Moscow. An apple of medium or scarcely medium size; green or yellowish green, with a little dull red on the sunny side. The flesh is white or greenish white, and when fully ripe, a vinous acid, with an aftertaste like a reinette. Fruit grown in the South has more flavor than that grown in the North. A fine table apple, which ripens end of October and keeps all winter.

(364) BEEL WOCHINS—*White Wochins.*

Tree, a slow grower, an early and good bearer of large, smooth, handsome, sub-acid apples, ripe in September. Not so good as Duchess for general culture, says Mr. Webster.

Dr. Regel only saw samples of this grown in the gardens of Mr. Vochin and Baron Tiesenhausen. It is below medium in size; when fully ripe a waxy yellow, all one color, except a little red around the cavity. Useful for dessert or cooking, and in season from October till December.

(367) POLOSATOE—*Red Streak.*

Dr. Regel speaks of this as growing in the Provinces of St. Petersburg and Moscow. A large, roundish, conic apple. When fully ripe, a greenish-yellow or lemon color, with a faint blush on the sunny side, and some red stripes and dashes. The flesh is tender, juicy. and vinous acid, with a slight but good aftertaste; but if not fully ripe, then very sour and somewhat astrigent. The tree is pyramidal, and grows to a large size. It stands the winters well, but is not productive. The fruit is very large and good; it ripens in September and keeps till November or December.

(368) MIRONE SACHARNI—*Sugar Barbel.*

Mr. Webster says—A good bearer of medium-sized, striped, sweet apples; for general purposes not equal in value to Prolific Sweeting; otherwise, of value. Dr. Hoskins says—A small, brilliant red, nice sweet apple, but too small for practical value. It will not average one-fourth the size of Prolific Sweeting. Season, September.

Dr. Regel describes this as an apple that is thought a good deal of at Moscow. It is an apple of medium size or below; a yellowish-green, or yellow, with some dingy red in splashes, sometimes with a good deal of red on the sunny side. The flesh is tender, white, agreeable, and very sweet, and with an agreeable aftertaste. The tree stands the coldest winters at St. Petersburg, and hence is a favorite early apple, and brings a good price. It ripens in August and keeps till December. It may be said to be good for eating, though not strictly a dessert fruit.

(369) PIPKA—*Pipka.*

Dr. Regel mentions this as growing in a few gardens in the Province of St. Petersburg. A medium or small-sized, roundish oblong, conic apple; yellowish-green, and yellow on the sunny side. Flesh, white and sweet, with agreeable aftertaste. It ripens in September and keeps till December, but spoils in a light room the middle of October. The tree stands the severer winters well, and bears plentifully every year. Pipka Sacharnaja, No. 406, appears only as a synonym of Pipka.

(371) SKRUT DEUTSCHER—*Skrout German.*

Dr. Regel says—This is grown from St. Petersburgh to the Provinces to the south of Moscow. A roundish apple, of full medium size. When on the tree it is yellowish-green, afterwards a pale lemon, with more or less red on the sunny side, and light or dark carmine stripes. The flesh is juicy and agreeable, mild, vinous acid; good for dessert or cooking. It ripens at the beginning of September, and keeps till January. Samples kept in a light room, however, rotted in October. It is well worth planting, as it stands the severest winters at St. Petersburgh.

(372) PETROWSKOE—*St. Peter's.*

Dr. Hoskins has characterized this as the Russian "Early Joe." He considers it better than Switzer, and the best of the Russian dessert apples of its season, which is during August and September. Mr. Webster says—A good bearer of small but handsome fruit, striped with red, fine in grain, of fine flavor for a Russian, better perhaps than Switzer, but does not carry as well. I also saw this fruiting at Mr. Underwood's. Mr. Perry says—A small striped apple of fine quality. September.

Dr. Regel says that this is often seen in the fruit gardens about Moscow. It was also sent to him by Mr. Vochin from Pskov. The fruit is quite large; when on the tree, quite green; when ripe, quite yellow, the sunny side largely covered with dull red. The flesh is white, firm, jnicy, with a slightly vinous acid taste. A good summer apple; useful for dessert and cooking, but even as early as the 15th of October, it began to decay, and one bad specimen spoils those near it.

(374) WISLOWCHOE—*Pendent Ear.*

Resembles Duchess in size and color, and is about as prolific, but too astringent. It is the same as 240—*Sias.*

Dr. Regel mentions this as grown by a peasant orchardist in the village of Maronov, in the Province of Novgorod. A roundish conic apple, of full medium size; greenish-yellow, with a faint blush. Flesh, firm, and not juicy; afterwards mealy, sweet, with an aftertaste like Anisovka. An autumn cooking apple.

(375) KORITSCHEWOE ANANASNOE—*Browny Pine Apple.*

Dr. Regel says—This is grown about Pskov and Novgorod, and thence towards the Provinces south of Moscow. A medium-sized apple, somewhat flat, very largely covered with dull red, with light and uneven stripings, though sometimes these stripes are not visible. The flesh is white, sometimes reddish under the skin; tender, vinous sweet, with a nice mild aftertaste. A good autumn table apple; in season from September to December.

(378) ORSIMUI—*Hibernal.*

Mr. Tuttle especially points out the good growth and perfect health of this tree, and thinks it worthy of trial in the colder climates. It is an early and good bearer of large and showy apples, blushed with red, and with large light dots. A good cooking apple, said to keep till December. Mr. Oliver Gibbs thinks highly of trees said to be of this variety, which he has found bearing in his neighbourhood.

Mr. Perry speaks of this as a roundish fruit, above medium in size;

yellow, with dark red, in stripes and blotches; sharp acid; December. Tree hardy and a young bearer, and a strong grower, rather inclined to branch on one side.

(380) GRUSCHEFFKA MOSKOLOSKAJA—*Moscow Pear.*

I would like to hear of this as having fruited, as in Russia, it would seem to be a favorite apple for early market. In Middle Russia, though small and white, its extreme earliness gives it value. At Kursk, we were told it was white in color.

Dr. Regel speaks of this as growing in the Province of St. Petersburg, and in the country beyond Moscow. It seems to be below medium in size; yellow with a good deal of red in splashes, and when grown farther south, mostly red. Flesh, white, sometimes reddish near the skin; tender, juicy, very agreeably acid, with a nice aftertaste, and this aftertaste is more perceptable in samples grown in the South. It is one of the earliest of apples. It ripens in August. A table apple much prized on account of its productiveness and its agreeable flavor.

(382) BUZKAFA SELONKA—*Russian Green.*

This I saw in the orchard of Mr. Sias. Without doubt an *Anis*, of the type of the Blue Anis of the Volga. It is a medium-sized apple, flat, conic, and five-sided. Flesh, crude, and as yet uneatable. The fruit I saw at Mr. Tuttle's was just like it. This variety should be tried in the far North.

Dr. Regel received it from Voronesh, probably from the Pomological Gardens there. Young trees suffered in Dr. Regel's nursery in 1866-67.

(387) DOBRUI KRESTIANIN—*Good Husbandman,*

Mr. Perry says—A fruit of medium size; green until fully ripe; about November, it becomes a rich, waxy white, sometimes with a bright vermillion cheek. Flavor, peculiar; spicy, aromatic, and delicious, but difficult to describe. The tree is hardy, and in the nursery a moderate grower. Leaf small and narrow. Mr. Perry predicts that this variety "has come to stay."

Dr. Regel speaks of this as growing near Moscow and to the south A small green apple with perhaps a little dull red on one side; an excellent table apple that keeps till spring and later. The tree is said to be hardy in Moscow, but young trees in nursery at St. Petersburg were injured during the winter of 1866-67.

(393) ZITSONNOE ZARSKOE—*Imperial Citron.*

A good grower and a great bearer. Fruit of good size and fair quality, but not of special value. Season, September.—*Webster.*

Mr. Perry says—A large, roundish fruit; yellow, covered with light red specks; very showy; mild sub-acid. Tree hardy. Season, August and September.

(398) KRUPNEENA—*Enormous.*

An apple of Alexander type, and perhaps the largest of the August apples. Mr. Webster has grown specimens of this, nearly 14 inches in circumference. It is striped with red, almost covered; oval, irregular in form; somewhat coarse, but of fair quality for so large an apple, and of good sub-acid flavor.—*Webster.*

Dr. Regel received it from Saratov.

(399) KRIMSKAJA SELONKA—*Green Crimean.*

Tree not thoroughly hardy, and of value only for cooking.—*Hoskins.*

Dr. Regel mentions this as having received no winter injury up to date.

(402) BORSDORFER—*Borsdorf.*

This is a German rather than a Russian apple, and a member of a large family. The tree has proved hardy and a good bearer with Mr. Webster. Both Mr. Tuttle and Mr. Sias say the tree is hardier than Fameuse. The fruit, from Mr. Webster's description, is from small to medium, of fair appearance; firm, and of fine texture, sub-acid, rich and good. Dr. Hoskins says—When perfect, it looks very much like Ben Davis in form and color, but smaller. A first-rate keeper, is for home use, rather small for market.

(407) TSCHERNOE DREWO—*Blackwood.*

A favorite winter dessert apple, which sells at extra price on the Volga, on account of its fine quality. If picked early and stored in a cold place, it keeps till mid-winter or later. With Mr. Webster it ripened early and did not seem of special value. Mr. Tuttle says it blights; Mr. Sias says good tree.

Dr. Regel mentions this as growing about Novgorod and Pskov, as well as in Middle Russia. It is medium in size or nearly so; greenish-yellow, with a little red; flesh, white, tender, juicy, agreeably vinous acid, with slight aftertaste. A good dessert and kitchen apple, which ripens in September, and keeps till February; in a light room, however, it begins to spoil in November. It is grown largely, and highly thought of in the Southern Provinces, and especially in Saratov and Tambov. In Moscow there are not many trees of it, because there it feels the severity of the winters, and bears very little fruit. At Tambov it is grown in such quantity that it is shipped from there in all directions. This has been named from the dark color of the bark of the tree.

(410) REPKA MALENKA—*Little Seedling.*

Mr. Oliver Gibbs says this is like Duchess in form of tree. He had seen it in his neighbourhood in perfect health, although growing close to other trees badly blighted. It is an abundant bearer; fruit small, quality unknown at that season. Mr. Webster speaks of it as an enormous biennial bearer, and if thinned the fruit attains a fair medium size; that it is too hard to be eatable till warm weather in spring, when it gradually ripens, and becomes tender, juicy, and of fair quality and flavor. Mr. Sias says that at the winter meeting of the Horticultural Society, at Minneapolis, it was the best keeper shown. It tasted fresh and tart, as if just picked from the tree. I saw this apple at Mr. Underwood's. It seems to be of the same family as the Bogdanoff, judging by its leaf as pointed out by Mr. Budd. The Repka of Ellwanger & Barry, received from Moscow, is a summer apple.

Dr. Regel speaks of this as growing in the neighbourhood of St. Petersburg. The apple is of small size, from an inch and a quarter to two inches in height, and from a quarter to half an inch more in width. On old trees the fruit is very small indeed. Dr Regel gives a woodcut of a sample from an old tree, an inch and a quarter by three quarters of an inch. On the sunny side of the apple there is a light yellowish blush, with some stripes. The flesh is white, tender, with an agreeable vinous acid. The fruit has always a nice taste; is ripe the beginning of September, and keeps till January.

This does not seem to be the long keeper sent out from Washington.

(413) SKRISCHAPFEL—*Cross Apple.*

This I saw in the orchard of Mr. Underwood, at Lake City, Minn. It is no doubt an *Anis*, of the Red Anis family. It was top-grafted on Crab, as is apt to be the case, and I was disappointed with the flavor of a prematurely ripened specimen. Mr. Oliver Gibbs, writing to me in November, says—"That apple you saw at Mr. Underwood's, and thought might be Anis, only from its lack of quality, turns out when ripe, to be red, high-finished, good, and a keeper. It is undoubtedly the Red Anis." The summer heat of Central and Southern Minnesota, in lat. 44 and 45, is no doubt much greater than that of the Upper Volga, from lat. 52 to above 55, and we may expect to find the fruit of those latter regions proportionately shortened in keeping qualities.

Mr. Perry says—Large and round, sometimes flat; color, yellowish-green, with pale red stripes; resembling Colvert's in form and color. Flesh, coarse, but mild and agreeable in flavor. Season, November. The tree is very hardy, but a slow grower. When root-grafted on Crab, it is crooked and inclined to bear when two or three feet high, but makes a good tree when top-grafted on Gros Pommier. (I fear there is some mistake here.)

Dr. Regel speaks of this as growing in the Province of Moscow, especially about Tula. A medium or small-sized apple, green or yellowish-green, with a little red on the sunny side. Flesh, greenish-white, juicy, vinous acid, and vinous sweet, with an agreeable taste like a reinette. A good table apple, which ripens in October and keeps, not only through the winter, but through the following snmmer. It is well worth growing, as the tree stands the severest winters at Moscow and St. Petersburg. Only such winters as 1866-67 injure young trees.

Mr. Schroeder, of Moscow, gives a like description of Skrischapfel, but what we saw in Russia, seemed a more solid, weighty apple than that growing at Mr. Underwood's.

(426) SWINEZ—*Lead Apple.*

Dr. Regel received this from Moscow. The fruit, if I understand rightly, is either oblong or high conic, but I cannot be certain of this. Color, whitish green; stem always short; flavor, sub-acid; an excellent cooking apple. The tree is small and round-headed, and bears every year. Trees received from Moscow had not received any winter injury whatever. Season from September to January.

(427) ANISIMOWKOE—*Anissim.*

Dr. Regel mentions this as coming from a town near Yaroslav, to the north of Moscow. A small, conic, yellowish-green apple, with red side; very mildly acid; good for preserving in water. Ripe the end of September. The tree grows to a large size, and bears each year, and is a good tree for the climate of Moscow.

(429) BOSKLONOWKA—*Bosklonoff.*

Sweet, bitter, and worthless.—*Webster.*

(433) ORLOWSKOE—*Orloff.*

Mr. Tuttle says this is White Astrachan. Trees received from Ellwanger & Barry, fruited by myself and by Mr. R. W. Shepherd, of Como., Que., seem to be White Astrachan. Ellwanger & Barry received theirs from Thomas Rivers.

(437) SACHOISWAN—*Saxonian.*

Striped on yellow ground ; season, late fall.—*Tuttle.*

(439) KRIMSKAJA BEEL—*White Krim.*

This is Duchess says Mr. Tuttle.

This apple is known to Dr. Regel only from samples sent from the garden of Mrs. Garozenoui. in the Province of Vladimir. When ripe the apple is a shiny lemon color on the sunny side, covered with lively red, sometimes speckled with red like a brook trout. The flesh is white, firm and acid. A good dessert and cooking apple, which ripens in October, and keeps throughout the winter. From the measurements given by Dr. Regel, this apple must be considered small, or, at any rate, below medium in size.

It is difficult to understand how that this apple, known only in one garden and described as it is above, should prove to be Duchess.

(441) GRIMUSCHKA—*Rattling.*

One speciman I saw at Mr. Underwood's—a large brownish-red fruit.

Dr. Regel mentions this only as a synonym of Roshdesvenskoe No. 477, described by Krasnoglazov, of Moscow, under that name.

(444) REINETTE LIUBSKI—*Lubsk Queen.*

"A very beautiful sweet apple of no value," says Mr. Webster. Mr. Tuttle says although reported from the East as sweet, he finds it sub-acid. He adds further that it is a very good fall apple about the size of Autumn Strawberry. Mr. Saunders (at Washington) says a very beautiful fruit, rather crisp and palatable on July 10th.

(448) KARDINAL—*Cardinal.*

That which I saw at Mr. Underwood's was small, striped and of nice flavor. Dr. Hoskins described it as a red-cheeked apple on dull whitish-green ground, but he received his from D. W. Adams, of Waukon, Iowa.

(450) BEEL KRASAWIZA—*Handsome White.*

An apple of White Calville form and size, acid, crude and unripe, as I saw it in the orchard of Mr. Spaulding, of Minneapolis.

(451) WARSCHTAPEL—*Warsztappel.*

At Mr. Underwood's an apple of full medium size, green with some faint red ; very ribbed and very wrinkled.

(453) ARKAD KRASIWUI—*Beautiful Arcade.*

A hard, white apple, somewhat juicy, sweet and with some flavor, which Mr. Tuttle thinks very favorably of.

Dr. Regel speaks of this as an apple that grows in Old Russian County, in the Province of Novgorod. A small, roundish apple, mostly covered with a thin blush of red and darker stripes. Flesh white, sometimes stained with red; good for cooking. Ripens in September and keeps till November.

(455) RIABINOUKA—*Berry Apple.*

The Riabinovka, as grown by Dr. Hoskins, was received from Mr. D. W. Adams, Waukon, Iowa. An apple very closely resembling the Alexander. Dr. Hoskins and others agree that it is not that variety, yet Dr. Hoskins says there is no use in growing both. The tree is not perfectly hardy.

Dr. Regel speaks of this as growing in the Provinces of St. Petersburg and Riazan. A small apple, somewhat flat, not at all conic, with shallow, folded basin, and long stalk. Yellow, mostly covered with red, in dark and light stripes. Flesh tender, vinous sweet; in season from September to January. It is grown to a fair extent, as the trees will stand the coldest winters.

Evidently a very different fruit from that grown by Dr. Hoskins.

(457) KLINEWSKOE—*Klineff.*

Mr. Tuttle says:—Fruit of medium size; yellow, with red cheek. Season, fall.

Dr. Regel describes Kluevskoe from samples from Moscow. A medium-sized, roundish cooking apple, that keeps into winter. It seems to be hardy at St. Petersburg, although it was injured in the nursery during the winter of 1866-67.

(458) SCHOLTINALIW—*Yellow Juice.*

Dr. Regel says this grows in the gardens of St. Petersburg, Novgorod and the Coast Provinces, and is often mistaken for White Naliv. It is quite suited to these climates, and bears lots of fruit each year. It ripens in September and keeps till November.

(462) RUBEZ SCLONNIU—*Green Cut.*

The Rubets Selonui, Dr. Regel says, is grown in the Coast Provinces, also at Moscow and southward; also, says Baron Tiesenhausen, in the Province of St. Petersburg. It is a medium-sized fruit, yellowish-green, with a little red on one side. Good for cooking only. Tree healthy, but not productive.

(463) PIPKA POSTILLNAJA—*Spreading Pipka.*

A small apple of Duchess type; sour, dry, flavorless; condemned.—*Dr. Hoskins.*

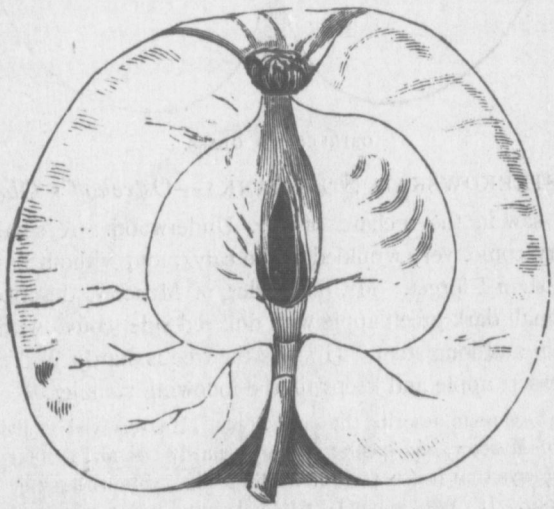
Dr. Regel mentions this as growing in the Province of St. Petersburg; an apple of about medium size, oblong conic, with shallow cavity and short stalk. When ripe it is yellow, with red on the sunny side; sub-acid, soon becomes mealy. It ripens in September, and keeps some time. Dr. Regel cannot recommend it.

(466) Repka Kislaja—*Sour Turnip.*

Dr. Regel describes this from samples from Kazan. I believe he also states it to be grown in the Province of St. Petersburg. A small, somewhat conic apple, sometimes with a slight pink blush; juicy, vinous sweet; good for dessert and cooking, from September to January. The tree endures the severest winters.

(467) Miron Ploskui—*Flattened Barbel.*

Dr. Regel mentions having seen this in the Imperial Gardens, where Mr. Kremer is gardener. A small yellowish-green apple, with light red in stripes on the sunny side. The flesh is greenish-white, juicy and agreeably sweet; good for dessert and kitchen; in season from September to December The tree does well in the climate of St. Petersburg.



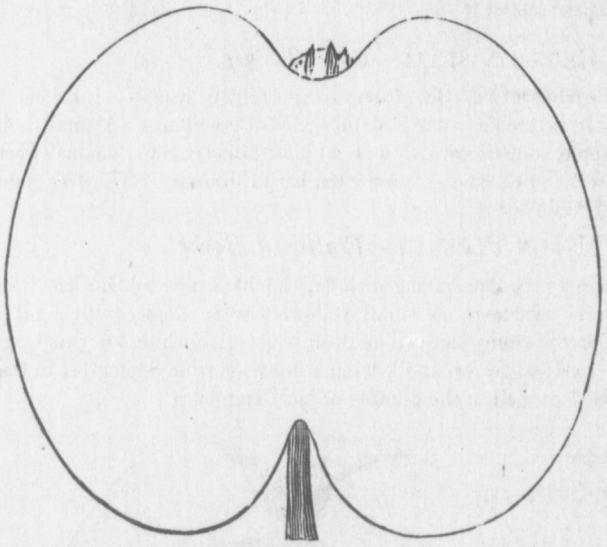
BABUSCHKINO.

(469) Babuschkino—*Grandmother.*

Judging merely from the leaf, as examined by Mr. Budd, this would appear to be the same as that received by him from some other place in Russia.

Dr. Regel says that he received this from Moscow, and that it is grown in that province and in the provinces to the south. It seems to be an apple of

full medium size, yellow with a little red. It has an agreeable vinous-acid and aromatic flavor. Dr. Regel recommends it as a fine dessert apple, said to keep till August of the next year.. He had seen it in July.



OSTREKOFF'S GLASS.

(472) OSTREKOWSKAJA STEKLIANKA—*Ostrekoff's Glass.*

This I saw in the orchard of Mr. Underwood. A small green apple, very conic, very wrinkled at the calyx, and without basin. Its length of stem I forget. Mr. Schroeder, of Moscow, described it to me as a small dark green apple with dull red side, conic, with corrugated basin and long stem. He says the tree is hardy, and that it is a good dessert apple and keeps till the following summer.

Dr. Regel seems to describe the same apple. He received it from Krasnoglasov, of Moscow, and speaks of it as a hardy tree and a heavy annual bearer, and says that it is a fruit of medium size, yellowish-green in color and very sour. It ripens about 1st September and keeps a long time. It is a native of Tula, and named after a merchant there.

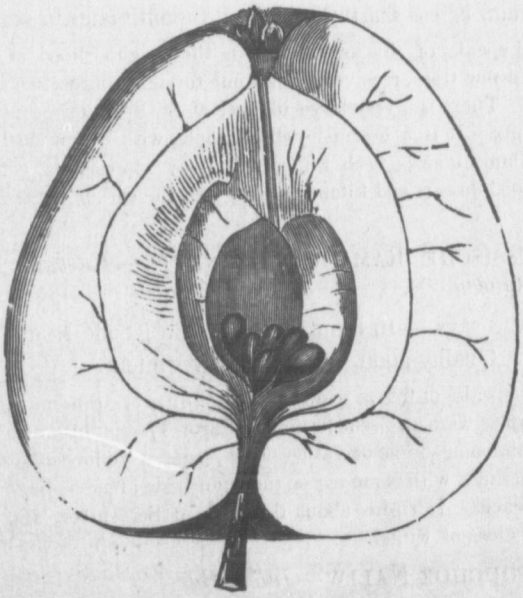
Mr. Budd, on reading my description, queries whether this may be the same as the Astrachan Pipin which he received from Moscow, which, however, is an apple of good size, and which Mr. Budd says "is a true Steklianka, and the keeper of all keepers I have yet seen from Russia." Mr. Budd says that he took that apple to the Iowa winter horticultural meeting, jammed in a valise full of books, but it

arrived sound. It was then too hard and crude for eating. We saw just such apples in Russia, and carried them about with us to try and find out their names. The cut of this apple, herewith given, is not like the fruit grown by Mr. Underwood. It is from a drawing taken in the Department grounds by Mr. William Saunders.

(476) ARKAD, ROTHER—*Red Arcade.*

Dr. Regel says that the *Arcad Krasnui*, or *Red Arcad*, originated in the Government of Tchernigov; a very scarce apple, which he only saw from one garden there. He says, further, that it is doing well in his pomological garden at St. Petersburg, and speaks of its beauty and long keeping qualities; yet, strange enough, it is not on the list which Dr. Regel recommended to us for trial, when we saw him in 1882, nor even in his general catalogue, nor was it among the apples he sent to Mr. Budd in 1879. Dr. Regel may have lost it.

Mr. Saunders, at Washington, does not become enthusiastic over it, he merely says "good early apple, fully ripe 4th July." Had this apple come to us through Dr. Regel, from Tchernigov, it would have been named "Krasnui." I fear "Rother" suggests some other apple received through German sources.



ROSCHDESVENSKOE.

(477) ROSCHDESTWENSKOE—*Christ Birth Apple.*

This is a valuable winter apple in Russia, and I would like to hear of it as having been fruited from the Department catalogue. That grown by Ellwanger & Barry, of Rochester, was received from Moscow. Mr. Schroeder, of Moscow, described it to us as a medium-sized or largish apple of high conic form; good for table, and a pretty good keeper. Tree not hardy at Moscow, but valuable farther south.

Dr. Regel speaks of this as grown at Novgorod and to the south of Moscow. A green and afterwards a yellowish-green fruit, dull red in the sun. Flesh white, juicy and agreeably sour, with slight aftertaste. Ripe in October, and keeps all winter. It stood the severest winters until 1866, when young trees suffered. This tree will not endure —30 Reaumur, that is 35½° below zero, Fahr. This apple may have taken its name from the village of Roschdestvenskago.

(481) MZENSKOE—*Mzensk.*

Dr. Regel says this was brought from Moscow, where it is known as the Sweet Mzensk—a medium-sized apple, and one of the sweetest. It ripens the middle of August. It stands the winters well; neither large nor small trees were injured during the severe winter of 1866-67.

(490) GLINZOWOE—*Clay.*

Mr. Spaulding says:—Like Duchess in tree and fruit, but it seems finer in grain, is less sharply acid, and a month later in season.

Dr. Regel speaks of this as growing in the neighborhood of St. Petersburg; also a few trees, received from some foreign source, are in a garden in Tavrich. There is a very large old tree at St. Petersburg, in the garden of Mr. Glintz. It is a greenish-yellow apple, with a few dashes of red; hardly medium in size; flesh white, firm, juicy, vinous-acid, without aftertaste. A good dessert and kitchen apple, ripe the end of September. Tree hardy.

(502) RUSSISCHE RAMBOUR REINETTE—*Russian Rambour Queen.*

Mr. Tuttle says:—In form and color like Rhode Island Greening, but larger. Quality good. Season, early winter.

Dr. Regel speaks of this as growing in the Imperial Gardens at St. Petersburg. Samples were also sent to him by Baron Tiesenhausen from Moscow. It is a flattish, conic apple of rather large size; a yellowish-green or pale yellow, sometimes with some red on the sunny side; tender, juicy and agreeably vinous-acid. It ripens about the 15th of September, and keeps till towards the close of winter.

(544) LAPOUCHOE NALIW—*Juicy Burr.*

At Mr. Underwood's a large striped apple like Duchess. Mr.

Perry says :—Tree and fruit much like Duchess, but a later keeper. Fruit of fair quality. Tree hardy and a strong grower., and bears fine specimens in nursery upon four-year old trees. Dr. Regel received it from Moscow.

(548) BOROWINKA LUGOUAJA—*Meadows Mushroom.*

"Large, aromatic and good," says Mr. Saunders, at Washington.

(551) ARBUSOWSKOE—*Water-melon.*

Mr. Sias says :—A fruit nearly as large as Duchess, and looks like it; fair in quality, but, so far, a shy bearer. The specimen I tasted was woolly. Mr. Tuttle says :—Fruit large, yellow, with red cheek; mild sub-acid. Season, late fall. Mr. Perry says :—Above medium size, yellow, mottled and splashed with light and dark crimson stripes; a rich, sprightly acid; ripe 1st September. Tree hardy and a strong grower.

Dr. Regel quotes the opinion of Mr. Miller to show that this apple has been grown at Moscow and southwards, and has probably been named after Mr. Arbusov, a merchant. It is a large oblong apple, about the largest pictured in Dr. Regel's book. The skin is green, and afterwards yellowish-green, the larger part of the fruit being covered with a dull red, with darker marblings. The flesh is greenish-white, and of an agreeable acid taste. A large, fine looking dessert and cooking apple, which ripens in September and keeps till December. It has stood the test of hardiness very well with Dr. Regel. Only old trees suffered during the very severe winter of 1866-67.

(555) KRASS SLADKAJA—*Red Sweeting.*

Dr. Regel describes this from samples he saw in (or from) the Province of Riazan. A pale yellow, and on the sunny ides a dark carmine, with splashes. Flesh tender and sweet. It ripens in September and does not keep long.

(557) REVELSKAJA POLOSATOE—*Streaked Revel.*

Dr. Regel speaks of this as growing in St. Petersburg aud in the Baltic Provinces. A yellowish-green apple, with dull red on the sunny side. Flesh white, tender, with an agreeably sweet taste. Use table and kitchen. Ripe from the last of September, and keeps till January.

(563) KRIMSKOO NALIWNOE—*Juicy Krimtarter.*

Mr. Tuttle says :—A large, yellow, mild sub-acid, fall apple of good quality.

(565) WERGUNOKS—*Worgunok.*

Dr. Regel says this grows in Moscow and southward. A small, greenish-yellow apple, with some dashings and stripings of red on the sunny side; flesh white. A vinous-sweet apple, good for home use, especially for cooking. Ripe in October, and keeps till spring.

(568) MELONENAPFEL—*Melon Apple.*

Mr. Saunders says:—"A fruit of good flavor, somewhat tough in flesh, on August 16th." Judging by the woodcut traced by him, it seems to be an apple of good size.

This appears in Dr. Regel's book only as a synonym of the Prinzenapfel, which Dr. Regel states is growing in the Coast Provinces, especially about Riga. When fully ripe it is a pale lemon, with perhaps a little marbling of red on the sunny side. It seems to be above medium, or largish in size, more or less oblong, and flattened at both ends. The flesh is white, tender, very juicy, vinous-sweet, with a flavor somewhat like a pine-apple. This is a table apple of fine quality in September, and with good care may be kept in good condition till the New Year, and even some months later. Dr. Regel is not sure whether the apple grown about Riga is the same as that grown in Germany. The fruit seems much the same, but the Russian variety has proved hardier, and this has caused Dr. Regel to doubt their identity.

(578) BORESDORFER, LEIPZIGER—*Leipzig Borsdorf.*

Mr. Sias says:—One of the best in quality of the Russian apples, and one of the best keepers. It would seem, however, that it is a conic apple of no special beauty. The tree is hardy and a good bearer.

Dr. Regel says that young trees in nursery have suffered only in very severe winters, and that old trees in some cases had passed through such winters uninjured.

(579) TIERLANDISCHER SOMMER—*Summer Lowland.*

Mr. Tuttle says this resembles Duchess in appearance, but is of excellent quality. A very pleasant sub-acid. It is later in ripening, and should have been named Autumn Lowland. Mr. Tuttle speaks of the tree as very hardy and satisfactory.

(580) TIERLANDISCHER WINTER—*Winter Lowland.*

In Mr. Sias' orchard this is a small flat apple, striped with bright red, white in flesh, quite good, and probably a good keeper.

(584) ERDBEERAPFEL—*Red Calville.*

A hardy tree and an enormous bearer; fruit red, acid and high-flavored, but rather small. Its lack of size prevents its being valuable.—*Webster.* Why the word "Erdbeerapfel," or Strawberry apple, should have been translated Red Calville, it is difficult to say.

Dr. Regel mentions this as coming from the Baltic Provinces, and states that neither young nor old trees had been injured.

Dr. Regel says that the Erdbeerapfel Lievlander is the Erdbeerapfel of Mr. Goegginger, of Riga. It is grown in the Baltic Provinces. It is a pale yellow apple, usually half of it covered with carmine stripes. The flesh is reddish, tender, juicy, with an agreeable aftertaste. A very excellent autumn table apple; in season from September to December.

(585) ZUSOWS WINTERAPFEL—*Zusoff's Winter.*

Mr. Tuttle tells me that he has two varieties under this name—one a small bright red fall apple, the other larger and a better keeper. He would not recommend them without further trial.

Dr. Regel mentions Jussow's Winterapfel as received from Wagner, of Riga. It is grown in the Coast Provinces. It is sensitive to cold winters, and in 1866-67 young trees in nursery, and older trees were killed.

(587) ENGLISCHER PEPPING—*English Pippin.*

See 161 Longfield.

Dr. Regel mentions this as from the Baltic Provinces. It had proved quite hardy with him. He had no thought of its being Longfield.

(592) ARKAD DLIMUI—*Long Arcade.*

"A small or medium-sized fruit, much like Red Astrachan in form and color; flesh white, and fine in grain, and a mild, pleasant acid. Season, late fall or early winter." Such is the opinion of Mr. Tuttle, who speaks of the tree as very hardy, a medium grower and an early bearer.

(597) PESOLSCHNAJA STEKLIANKA—*Glassy Sand.*

A small and very conic fruit of medium quality, basin not wrinkled, as fruited by Mr. Sias. As described by Mr. Schroeder, it is a fall, sour Greening. That grown by Mr. Sias may be true to name; I cannot be sure.

Dr. Regel mentions this as a sour apple, ripe end of September. Skin as though covered with sand. Tree has stood pretty well at Moscow till 1866. In 1866-67 it was injured. Size and keeping qualities not stated.

(599) ROMENSKOE—*Omensk.*

Dr. Regel received the Romnenskoe from Kraznoglazov, of Moscow, whence it was brought from the town of Romna. A high apple, dark red, with a pleasant, acid taste. Ripe about the 1st of October. The tree is fairly hardy at St. Petersburg.

(600) DLIMOE—*Long Apple.*

"This evidently gets its name from the tree, which has few and long branches, thickly studded with short spurs, each crowned in season with a rosette of beautiful little red apples of good quality," says Mr. Webster.

Dr. Regel says a very hardy tree. It did not suffer at all in 1866-67 nor previously.

(864) ARKAD DUIMTSCHATAJA—*Smoky Arcade.*

Dr. Regel says this is grown about Moscow, and in the provinces to the south of it. A small, greeenish-yellow apple, with bright red on the sunny side; not perfumed, and often a little bitter. It ripens as early as the middle of August, and does not keep long. People are fond of eating it when just picked off the tree. This tree is not apt to be injured by cold, although 36½° below zero (Farh.) is not good for it. In Dr. Regel's garden, in 1866-67, most of the trees not covered with snow were badly injured.

(874) BOROWINKA SLADKAJA—*Sweet Mushroom.*

"A good-flavored sweet apple of good size and rather tough flesh," says Mr. Saunders.

Dr. Regel speaks of this as growing in the garden of Mr. Ruimin, in the Province of Riazan, and also in the Emperor's garden at Peterhof. A medium or small-sized apple, greenish-yellow, with some yellowish-red on the sunny side, sometimes with some stripes. Flesh greenish-white, tender, juicy, sweet, with good aftertaste. It ripens in September, and keeps in a good cellar till the New Year.

This is not a Borovinka. It is more like an *Arcade;* just such an apple as we do not want.

(965) GRUSCHEFFKA SLADKAJA—*Sweet Pear.*

"Not a sweet, but a fine sub-acid apple of the Yellow Transparent class," says Mr. Webster. I saw it at Mr. Spaulding's, probably the same fruit.

(966) TUCHERNOKRASNOE—*Red-black.*

Mr. Sias says:—One of the most showy and beautiful of my Russian varieties, and one of the largest. Color nearly black where well exposed to the sun; a little coarse in texture, but a good market apple. Season probably October to November.

Dr. Regel received this from the Penza nurseries. Young trees in some cases proved hardy, in others not.

(970) TUHUGINKA SELOMAJA—*Green Citron.*

Medium in size, shy bearer, not profitable.—*Sias.*

(971) WASSILLI WELIKUI—*Vasilis Largest.*

This belongs to the same family as Green Streaked, Zolotoreff and Turnipy Juicy. Mr. Tuttle says, it is a little more like Alexander in color, and in the appearance of the tree, about the same quality as the others, and, like them, an early bearer of large, showy, fall market apples. Mr. Perry says:—A large, round, red-striped apple, coarse in flesh and of fair quality. A good market apple; season, October. Tree hardy and a good grower.

Dr. Regel received this from Penza. The word Vasilui means Basil's.

(973) STEKLIANNOE DUSCHISSTOE—*Shining Aromatic.*

"Fruit of no value here," says Mr. Webster. Mr. Tuttle says:—An acid fruit, rather fine in grain and with some flavor; not bad, but we have too many such apples.

(975) TETNEKRASNOE—*Red Teat.*

"This tree," says Mr. Webster, "is a wonderful bearer, and the fruit, if judiciously thinned, large to very large, but of fair quality and flavor only; September." It is like Mr. Webster's Zolotoreff, but not so good in quality, nor does it seem to keep as long.

(978) BEEL SOLOTOFSKAJA—*Golden White.*

Dr. Hoskins pronounces this the best late fall apple among the Russians for market purposes; St. Peter the best early fall. He describes it as medium in size, with no cavity; in color a dull pale green, turning to a dull yellow, with a few pale red stripes in the sun; many specimens have no red at all. The flesh is soft, a little coarse; flavor, a mild sub-acid. Mr. R. Brodie, of Coteau St. Pierre, exhibited in Montreal last September a plate which seemed of this variety. He has five trees of it, planted about five years, and the trees seem extra hardy, and good young bearers. The samples shown were a good deal above medium size, and some samples grown by Mr. Brodie have been very nearly as large as Alexander.

Dr. Regel received this from Penza.

(981) BEELOWOE SCHOLTO SEROE—*White Russet.*

Mr. Tuttle says:—A large yellow apple with a red cheek; a little russety around the stem. Quality good. An early and abundant bearer; season, late fall.

(983) ASTRACHANSKOE SKWASNOE—*Red Astrachan.*

"Not Red Astrachan," says Mr. Spaulding. "It should have been translated 'Transparent Astrachan.'"

Dr. Regel received it from Penza.

(984) ANIS KURSKI—*Koursk's Anisette.*

I saw this at Mr. Underwood's—a small green fruit without any basin, and very wrinkled near the calyx; not of *Anis* type at all.

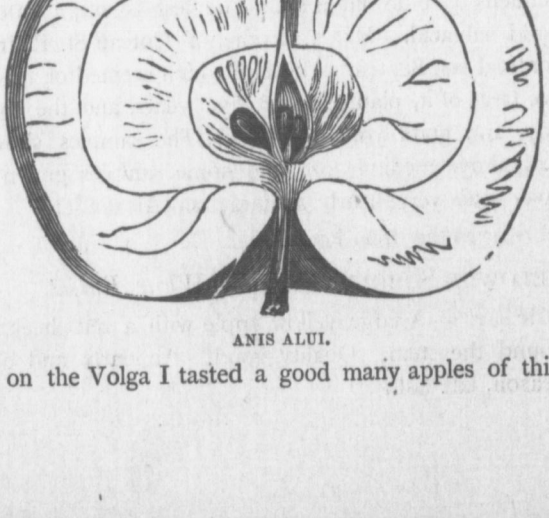
Mr. Sias says that it resembles Russian Green, is of fine quality, and keeps pretty well for a fall fruit. Evidently not the same apple as Mr. Underwood's.

Dr. Regel received this from Penza, but does not describe it.

(985) ANIS KRASNUI—*Red Anisette.*

A true variety of the Anis. When I saw it in August, in Mr. Sias orchard, it was not fully colored, and in fact it scarcely seems to have any more color than the Yellow Anis growing alongside of it. This is not noted by Dr. Regel as the same as the Pink Anis.

Anis Alui (Pink Anis) is the apple which we have noted in Russia as growing in such quantity from Kazan to Saratov. Dr. Regel describes it from samples from the Province of Kazan, as a medium-sized flattish apple, dark carmine, with some dingy yellow on the shady side. Flesh greenish-white, very juicy, sour, with a strong bitter aftertaste. It ripens in September, and keeps till January, but on account of its bitter taste is fit only for cooking.



ANIS ALUI.

When on the Volga I tasted a good many apples of this variety,

the most prematurely ripened specimens I could find. Mr. Budd suspected no bitter aftertaste, neither did I.

(987) ANIS SCHALTUI—*Yellow Anisette.*

This also is a true Anis. When I tasted it in Mr. Sias' orchard, it was hard in texture and a crude acid. But Mr. Sias says that it does not keep past September. These were top-grafted on Crab. Mr. Sias tells me that he has found, in his neighborhood, trees grafted on apple roots, planted in 1881. The trees seemed in perfect health, and the fruit about a third larger than that grown on Crab. The fruit, however, ripened in the fall, and did not keep. This and the Red Anis above noted, and 382 Green Russian and 413 Skrischapfel, or Cross apple, are true varieties of the Anis, and may prove of great value in the far north.

(988) ANANASNOE—*Pine-apple.*

Like Yellow Transparent at Mr. Underwood's.

DR. REGEL'S SELECT LISTS.

Our object must be to find out as soon as possible the few best varieties in this long catalogue.

* Dr. Regel in 1882 gave us ast he result of his experience to date a list of ten varieties, which were as follows :—236 Antonovka, 252 Aport, 245 Borovinka, 157 Belui Naliv, 182 Red Summer Calville, 322 Koritsnevoe (Zimmetapfel), 375 Koritsnevoe Ananasnoe, 266 Polosatoe Novgorodskoe, 366 Skvosnoi Naliv (not in Department catalogue), 413 Skrischapfel, and 230 Titovka.

Dr. Regel also noted a longer list, which is as follows :—185 Anisovka, 184 Arabskoe, 203 Arkad, 188 Arkad Joltui, Berezinskoe (not in Department catalogue), 122 Borsdorfer Reveler, 248 Beel, Vinnoe Zelonoe (not in Department catalogue), 380 Gruscheffka Moscovskaya, 338 Gruscheffka Revelskaya, Zelonka (not in Department catalogue), 260 Semnie Polosatoe, 231 Zolotoi Arkad, 268 Kremerskoe, 197 Krivospitsoe, 368 Miron Sacharnui, 234 Muscatelnoe, Naslednik Nikolai Alexandrovitch (not in Department catalogue), 372 Petrovskoe, Champagnerapfel (not in Department catalogue), 246 Plodovitka, 332 Plodovitka Rannaya, 164 Polosatoe Heidorn, Revelskoe Golubinoe, or Reveler Taubenapfel (not in Department catalogue), 204 Rubets, 226 Rubets Belui, 210 Rubets

* NOTE.—The numbers referred to in this and the following list are those of the Department catalogue.

Vinogradni, 217 Sacharnoe, 207 Stupka, Charlamowskoe (262 of Department catalogue), 407 Tchernoe Derevo, and 342 Charlottenthaler Joltoe.

On other Importations from St. Petersburg.

Several importations besides that of the Department have been received from Dr. Regel. In some instances these have been sent out by number. I must, therefore, call attention to certain instances where the numbering in these collections does not agree with that of the Department list. Prof. Budd, of Ames, Iowa, received from Dr. Regel in March, 1879, seventy-two varieties. Of these, fourteen do not appear in the Department list. Of that importation, No. 151, Miron Sacharni, is 368 of the Department; 257, Arabskoe, is 184 of the Department. No. 277, Swinzovka, is Wargul of the Department, whereas the Svinzoffka of the Department is 362; 379, Gruscheffka Revelskaya, is 338 of the Department. Otherwise, numbers agree.

However, I must note that in the catalogue of Dr. Regel of 1882 Miron Sacharni *is* 368, yet the mistake was not made by Mr. Budd, as the numbers run from 1 upwards. Number 277 is the Svinets of Dr. Regel's catalogue, but is 426 of the Department catalogue, otherwise the numbering of Dr. Regel's catalogue of 1882 and Mr. Budd's collection agree.

As to the numbering of Dr. Regel's catalogue of 1882, it agrees with that of the Department, with the following exceptions:—No. 257, Arabskoe is 184 of the Department; No. 15 is Gruscheffka Nalivnaya, whereas No. 15 of the Department is Sussapfel von Toenarius; 379 Gruscheffka Revelskaya is 338 of the Department; 277, Svinets, is Wargul of the Department; 258 Charlamovskoe, is 262 of the Department. I think this will serve to show that these apples should not be propagated by number.

In conclusion, I would urge that a systematic effort be made to reap the harvest of information which will be obtainable next autumn. Mr. Wm. Saunders tells me that of the 252 kinds received all grew, that scions of all were distributed, that every available scion was cut for six years, and that in one year over 100,000 packets were sent out by the Department.

Let all throughout the country who have tested these fruits, send notes to the horticultural societies of their respective States, and thus tend to bring facts to a focus on this important question.

ON OUR BEST PEARS.

By Heinrich Goegginger, Riga, Russia.

(*Translated and abridged.*)

BESSEMIANKA.

This fruit is, no doubt, of Russian origin. I have seen it cultivated a good deal in the Province of Moscow, and it is grown throughout Central Russia, and in the eastern part of the empire. In the Baltic Provinces we only find samples, trees here and there; and we rarely find it in our market, as the proprietors reserve it for themselves on account of its fine flavor. It belongs to the family of the Bergamots. I believe that this fruit has not been described, unless, perhaps, by Dr. E. Regel. It is of médium size, in color a fine glass-green; at full maturity yellowish-green, and later greenish-yellow, without any redness or russet. The flesh is yellowish-white, very juicy, similar in taste to a fine melon. A very good market and table fruit. In poor soil it is somewhat gritty, and it does not object to moist soils. The core is often without seeds, and it probably bears its name from this fact, for the word "Bessemianka," or in German "Kernlose," means seedless.

It begins to ripen in the middle of September, and is sent in quantity at that time to the markets of Moscow and St. Petersburg. It finds a ready sale, as it is preferred by many on account of its good keeping and flavor to imported fruit. After it is taken from the tree it should be kept in stock for about fourteen days, and after that can be shipped to market.

The tree grows to a very large size. It grows quickly, and forms a wide head. It bears well, and seldom fails to produce fruit. In the nursery it grows quickly, and soon forms a strong stem. The leaf is rather large, very shiny, like leather. The eyes are large and wide, on strong supports.

This variety can be well recommended for planting in quantity.

SAPIEGANKA.

This is a pear from Lithuania, and probably comes from the gardens of the family of the Prince after whom it seems to have been named. It is found generally in Lithuania and Poland. It is also found in the countries belonging previously to Poland, and attains its highest point in the Government of Vilna.

It has not been, as yet, described in the works on German Pomology, and is not known in other countries. In the Baltic Provinces it is known as the Courland Bergamot, or Round Bergamot. In form it is like a Bergamot, decreasing towards the stem ; towards the calyx it is more flattened, and may be mistaken for the Summer Bergamot.

The color is green when on the tree ; later, light yellow, with red cheeks if exposed to the sun. It has many marked dots, and is russety only at the calyx and stem.

The flesh is yellowish-white, juicy and of fine Bergamot flavor. It should be gathered from the tree the beginning of September. It is a good fruit for shipment, and in the markets always meets with a ready sale.

The tree grows to a large size, and is usually found in good health. As it seldom suffers from frost when blossoming, it usually bears every year. It does not seem to suffer from underground water, but does not seem to thrive in a sandy soil. The leaves are round, shiny and leathery, on long, red stems.

This is one of our best fruits. It can be used for all purposes, and therefore should be generally cultivated.

REPORT ON SEEDLING APPLES

AT SOCIETY'S EXHIBITION, 1883.

FROM COUNTIES OF BEAUHARNOIS, CHATEAUGUAY & JACQUES CARTIER.

BY REV. ROBERT HAMILTON, GRENVILLE, QUE.

Agreeably to the request of the directors of the asso ciation, I made a collection of seedling apples for the annual exhibition of 1883.

I began on the 7th September in the parish of Rigaud, but spent only one day there. It was the off-year, and very few trees were in bearing. I heard of fine sorts, but saw nothing of any importance. I believe this district to be well worthy of a thorough search.

On the 10th September I proceeded to Chateauguay, and, in company with Mr. Robert Jack, visited the orchard of Mr. Seers, where the first prize seedling of May, 1883, originated. There we found some very fine-looking apples. On the following day I continued my journey to Beauharnois, and at once began a systematic examination of the orchards there. It was the off-year in that neighborhood also, and, though some fair specimens were found in several orchards, nothing remarkable was discovered. Still, what was seen gives promise of something valuable in the future when these orchards shall be examined in the bearing years.

There is an immense number of seedlings in the neighborhood of Beauharnois and Chateauguay, occasionally several hundred on a farm. Frequently, an orchard is almost wholly of one type. In one it is Reinette, in another Calville, or, as in Mr. Seers' orchard, something between Fameuse and St. Lawrence. One feature in apple trees, that I noticed for the first time, is the marked similarity in form between the tree and its fruit, *i.e.*, apples of conical shape, like Northern Spy and Decarie, are borne on trees of close, compact, upright growth. Oblate apples, like Fameuse and the Reinettes, are borne on rounded-headed trees, and large, flattish apples, like St. Lawrence and Fall Pippin, are borne on broad, spreading trees.

In one very large orchard that I visited I found two trees that strongly resembled the one a Fameuse and the other a St. Lawrence, but as all the other trees were certainly wildings I was somewhat puzzled, till the owner explained that he believed, when planting, that all his trees were grafted. He had bought from an agent (?) with the above result. I found a similar case in St. Louis de Gonzague.

The tendency in many seedling orchards is to uniformity of type, when otherwise it was generally capable of explanation. In one orchard, which showed unusual variety, the owner told me that he had dug the trees from the road sides in different parts of the country. In Mr. Pierre Brunette's orchard, beside a fence, close to the house, grew two trees unlike the others in appearance, and bearing fruit of fine quality; these, I was told, were chance seedlings, probably from an apple core thrown from the gallery of the house. At Mr. Newman's, of Lachine, the same fact was observed. The seedlings had one uniform character—they were of the Fameuse type, and I found that they were from Fameuse seed.

Mr. Newman's was the last place visited, but because of its importance I give it the chief place. It was the off-year there, as in other places visited. The fruit of the few trees bearing, however, were enough to awaken the enthusiasm of an ardent fruit-grower. The apples are chiefly of Fameuse and Reinette type, generally of medium size and above; some quite large, almost invariably of fine quality and many of the highest class, equal to Fameuse in its best points, with, in many cases, an indescribable flavor or aroma superadded. The greater number were red or profusely marked with red. The shape was Fameuse, Canada Baldwin, Reinette. Season, from early fall to spring.

The quality of the fruit and the productiveness of this seedling orchard of about 1,000 trees might be vastly improved, but that the owner's time is so fully occupied with his other orchards of grafted trees.

If all the old sorts of apples were lost, by any accident, they might be replaced by better sorts from among these seedlings.

Lest anyone should think this statement to be an exaggeration, I may say that the almost unanimous verdict of experienced fruit-growers who visited the exhibition and carefully examined the fruit, confirms it.

Of twenty-four sorts exhibited there were very few that were not in the first rank in quality and appearance. Where all were so good it would be difficult to signalize one and give it the pre-eminence.

The fruit, at the close of the exhibition, was put away for future examination. Mr. Webster, of South Northfield, Vt., took some specimens of the fruit home with him for further examination, and his remarks upon them are appended.

The aim of the association is to discover and disseminate one or more sorts of apples that with the highest quality of fruit shall combine the highest degree of hardiness, productiveness and long keeping qualities. We may get hardiness in Russian varieties, but fine quality and long keepers we shall have to discover among our natives.

I regret to say that, owing to water from the fall flood getting into the cellar where our fruit was stored, some of the sorts were spoiled before the winter examination took place.

No. 25. Newman.—Mr. Webster, of Vermont, writes of this :—"Oct. 30.—Ripe. Flesh white, with pink tints. Moderately juicy; astringent. Sub-acid; fair."

No. 26. Oct 22.—Fully ripe; still in condition to keep. Flesh slightly coarse, tender, breaking; whitish, with pink streaks and tints. Flavor sub-acid, slightly astringent; good.—*Webster.*

No. 27. Feb. 1.—Ripe; beginning to decay. Small core; fine grain; mild sub-acid. Resembles R. I. Greening, but lacks juice and acidity; *very good.—Webster.*

No. 28 is a biennial bearer. Montreal examiners, in December, say :—"Of fair size and color; good. Bear it in mind."

No. 30, Montreal examiners say, is "very handsome, above medium in size. Flesh fine, firm, whitish, sometimes tinged with red; flavor sub-acid, brisk, very good." A promising variety, marked "To be recommended for trial." An annual bearer, heavy in alternate years.

No. 31 is an annual bearer; heavy in alternate years. Montreal examiners say is "just like Garden Royal in size, color, appearance and quality." Fine dessert apple. XXX. Oct. 22—Fully ripe, very juicy, half fine, breaking; saccharine, sub-acid; very good.—*Webster.*

No. 32 is an annual bearer, and carried six or seven barrels when visited. It is an attractive apple and of fine quality. Montreal examiners say :—"Resembles Decarie somewhat; fine grain, juicy; flavor like Roseau." October 22.—Ripe, but in keeping condition.

Flesh rather fine, juicy, greenish-white ; pleasant sub-acid, very slightly astringent ; good.—*Webster*.

No. 33 is a moderate bearer. The tree is decaying. Examiners say :—"The fruit is attractive, medium or above in size; green ground splashed with red, in the sun almost wholly red. Flesh firm, mild sub-acid. Good, kitchen and table. Will keep probably longer than St. Lawrence, which it strongly resembles." October 30.—Ripe, but keeping well. Flesh white, much stained and blotched with pink; juicy, mild, sub-acid; refreshing, very good.—*Webster*.

No. 34 is an old tree, a good biennial bearer of handsome fruit. Examiners say it is "bright red, attractive, juicy, fine-grained, slightly acid; well worthy of further looking into." Dec. 1.—Ripe, keeping well; flesh white, tender, acid, good; more for cooking than for dessert.—*Webster*.

No. 35 is a fair bearer biennially, and bore about four barrels when visited. Fruit very attractive, of full medium size, roundish oblong, shaded deep red in the sun. Flesh solid, white, slightly stained pink; mild sub-acid; very good, almost best; dessert, cooking, market. Examiners at midwinter say :—"Very good and handsome; in fair condition, of good texture and flavor, but rather neutral in flavor; otherwise promising to be valuable." Oct. 22.—Ripe, but firm. Flesh rather fine, white, tinted pink, juicy; flavor like Fameuse.—*Webster*. March 26.—In fair condition at this date. Good enough for dessert. A valuable winter dessert apple.—*R. W. Shepherd, jr.*

No. 37. Oct. 32.—Slightly wilted. Flesh rather coarse, whitish. with yellowish tints; sub-acid, good. Core rather large.—*Webster*.

No. 39 is a biennial bearer, with a few in the alternate years. The tree is thirty years old. Examiners say the fruit is "beautiful and very attractive; medium in size and best in quality; dessert." Oct. 4.—Fully ripe, but capable of keeping some time longer. Flesh fine, tender, white, tinted pink. Flavor delicate sub-acid, aromatic. Quality best.—*Webster*.

No. 40 is a thrifty tree, an annual bearer, yielding heavy crops in the alternate years. Fruit very attractive, above medium in size, roundish conic; green ground, nearly covered with red, splashed deeper red. Flesh firm, crisp, whitish, sub-acid and juicy. Very good. Examiners say :—"Very like Wealthy. Is it it?" March 26.—It is not Wealthy. Quality very good, and in fair order at this date. Would class it as a late winter apple if kept in a proper cellar

or fruit-house.—*R. W. Shepherd, jr.* Oct. 30.—Ripe, tender and juicy. Brisk sub-acid. Cooking; market.—*Webster.*

No. 41 is twenty-five years old, and of slow growth; an annual bearer of medium-sized apples of fair appearance; evidently a long keeper.

No. 42 is a moderate biennial bearer. Fruit full medium in size. Examiners say:—"Fine, white flesh, sweeter than Fameuse; of fine quality. Bear it in mind." October 30.—Ripe, but keeping. Flesh white, half fine, tender. Moderately juicy; mild sub-acid. Very good.—*Webster.*

No. 44 is fifty years old, of thrifty, vigorous growth. Annual, and more than moderate, bearer. Fruit small to medium in size. Not attractive in appearance, but probably a long keeper.

No. 47. Oct. 1.—Keeping well. Flesh white, tinted pink: moderately juicy, sub-acid. Slightly aromatic; good.—*Webster.*

There were not many really good apples in the Beauharnois collection, though amongst the almost numberless seedlings of the county many good sorts are sure to be found later. As the next year will be the bearing year, these seedling orchards should be thoroughly examined, especially as many fine seedlings are from year to year cut down for various reasons; a few desirable ones were found, however. At Mr. Pierre Brunette's were two of fine quality and large size.

No. 1 is an attractive fruit, large, conical, smooth and even in outline; in color light green, with deeper green dots and blush cheek. A firm apple, with thin but tough skin. Flesh greenish-white, of open, breaking texture and mild, sub-acid flavor. Season, probably same as Fameuse.

No. 2 is a rather attractive fruit. Large, flattish oblate; green, with white dots, and more than half suffused with blush and deeper red markings. Flesh fine in texture, white, soft, very mildly sub-acid. Season, October. Dessert and cooking. These two are worthy of more thorough examination.

No. 13 is from the farm of Louis Goyette. It is a good biennial bearer, with a few in the alternate years. The tree is of strong, vigorous growth. Examiners say that the fruit is "very presentable in appearance. Blue Rearmain in texture and flavor." It is above the medium in size. Color greenish, with white dots, and suffused with deep red. It is a very solid apple, and probably a long keeper.

No. 15 is from the farm of Joachim Gendron. It is a chance

seedling, six years old, of very upright growth, resembling the Montreal Beauty Crab. At the time of my visit it bore about one bushel of the brightest red apples of medium size and fair quality, and dead ripe then—September 13th. From the description it will be seen that this is an early and heavy bearer, and would probably be profitable for a near market.

No. 17, from the farm of Joachim Jean Gendron, Chateauguay, near Beauharnois, is a wonderfully thrifty tree. The owner says it has borne heavy crops every year since it was six years old. When I saw it, on September 13th, it was very heavily loaded. Mr. Gendron said he took seven barrels off it the previousyear, and thought it carried eight this year, although one very large limb hanging over the house bore none at all. The fruit is not unlike Canada Baldwin in size, shape and color, but the red is darker, with a heavy bloom on it. It is a dense, heavy apple, with a tough, hard skin, and is said to keep till May, and I fully believe it. Flesh solid, mildly acid. Although not large nor of highest quality, this is promising as a long keeper.

Report on Trees of Last Year's Prize Seedling Apples.

No. 1, exhibited by Mr. Robert Jack, of Chateauguay Basin.

The tree is numbered 52. It is growing in gravelly loam with clay subsoil interspersed with boulders, with good natural drainage. The soil is good and inclines to the westward. The situation is open; there are some few scattered trees, but not enough for shelter. Lake St. Louis is only a half mile distant, and may modify the temperature somewhat.

The tree is probably a seedling from a very old tree close by, as there is a close resemblance between the two. It is about thirty-five years old, eighteen inches in diameter of trunk and about forty feet in spread of branches. It is still perfectly sound, healthy and of vigorous free growth; an annual bearer yielding moderate and large crops in alternate year.

The fruit holds well on the tree, and is not easily shaken off. It is of fine appearance, above medium in size; almost as large as St. Lawrence, which it resembles somewhat in shape and color. Skin tough and rather thick. Flesh coarse-grained, greenish-white, mild sub-acid and juicy to the skin; open in texture and yet firm enough to carry well and keep till June. It will be a good cooking and a fair dessert apple, and No. 1 for keeping and market.

The leaf is Russian in character. It is large, thick and tough, with a tendency to curl or be wavy.

No. 2, exhibited by Mr. J. Smith, Lachine, is growing in black loam with clay bottom—a rich soil. It is about fifteen years old, and was grown from seeds sown by Mr. Smith and transplanted to where it stands at present, when seven years old. It is an annual bearer, giving alternately light and heavy crops, and bore four barrels this season. The tree is of rounded, compact growth, somewhat resembling the Fameuse ; not too branchy, so that it does not require much pruning.

Fruit is of full medium size, slightly conical, green, suffused and striped dark red, with yellowish flush, mild acid, and is good for kitchen and table. Ripens in February and keeps till June.

No. 3, exhibited by R. Hamilton, Grenville.

The tree is growing in poor, rocky soil—a granite debris, naturally dry. There are a few forest trees to the north of it, and it is sheltered on the westward by some small buildings. It is a chance seedling. The owner of the lot, who has lived on it fifty years or more, knows nothing of its history beyond the fact that it sprang up there. It is about thirteen years old, of close, compact, rather slow growth, and apparently healthy. The leaf is large, tough, wavy, woolly on the under side ; the branches are short, stubby, rather woolly at the end till quite ripe, and ripen up early in the fall. It is an annual bearer of moderate crops. Fruit of good size and fine appearance. It is described in the 6th Report, 1880, page 51, by Dr. Hoskins.

THE NEW VARIETIES OF OUT-DOOR GRAPES.

By Wm. Mead Pattison, Clarenceville, Que.

Two wet and unfavorable seasons for out-door grapes has tended to discourage and dampen the ardor of new beginners, but perseverance and a more careful treatment as to timely nipping the exuberant growth and judicious thinning out of fruit will in such seasons be amply rewarded. The first season has been very favorable for new set vines and cuttings, when due attention in shading at times of sudden fluctuations, to protect from scalding sun, has been observed. Many newly discovered varieties has been sent me the past year for testing in this province, and especial caution had to be exercised in planting only such as came from propagators of well known skill and judgment and not given to "booming" for profit sake only.

Black Grapes.

Early Victor, from the venerable John Burr, of Kansas, U.S., a life long devotee to small fruit culture, comes to astonish us by its merits; its foliage is remarkable for vigor and resistance to early and late frosts; its bearing capacity equally surprising. With the desire of having enough of its fruit, the first it bore in Canada, to go around amongst those interested, it was allowed to carry some forty bunches, and its claims for earliness could not therefore be fairly determined. It, however, ripened the last cluster, and satisfied all who saw and tasted it on my grounds that we have in it an extra early grape with more good qualties than any of the early Labruscas.

Aminia.—Roger's No. 39, this season, improved in size and productiveness; a large, rather dark purple, bearing very compact handsome clusters, and is probably the earliest of his Hybrids.

Worden.—Though not new, is yearly winning its way in popular favor, and should entirely displace the Concord in this province, as it is a grape certain to ripen, of larger size and surperior quality and nearly as vigorous.

MOORE'S EARLY.—Though early and strong, is so far a shy bearer.

ROCKLAND FAVORITE.—A new Concord seedling from central New York, ripens early, is spoken highly of in its native locality.

BELVIDERE.—Originating in Illinois, U.S., has fruited for three years, early, large in berry and bunch, a profuse bearer, inclines to drop its berry; quality no better than early sorts we have.

LINDEN.—From its large leathery leaf gave promise of good properties, but was disappointing in earliness and fruit; it was the first grape to color, but was not eatable for weeks after.

UNION VILLAGE has been discarded as too late for this province.

WHITE GRAPES.

LADY has done exceedingly well the past season and well repays a little patience, has improved in size, quality and productiveness for two years past, and is undoubtedly the most valuable early white grape for all parts of this province. It preserves its quality till late in the fall. The Hon. G. W. Campbell, of Ohio, has persistently kept this grape before the public, and all who give it a patient trial will not regret it.

BELINDA fruited early and is promising, but not to be compared with Lady in quality.

ANTIONETTE.—A few days later carried fine clusters for the first season. These two of Miner's seedlings are both remarkable for their hardy foliage, and will probably maintain a place in our fruit list.

FAITH.—A production of an old veteran in grape culture, Jacob Rommel, of Missouri, in keeping with its extraordinary vigor bore an astonishing supply of fruit for the first year, with proper treatment as the vine matures the merits claimed for it can be better determined.

PURITY.—Parentage Delaware, production of the Hon. Mr. Campbell, gives us a delicate little grape which promises to equal, if not excel, the exquisite flavor of its widely known parent, is more vigorous than Delaware and entirely eclipses Croton, of similar origin.

NAOMI.—J. W. Ricketts, though rather late, is the most showy white table grape we have, delicate bloom, good flavor and otherwise satisfactory thus far.

PRENTISS would be very valuable but for its uncertainty in ripening with us; can only be successful in highly favored localities.

Have abandoned *Noah* and *Elvira* as too late and uncertain for this province.

Red Grapes.

Vergennes has ripened rather earlier this season, is very hardy and productive, its keeping qualities are excellent, preserving its full flavor till Christmas. It will undoubtedly be a standard of great value in this latitude.

Brighton improves year by year, many bunches attaining a great sire and finely shouldered. It is not a heavy cropper. To obtain good fruit it requires checking in growth. It ripens with Delaware here, and is a poor keeper.

Owasso.—Supposed to be from the Catawba, proved very productive and satisfactory in quality, fine clusters, very medium in size with a peculiar bloom ; ripens with Delaware.

Dempseys No. 5.—A valuable early red, discovered by the President of the Fruit Growers' Association of Ontario. It has fruited here for two years, and proves to be the earliest of its color, resembling Massasoit in some respects but earlier.

The following new varieties, not yet for sale by their originators are worthy of reference as to their vigor and size :

Burrs Early, by the originator of Early Victor, who in a recent letter writes me is "larger than Victor, very prolific, but not quite as hardy, the fruit has a more refined delicate and richer flavor ; if it does as well with you as Victor you have a real treasure."

Norwood, by Rev. J. W. Talbot, of Mass., has taken a first-class certificate before the Mass. Nat. Society, its originator writes: "Ripens a trifle earlier than Concord, and has kept in good condition tillApril."

Rommel's "Delaware Seedling Early Black," and "Rommel's July," promise us extra early grapes possessing other good qualities.

Ulster Prolific.—A. J. Caywood & Son, through whose kindness we have been permitted to taste its excellent flavor at our Fruit Growers's Exhibitions in Montreal and Halifax.

Jessica, now for sale by its originator, D. W. Beadle, of St. Catharines, Ont., and have heard favorable reports ot from one who has fruited it in this province.

Rickett's Hybrids.—Those that have done exceedingly well and give promising success are Empire State, Golden Gem, Peabody, and Nos. 72, 346 and 543.

NOMENCLATURE AND DESCRIPTION OF FRUITS.

AMERICAN POMOLOGICAL SOCIETY.

At a recent meeting of the American Pomological Society held in Philadelphia, Mr. J. B. Rogers, of New Jersey, made the following motion, which was unanimously adopted :—"That the Secretary of this Society be instructed, at an early day, to send copies of our rules and the portion of the President's address referring to the names of fruits, to all kindred societies in America."

MARSHALL P. WILDER, *President*,
BOSTON, MASS.
W. J. BEAL, *Secretary*,
LANSING, MICH.

The rules adopted, and the portion of the President's address referred to in the vote, are as follows :

RULES OF THE AMERICAN POMOLOGICAL SOCIETY.

SECTION I.

NAMING AND DESCRIBING NEW FRUITS.

Rule 1.—The originator or introducer (in the order named) has the prior right to bestow a name upon a new or unnamed fruit.

Rule 2.—The Society reserves the right, in case of long, inappropriate, or otherwise objectionable names, to shorten, modify, or wholly change the same, when they shall occur in its discussions or reports ; and also to recommend such changes for general adoption.

Rule 3.—The names of fruits should, preferably, express, as far practicable by a single word, the characteristics of the variety, the name of the originator, or the place of its origin. Under no ordinary circumstances should more than a single word be employed.

Rule 4.—Should the question of priority arise between different names for the same variety of fruit, other circumstances being equal, the name first publicly bestowed will be given precedence.

Rule 5.—To entitle a new fruit to the award or commendation of the Society, it must possess (at least for the locality for which it is recommended) some valuable or desirable quality or combination of qualities, in a higher degree than any previously known variety of its class and season.

Rule 6.—A variety of fruit, having been once exhibited, examined and reported upon, as a new fruit, by a committee of the Society, will not, thereafter, be reconized as such, so far as subsequent reports are concerned.

SECTION II.

COMPETITIVE EXHIBITS OF FRUITS.

Rule 1.—A plate of fruit must contain six specimens, no more, no less, except in the case of single varieties, not included in collections.

Rule 2.—To insure examination by the proper committees, all fruits must be correctly and distinctly labelled, and placed upon the tables during the first day of the exhibition.

Rule 3.—The duplication of varieties in a collection will not be permitted.

Rule 4.—In all cases of fruits intended to be examined and reported by committees, the name of the exhibitor, together with a complete list of the varieties exhibited by him, must be delivered to the Secretary of the Society on or before the first day of the exhibition.

Rule 5.—The exhibitor will receive from the Secretary an entry card, which must be placed wieh the exhibit, when arranged for exhibition, for the guidance of committees.

Rule 6.—All articles placed upon the tables for exhibition must remain in charge of the Society till the close of the exhibition, to be removed sooner only upon the express permission of the person or persons in charge.

Rule 7.—Fruits or other articles intended for testing, or to be given away to visitors, spectators, or others, will be assigned a separate hall, room, or tent, in which they may be dispensed at the pleasure of the exhibitor, who will not, however, be permitted to sell and deliver articles therein, nor to call attention to them in a boisterous or disorderly manner.

SECTION III.

COMMITTEE ON NOMENCLATURE.

Rule 1.—It shall be the duty of the President, at the first session of the Society, on the first day of an exhibition of fruits, to appoint a committee of five expert pomologists, whose duty it shall be to supervise the nomenclature of the fruits on exhibition, and in case of error to correct the same.

Rule 2.—In making the necessary corrections they shall, for the convenience of examining and awarding committees, do the same at as early a period as practicable, and in making such corrections they shall use cards readily distinguishable from those used as labels by exhibitors, appending a mark of doubtfulness in case of uncertainty.

SECTION IV.

EXAMINING AND AWARDING COMMITTEES.

Rule 1.—In estimating the comparative values of collections of fruits, committees are instructed to base such estimates strictly upon the varieties in such collections which shall have correctly named by the exhibitor, prior to action thereon by the committee on nomenclature.

Rule 2.—In instituting such comparison of values, committees are instructed to consider:—1st, the values of the varieties for the purposes to which they may be adapted; 2d, the color, size, and evenness of the specimens; 3d, their freedom from the marks of insects and other blemishes; 4th, the apparent carefulness in handling, and the taste displayed in the arrangement of the exhibit.

T. T. LYON, Haven, Mich.
JOHN A. WARDER, North Bend, Ohio,
J. J. THOMAS, Union Springs, N. Y.
C. M. HOVEY, Cambridge, Mass.
P. J. BERCKMANS, Augusta, Ga.
} Committee.

EXTRACT FROM THE PRESIDENT'S ADDRESS.

In former addresses I have spoken to you of the importance of the establishment of short, plain, and proper rules, to govern the nomenclature and description of our fruits, and of our duty in regard to it; and I desire once more to enforce these opinions on a subject which I deem of imperative importance. Our Society has been foremost in the field of reform in this work, but there is much yet to be done. We should have a system of rules consistent with our science, regulated by common sense, and which shall avoid ostentatious, indecorous, inappropriate, and superfluous names. Such a code your Committee have in hand, and I commend its adoption. Let us have no more Generals, Colonels, or Captains attached to the names of our fruits; no more Presidents, Governors, or titled dignitaries; no more Monarchs, Kings, or Princes; no more Mammoths, Giants, or Tom Thumbs; no more Nonesuches, Seek-no-furthers, Ne plus ultras, Hog-pens, Sheep-noses, Big Bobs, Iron Clads, Legal Tenders, Sucker States, or Stump-the-World. Let us have no more long unpronounceable, irrelevant, high-flown, bombastic names to our fruits, and, if possible, let us dispense with the now confused terms of Belle, Beurre, Calebasse, Doyenne, Pearmain, Pippin, Seedling, Beauty, Favorite, and other like useless and improper titles to our fruits. The cases are very few where a single word will not form a better name for a fruit than two or more. Thus shall we establish a standard worthy

of imitation by other nations, and I suggest that we ask the co-operation of all pomological and horticultural societies, in this and foreign countries, in carrying out this important reform.

As the first great Pomological Society in origin, the representative of the most extensive and promising territory for fruit culture, of which we have any knowledge, it became our duty to lead in this good work. Let us continue it, and give to the world a system of nomenclature for our fruits which shall be worthy of the Society and the country,—a system pure and plain in its diction, pertinent and proper in its application, and which shall be an example, not only for fruits, but for other products of the earth, and save our Society and the nation from the disgrace of unmeaning, pretentious, and nonsensical names. to the most perfect, useful, and beautiful productions of the soil the world has ever known.

NOTE.—The above has been printed at the request of Mr. W. J. Beal, Secretary, American Pomological Society.

CULTIVATION OF CABBAGE AS GROWN ON THE ISLAND OF MONTREAL.

By Robert Brodie, Jr., St. Henri.

The secret of successful market gardening is thorough drainage, heavy manuring, and the keeping down of weeds. As it would take up too much space to write on market gardening in general we will dwell on the cultivation of cabbage as grown on the Island of Montreal. Montreal is getting quite a name for the enormous quantities of cabbage shipped from its port, they are sent as far south as Boston and New York, as far north as Newfoundland, as far west as Trenton and Kingston, and as far east as Sherbrooke.

The most favorable land for growing early cabbage is a black sandy loam well drained, having an inclination towards the south; with an application of seventy-five tons of well decomposed manure to the acre, three parts horse mauure and one part cow manure, ploughed in in the autumn, sufficiently to bury it.

The seed should be sown in hot beds about the end of February, and transplanted into other hot beds about the end of March, to have strong hardy plants to stand the ravages of the black fly, and the cold dry winds in May. As soon as the frost is out of the air the land manured in the autumn should be ploughed again one foot deep if possible; a light harrow should follow the plough, or men with forks level the earth, to make it as even as possible, so as not to have the necessity of harrowing afterwards; and the horses' feet treading down the earth. To set out the plants, rows should be made with a marker about two feet apart, and the plants set fourteen inches in the row; as soon as the plants are well started, keep the hoe and cultivator going. By this means of cultivation, plants that have been set out the first week in May, have made good cabbages for market by the 15th June.

The most popular early varieties grown are the *Early Jersey*, *Wakefield*, for shipping purposes; and *French Oxheart* for home market.

Second early varieties may be grown in the same manner as the early sorts, or in drills two feet and one-half apart, with one ton of manure to a drill of two acres in length, buried deep with the drill

plough and harrowed down with the saddle harrow, and the plants set eighteen inches apart, The most popular second early variety, or I might say the most popular of any variety grown in vicinity of Montreal, is the Totlers Early Drumhead ; it stands the drought well, is good either in a second early or winter variety. Some have grown these cabbages to weigh from thirty to forty pounds. The *St. Denis* used to be the favorite variety, but the green maggot is more destructive on this variety and the Savoy than any other variety.

Winter varieties may be grown in the same manner as second early varieties ; the plants set out about the middle of June.

Many people believe market gardeners apply hellebore or Paris green to the cabbage to destory the green worm ; this is a mistaken idea, for it is in the quantities they grow, and keeping them free from weeds and well cultivated, is the secret of success. Any one having a field of turnips may safely plant a few rows of cabbage alongside and they wont be destroyed by the worm.

Growers must bear in mind that they cannot have the land too rich for the cultivation of cabbage.

REPORT OF JUDGES ON GREENHOUSES AND WINDOW GARDENS.

To the President and Board of Directors of the Horticultural Society of Montreal:

We the undersigned judges have the honour to report that on the 27th February, 1884, we proceeded together to examine the several classes of green houses and window gardens, awarding prizes to the several entries made by the members of your Society, and beg to report on their merits as follows:—

Class A.—Mrs. Redforth, entitled to 40 points and 1st prize, $10.
Jesse Joseph, " 32 " " 2nd prize, $6.
D. Morrice, " 26 " " 3rd prize, $4.

Class B.—James Day, " 41 " " 1st prize, $10.
W. B, Davidson, " 21 " " 2nd prize, $6.

Class C,—No entries.

Class D.—John Auld, 1st prize.
George Luckard, 2nd prize.
John Harper and James Riddle, equal, 3rd prize.
Miss McCord, 4th prize.
John Hannah, 5th prize.

In consideration of the care, specimens, bloom, cleanliness and health of plants, exhibited by the above, we would recommend that each competitor be awarded prizes in the order as above enumerated. The report is humbly submitted.

G. L. MARLER,
JULES BETRIX,
JAMES MCKENNA.

Montreal, 8th March, 1884.

COUNTY OF L'ISLET HORTICULTURAL SOCIETY AND FRUIT GROWERS' ASSOCIATION.

Board of Directors elected for 1884.

Hon. E. Dionne, M. L. C., Commissioner of Agriculture, *Honorary President.*

Rev. J. Lagueux, *President.*

Eug. Casgrain, Esq., D. S., M. C. A., *Vice-President.*

A. Blais, Esq., *Director.*

L. Lapointe, Esq., "

Arthur Talbot, Esq. "

Th. Pouliot, Esq., "

P. G. Verreault, Esq., *Secretary-Treasurer*, St. Jean, Port Joli.

Aug. Dupuis, *Corresponding Secretary*, Village des Aulnaies.

The society has held, the past year, an exhibition of fruits, flowers; wines, (home made), jellies, honey and vegetables, for which the members received over $100 in prizes.

The display of fruits was good, though not quite so large as in 1882; the crops of apples and plums having been very light in this district.

The President addressed the meeting, which was numerous, in very appropriate terms, expressing his pleasure at the fine display of fruits exhibited, and said that the society was performing a work of usefulness by promoting the culture of fruits, by introducing hardy new varieties and by encouraging forest tree planting. The efforts of the society in testing with impartiality new varieties of fruits and reporting on them, is more important than is generally believed, particularly on account of the rude climate of our district, where only very hardy trees can live and thrive. Thus the good work of the society will be felt in the whole Province. The members must study the progress and experiences of our sister societies, who are ahead of us in the agreeable and profitable industry of fruit growing. The Rev. gentleman then asked one of the members to explain to the meeting the merits of the different kinds of fruits on the tables, which he did, calling the attention of all present to the large, even size and beauty of some varieties of

apples grown on different soils and exposures. He said, these varieties are reliable, we have the best proof of their hardiness from orchardists of this and the neighboring counties. The varieties alluded to were the "Alexander," "Fameuse," "Duchess of Oldenburg," "St. Lawrence," "Red Astrachan," "Yellow Calville," "Keswick Codlin," and "Wealthy," the trees bearing (most of them) early and abundantly should be planted in preference to other varieties.

The specimens of the above named apples brought from all parts of the County are all alike, and of superior quality, said the lecturer, thus intending purchasers of apple trees shonld take note of it and profit by the experience acquired, instead of planting trees that were not suitable to our rude climate.

The apple and plum crops are poor this year in the Province of Quebec. Two nights of frost in spring destroyed the buds which were just developing the pollen. Some varieties. whose fruit buds open later than others, did not suffer, and orchards near the shore of the St. Lawrence in this district also escaped, partially, the damage.

It is conceded, however, that the cause of the failure of the Orleans plum crop, is due to the weakness of the trees, which were exhausted by the abundant crop of 1882.

The foreign plum trees were plentifully laden with very fine fruits, especially "Lombard," "Bradshaw," "Imperial Gage," "Duanes Purple," and "Washington."

These varieties are doing very well here and should be planted more extensively, provided the trees are grafted on hardy plum stock.

The "black knot" is appearing in some orchards. We cannot too soon put in practice the advice given by experienced orchardists, which consists in pruning all branches affected and burning them at once.

Both apple and plum trees are benefitted by washing with soap suds early in spring.

The trees purchased by the society and distributed to its members in May, 1882, were seedlings, brought to our notice by the Ontario Horticultural Society, viz., "Beauty Arnold," "Ella" and "Ontario." They have not given satisfaction, they have a sickly appearance, have proved too tender for this district. The society cannot recommend them for planting in exposed situations.

The cherry crop was abundant and cherries sold at $1.10 to $1.25 per bushel, delivered at the orchards.

Strawberries are not grown here for market, but of the different varieties cultivated for home use, the "Sharpless" is the most popular.

Currants were plentiful and prices obtained were 40 to 50 cents per gallon, which was considered remunerative. "Black Naples," "Red Dutch" and "White Grape" are considered the most profitable.

Of grapes, only three varieties were exhibited, viz., "Concord," "Hartford" and "Champion"; the bunches were compact, large and well colored. The Concord were not fully ripe.

"Arbor Day."—Prizes were awarded to those who planted the largest number of forest trees on Arbor Day. Thousands of trees were planted. School children enjoyed the holiday by planting trees. We have the pleasure to state that 24 prizes were given to the school children of School No. 2, Village des Aulnaies, June last, by the Rev. Mr. Moisan, for having planted trees of different kinds and two edges of privet. The prizes, though only worth five dollars, pleased the children, and had the effect of showing them the importance of the work done. These prizes were donated by a member of the society.

Our gardeners and farm labourers, who have given long and faithful help to members of the society, have been rewarded according to their merit.

1st prize—Joseph Pelletier, 28 year's service at Mrs. Marier's.
2nd " —Joachin Ouellet, 14 year's service at Mr. A. Blais'.
3rd " —Joseph Ouellet, 11 year's service at Mr. L. Dupuis'.

The society should continue to offer such prizes.

Hints on grafting were given and the system of root grafting explained to the meeting, advising those present to propagate the best of the seedling apples growing in most orchards, by this easy method.

The Directors wishing to increase the membership of the society, and to obtain members from different parts of the Province to help them in their work and to give us their modes of growing trees, marketing fruits, &c., the Secretary is authorized to offer 25 apple root grafts to each person having paid one dollar subscription in the month of February next to the Secretary, P. G. Verreault, Esq., St. Jean, Port Joli.

The roots and scions well put up, grafted carefully, will be delivered May next by mail, to those entitled to them. By giving these young plants ordinary care they will grow and make fine trees of the hardiest varieties.

Each package shall contain Russian varieties of apples, brought to our notice by our most esteemed countryman, Charles Gibb, Esq., of Abbotsford.

The members appreciating the *devouement* of Mr. Gibb in undertaking the voyage to Russia, where he carefully studied and selected the best varieties of fruits, trees and shrubs suitable to the climate of the Province of Quebec, feel very grateful to him. We have learned by his associate, Mr. Budd, the great work they performed.

This testimony in favor of Mr. Gibb is sufficient to give perfect confidence in what he recommends for trial, therefore the Secretary was authorized by the Directors to solicit from the Commissioners of Agriculture the translation in French, and printing in pamphlet form, for free distribution, Mr. Gibb's report on "Russian Fruits," and "Trees and Shrubs of Northern Europe and Asia."

About 2,000 Russian apple root grafts shall be planted this spring by members of this society, which is the best appreciation given to Mr. Gibb's patriotic work.

The society, wishing to know if the apple and plum trees of this district would be suitable to the soil and climate of Manitoba, has communicated with Mr. Luxton, of the Manitoba *Free Press*, who kindly recommended Mr. W. G. Fonsega, of Winnipeg, as a very enthusiastic orchardist and practical gentleman, as one willing to accept plants, give them a fair trial and report results.

We shall send, this spring, an assortment of the fruit trees of this County and some of the new varieties of Russian apples. We would be happy if they would prove hardy and profitable there.

We have not made much progress this year, Mr. Shepherd, but we have done our best with our limited resources and our disadvantageous local situation.

Your obedient servant,

AUGUSTE DUPUIS,
Corresponding Secretary.

To R. W. Shepherd, Jr., Esq.,
Sec. Report Com. Montreal H. S.,
Montreal.

FRUIT GROWERS' ASSOCIATION OF COUNTY OF SHEFFORD.

Annual Report for 1883.

We have the honour to present a record of our annual labours as a Fruit Growers' Association in this County of Shefford, and in so doing we venture to hope that you will not be unmindful of our youth and inexperience, and that we on our part shall not be found to have disappointed the expectations which may have been formed of a successful exhibition by us, here, of the fruits of our orchards, gardens, and young vineyards.

According to previous announcement, our Association held its annual exhibition on Tuesday and Wednesday, the 25th and 26th of September, which we may not immodestly claim to have proved in every way a success, when we take into account the cold, wet summer through which we have passed, and which has wrought great damage alike to the apple crop and the flower garden.

Our claim to success is based in part upon the increased ratio in the numbers of entries over that of the year that is past, there having been recorded at our first exhibition in 1881, 462 entries; at our second in 1882, 480; and at our recent and third exhibition a total of 508 entries, showing an increase in the departments of fruits and and vegetables, respectively, of 35 and 6, while in the third department of pot plants and flowers there was a slight falling off, *i.e.*, of 13 entries; but this we believe to have been almost altogether due to the advent of a violent rain and wind storm on the early morning of our opening day, which prevented flowers from being brought any distance by intending exhibitors.

For our exhibit of apples we certainly offer no apology, there being shown on our tables no less than 452 plates, *i.e.*, 223 of grafted fruit, 182 of seedlings, and 47 of crabs.

It will be remembered that the directors have given their opinion as to the "five" best varieties for profit, viz.: "Fameuse," "Wealthy," "Duchess," "St. Lawrence," and "Alexander," and were glad to see

so large and fine an exhibit of four of these varieties displayed on 81 plates, the "St. Lawrence" and "Alexander" being especially good. The "Fameuse" was much more numerous, but much spotted and not up to the mark. The "Wealthy" was entirely unrepresented, but the directors are taught from the experience of orchardists elsewhere still to look for it as the coming apple, if not equal to the "Fameuse," yet superior to the "Duchess." "It has been most promising," writes Mr. Chas. Gibb, "it has as yet only proved profitable in anticipation, not in cash in hand. Its failure this year may mean that it is as tender in its blossoms as "Fameuse," or it may mean that it blossomed at the same time and was somehow in condition to be affected by the same blast that affected "Fameuse." In "Canada Baldwins" we had evidence enough afforded us that the gravelly soils in which they fruited were sufficiently suitable to produce specimens of that apple which would have taken first at your recent exhibition in Montreal of the Fruit Growers' Association of the Province of Quebec. We state this as the opinion of an experienced fruit grower and prize-taker at your exhibition above mentioned. But though it is held to be good on soils not light and dry, we are not prepared, any more than we were a year ago, to suggest or invite any indiscriminate planting out of this variety in preference to "Wealthy," though the temptation so to do may probably have been greatly increased by the results as shown at our own exhibition.

The "Blue Pearmain" exhibit was poor, and we are of the opinion that owing to the dying propensities of the tree in our particular neighbourhood and the tendency to split and rot, there are other varieties which will pay better for us to cultivate for keepers, for instance, the "Golden Russet" (not the "Bourassa") for which we may set apart its old section as in 1881.

Of seedlings some good collections were on the tables, four out of the dozen shown averaging 23 varieties, and considering the high market value paid for some apples of this class, we believe that our orchardists by a careful attention to the quality, rather than the quantity, will do well to cultivate the better kinds and replace the poorer with grafted stocks.

In crabs we had a fair exhibit, and we require yet a little longer time in which to determine what varieties are the most desirable to grow. This year a nameless variety coming to the fore and happen-

ing to carry off the first prize from those already acknowledged to be first crabs, such as "Queen's Choice," "Transcendant," "Montreal Beauty," and "Hislop." We have ordinarily room but for one good crab in our orchards, and it must be left to the individual fruit grower to make a choice of one out of the four or five admitted good varieties that has proved to be valuable for their jelly-making properties. And with a view of aiding others in making a suitable selection of this valuable fruit we should like to see a place at our next exhibition for specimens of jelly certified to have been made from and set over against the plates containing these better kinds.

Since apple culture will certainly receive impetus in this country from the existence of our Associations and from the opportunity afforded at least annually for a comparison of fruits, and interchange of ideas on the subject of fruit culture generally; it is of supreme importance that our younger members, particularly, be urged to cultivate only the best, *i.e.*, such as have proved among ourselves to be most serviceable for home consumption, and for placing on the markets; and to this end to avoid the purchase of trees recommended only by their cheapness, or perhaps by their highly successful cultivation under other and totally different influences of climate, soil, and situation, to those which we possess at home, and patronize rather our own home nurseries awhile, and exercise a wise and nice discrimination before admitting a new claimant to a share of our time, care, ground, purse, skill, and attention.

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With regard to our grape exhibit, we have reason to feel encouraged in a high degree. To Mr. W. M. Pattison, of Clarenceville, we are again indebted for a remarkably fine collection of 60 varieties of outdoor grapes, without exception the noblest display ever made in this proxince, when account is taken of the number of new varieties upon which this gentleman has recently experimented with such signal success; and "Mr. Pattison deserves," says a brother grape grower, "the highest praise for fruiting so quickly so many of the new varieties, such as "Early Victor," "Dempsey," "No. 5," "Lady Washington," "Faith," "Antoinette," "Belinda," "Linden," and "Naomi."

Though we had besides but one, (a local collection on exhibition,) yet in the "2 varieties" section we had no less than nine entries as against two of last year and three of 1881, thus showing beyond dis-

pute a willingness and an ability to make the competition in this section a keen one; the first prize falling to Mr. James Tompkins for some good samples of "Champion" and "Concord." There were 88 plates of grapes in all. Few of us have as yet gone in at all deeply for grape culture, but the results of this year's exhibition point to a manifest improvement over the past, and with the valuable experience of men like Mr Pattison placed at our command we ought to be and we hope to be in a position to put the culture of the vine within the possibilities of the average farmer of the county if only he be willing to be benefitted by that which is beyond the reach of his money to purchase, and which only the public spirited, such as the Gibbs and Pattisons of our vicinity, have in their power to bestow.

The grapes appear to have ripened a little earlier than last year, but if through the wetness of the season or through other causes they lacked flavor, it was in part atoned for by their size, some magnificent clusters putting in their claim as candidates in the section "Heaviest" single bunch.

Of other fruits the melons, especially the musk, were below par; the season, we are ready to admit, being too far advanced for any exhibit of the early ripeners. The presence, however, of some stranger Russians in both of these sections redeemed them from utter mediocrity. These created a general admiration for their size, compactness and extreme richness of flavor, and if the venture to introduce and acclimatize these melons prove a success, we shall hope to see them in large numbers at our next exhibition, when, perhaps, it will be thought advisable to offer special premiums as an inducement to the cultivation of what Mr. Chas. Gibb tells us is a fine, large, long keeping quality of fruit.

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Proceeding next in order to comment on our vegetable display, which was arranged in the lower hall with some attempt at symmetry not attainable in former years, we have reason to think that Shefford County has little to be ashamed of in this connection, for, with the exception of "Cauliflowers" and "Celery" (in Red Cabbage there were no entries at all), the exhibits were all more or less worthy, but in one section, "Basket of Vegetables," the contents, though good in themselves, seemed more inclined to retire out of sight altogether in the depths of ash and willows, than to show themselves up in all their fair proportions as candidates for the prize of beauty.

Indeed it seemed more like an exhibition of baskets than of vegetables, whereas it is the intention of the directors to encourage the artistic arrangement as much as the variety of the vegetables themselves, so that in color, form, and general harmony of design they may be in reality "Vegetable Bouquets;" to the tasty putting together of which we believe the hand of the farmer's wife or daughter will in the future be a real necessity. May the basket of vegetables come forth from every farmhouse in the land, telling out in silent eloquence that God, even our own God, has again been faithful to his promise to bless the honest labors of his peoples' hands, and thought of as an offering our first fruits and our best unto the great Provider; the time, care and skill spent upon the arrangement of them cannot possibly be deemed a waste.

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There is no doubt that Shefford County is now leading the province in the matter of potatoes.

It is only they who have labored to raise a collection of tubers that shall be really good, such as that which met our gaze upon entering the exhibition room on that occasion, who can begin to appreciate the the benefit derivable to the country at large from the heroic efforts of our prize-takers in section 36 with their unparallelled exhibits of 28, 44 and 45 respective varieties.

The extent to which the county will be benefitted in time to come from the exhibits in this one section alone can hardly be over-estimated; for the difference in value to the community between the apples grown upon the Fameuse bough and those which our good French neighbours speak of as "products of the earth" is all in favor of the latter, and it is for developing the culture of both one and the other that our Association exists. For this we seek the hearty active co-operation of its many members, a liberal share of public patronage and an honest recognition upon its merits alone by our Provincial Council of Agriculture.

And here it will not be out of place to express a hope that next year we might be honored by the presence of a number of the Council, that they may witness the growth of our Association, and the evidence of expanded interest in the work which you design to foster and encourage, as shown by the products which the members of this Association will then hope to place before your Representatives.

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The summary of our annual effort would be incomplete without a brief notice of our *Floral Exhibits*. Here, as has been already said, was a falling off in the ratio of increase over former years ; not by any means we believe a decrease of interest among our fair exhibitors, for this is the department which, under the patronage of Flora, is peculiarly the Ladies', but due partly to the late date at which our exhibition was held, and partly to the poor season we had for annuals everywhere.

We hope the competitors in the various sections will not be discouraged by the fact that the judges withheld as many as seven prizes —five first prizes—for lack of sufficient merit in the exhibits, but rather that it may have the effect of raising their standard of perfection by teaching them that it is not enough that there be three specimens (say in a section requiring single plants to be shown) to secure the three prizes offered, but that certain degrees of excellence are looked for as a condition of attaining these results.

With a word of warning and encouragement with reference to the floral designs, we conclude we should be sorry to find our fair exhibitors growing content with merely utilizing the varied forms of use and ornament among us as vehicles or bodies for a more or less artistic display of covering flowers, when it is manifestly in their power to conceive an original design combining it may be several ideas in one piece, the whole florally treated and executed as tastefully as it has been our lot sometimes to witness.

All we aim at is to do common justice to the exhibits, and we regret that the work which our judges are called upon to perform has not yet been made easier, by the carrying out of our excellent suggestion made in our report of last year, "that a code of rules be placed in the judges hands" containing certain points of excellence by which to test "the several exhibits before them more satisfactorily and 'promptly' than they can possibly do without them," and this should be done for the judges in every department, so that the decisions of those who are from time to time chosen to act in a judicial capacity may be more reconcileable with an acknowledged general high standard of superiority than they have been sometimes considered to be.

It would be a matter of extreme regret to the directorate if in the future our liberal prize list should have to be reduced. The bare possibility of diminished premiums shows the necessity of increasing support on the part of those who are indirectly or directly reaping benefit from our Association.

A broad, manly, self-denying, intelligent public spirit in its officers and members will plant this institution in the hearts and confidences of the people, and moreover, attract to us a number of appreciating friends and patrons from without the limits of our county, and still further enable us to appeal with greater reliance for an increase in our small yet acceptable grant, in the belief that in achieving a success in the old County of Shefford we are doing a good work also for the province at large.

We believe that this spirit will continue to possess the minds of our future directors, and that under their wise, economical and large-hearted management, our roll of membership will be considerably augmented, more hearts and hands be practically interested in the conduct of affairs, so that there may exist a healthy rivalry in bringing the exhibition of the year 1884 to such an issue as to make any who have stood aloof and not worked for this public spirited Association feel, as they will deserve to feel, that they are among the losers rather than the gainers by such a course of apathy and unconcern.

In conclusion,—To those who have contributed to the success of our exhibition either as exhibitors or judges our cordial thanks are due. To those ladies and gentlemen who assisted in our concerts our thanks are also due and are hereby tendered, and with the expression of a hope that all will continue to work unitedly to make ours the head and front of the Fruit Growers' Association in the Province of Quebec, and worthier from year to year of the valuable support of the Council and of the Legislature, we hereby conclude this report of our own work for the year 1883.

All of which is respectfully submitted.

(Signed,) W. B. LONGHURST,
Director F. G. A., Co. Shefford.

REPORT OF THE MISSISQUOI HORTICULTURAL ASSOCIATION, 1883.

President, Hon. Thos. Wood. *Vice-Pres.*, Dr. J, B. Gibson.
David Westover, *Secretary-Treasurer.*

It is gratifying to be able to report a continued interest on the part of the farming community in this Association. The number of plates of apples exhibited were 251, crab apples 50, pears 12 and grapes 65. Many of the specimens were quite equal to previous exhibits, while of others it was impossible to find perfect fruit, although one would naturally infer that when trees had but small crops growing upon them the specimens would be large and fine. Yet quite the reverse seems to be a fact. The task of finding fair samples will be found far easier in years of abundance, the fruit larger and finer and even of better flavor. The past season was one of disappointment in this respect. The spring opened with a good show of blossoms, but midsummer showed us that large numbers of trees were falling off, and that our hopes would not be realized. The Red Astracan, Fameuse, St. Lawrence and Blue Pearmain were so spotted and ill-shaped as to be almost unsaleable. The Baldwin, Talman Sweet, Pomme Grise and Peach but little better. We can, however, give a good report of the Duchess, Alexander, Golden Russett and Ben Davis. If there is anything in the theory of the survival of the fittest I feel confident in recommending the latter four varieties as being hardy, early and prolific bearers, and profitable for market, as well as furnishing a good variety for early and late keepers. It may be said that all of these have thick and tough skins and do not rank as best for table use. But the Russett and Ben Davis certainly rank best as late keepers, and if their flavor is not everything that is desired I think we can ill afford to be without such valuable varieties.

Is it not possible that their thick skins are a safeguard against the spotting which is making such havoc with other sorts, notably the Fameuse? or is it due to climatic influences?

Small fruits were in great abundance. We never had a better show of plums. A collection from the garden of the late N. S. Whitney were of extraordinary size and excellent flavor.

Large collections of grapes were shown by Mr. Spence, M.P.P., Mr. Pattison and Hon. T. Wood, amongst them were several new varieties not before exhibited here. The display of flowers and vegetables was, as usual, large and creditable.

REPORT OF THE FRUIT GROWERS' ASSOCIATION OF ABBOTTSFORD.

N. C. Fisk, *President.* Charles Gibb, *Secretary-Treasurer.*

This Association held its eighth annual exhibition at Abbottsford, on the 27th of September. A fine day brought the usual attendance —an attendance, however, less distant and more local than in former years, owing partly to the organizing of Horticultural Exhibition in the counties to the south of us, and in part owing to notice widely given by ourselves, that our apples were not up to their usual standard.

APPLES.

Our apple crop last year was a success or failure, in proportion to the shelter from or exposure of our orchards to the south-east wind. Orchards fully exposed to this wind scarcely produced any apples, and these not fit for market; aged trees proved an exception, they bore fairly, and the fruit was of fair quality. A few orchards quite sheltered by the mountain from the south-east wind produced a fair amount of fruit, and some of it of fine quality. Thus our collection of 270 plates was a surprise to to the members generally.

CRAB APPLES.

Ten years ago when we scarcely knew anything about the Russian apple, we began to experiment vigorously with hybrid crabs, we have, therefore, some thirty varieties in our orchards. Last year they produced either moderately or profusely, showing their use in unfavouaable seasons as well as unfavourable localities. We had 38 plates on exhibition. If we were to suggest a list of the best edible crabs, it would be Early Strawberry, Whitney's No. 20, Gibb and Briers Sweet, and perhaps Orange and Meader's Winter.

PEARS.

Of all the varieties so far tried at Abbottsford, "Flemish Beauty" takes the lead, so much so that the Association at its annual meeting decided to procure a tree for each member. That variety long known in Montreal under the erroneous name of "Burré Diel" also seems

an early and good bearer, though rather less hardy. It is one of the sub-acid pears. "St. Ghislain," too, has been bearing its first specimens,—it and "Clapp's Favorite" seem the next most promising. Of the new Russian Pears we have already seven varieties planted last spring, received from Prof. Budd, of Ames, Iowa. By resolution at our annual meeting, the "Bessemianka will be propagated as soon as possible for distribution among our members.

PLUMS.

This was our first really good show of plums. "Lombard" bore heavily; several other European varieties, moderately or heavily; yet we feel that these varieties are somewhat uncertain at Abbottsford.

Of native American varieties, "Miner," a variety of the Chickasau, or wild plum of the West and South-West, has borne a moderate crop for the last five years, which ripens just before hard frosts. It is a large red plum, with a peculiar flavour like a musk melon, pretty good for eating, and good for canning, and if skinned, almost first-class for canning. Several seedlings of the wild plum of Wisconsin have borne heavily for the last five years, and though only second rate in quality are worthy of being widely scattered.

We are looking with hope to the better varieties of the plums of the North Western States, such as Desota, Moreman, Basset, Forest Rose and Rolling Stone. These have been received for trial from Prof. Budd. I will also say that the flat plum of China ("Prunus Simonii") seems so far as hardy as "Lombard."

GRAPES.

How rapid has been the progress in the culture of the out-door grape. Mr. J. Mead Pattison, of Clarenceville, Que., distanced all competition with his collection of about 55 varieties. The remarkable point about this collection was the number of new grapes which had scarcely been known more than a year or two ago. Abbottsford collections followed, with 29 varieties. The past season has been most unfavourable for the ripening of the out-door grapes. It has enabled us to see things at their worst, to see what may be grown and ripened in the most unfavourable season. As we have said before, we should plant sparingly of grapes later than Delaware. On the evening of our exhibition we formed ourselves into a tasting committee. Again, about six weeks later, we held a general social meeting for tasting 57 of the varieties which had been exhibited. We

were thus able to form some opinion of the ripening power of some varieties off the vine, and also to test their keeping qualities.

ORNAMENTAL AND TIMBER TREES.

A new feature of our exhibition was a collection of the foliage of about 100 varieties of ornamental and timber trees, not natives of this province. Among these were 11 varieties of the maple, 11 of ash, 10 of willow, 5 of European basswood, 8 of poplar (including 3 varieties from Siberia, and one from Turkestan). There were also Walnuts and Phellodendrons from North China and Japan. Also the Cercidiphyllum which grows to such immense size in the colder climates of the Northern Island of Yezo. The Sophora, Jinkgo, Ailanthus and Honey Locust from China; Conifers from the Rocky Mountains, Central Europe, Chinese Tartary and Japan, showing that Abbottsford is doing her best to increase the flora of the Province.

Abbottsford can also boast of an experimental forest plantation. About seven years ago a plantation of nearly 1,000 trees was set out, in which the Canadian White Pine was planted alongside the Scotch, Austrian and Ponderosa Pines; our own White Spruce alongside the Norway; the Sugar Maple alongside of the Ash-leaved and Norway Maples; our Tamarac alongside the European. The collection also included European White Birch, Yellow Locust, White Ash, Catalpa, Black Cherry, Cottonwood, the Silver Poplar of Europe, and many other varieties. This plantation is already beginning to answer some interesting questions. Both ornamental planting and forestry have received some attention, and we believe that Abbottsford is the only place in this province where the beautiful European cut-leaved Birch and Norway Maple, Schwerdler's Maple and Weir's cut-leaved Maple have been planted as roadside trees.

FLOWERS AND VEGETABLES.

In these departments our exhibits are always creditable, but the interest taken in them is mainly local. In potatoes our last exhibition far surpassed that of former years. The first prize was carried off by Mr. A. Vandewaters, of St. Armand, with a collection of 46 varieties, and the second by Mr. Marcus Lynch, of Granby, with 29 varieties. This was but a ripple upon a distant shore of that tidal wave of interest in this tuber, set in motion a few years ago by Dr. Greene, of Granby.

In conclusion, we would draw attention to the amount of experi-

mental work which is being carried on by our Society—work so necessary in our cold climates. The Russian fruits claim immediate trial. We have already " healed in " at Abbottsford, 4 Russian apple trees for each member of our Society for the past year. We are also procuring for the members for 1884, other varieties of the Russian apple from Minnesota and Rochester, N.Y.; also a tree of " Flemish Beauty " for each member. We have also ordered a collection of the Russian cherries and plums from Moscow.

The Missisquoi, Brome, and Shefford Horticultural Societies are each undertaking a similar work, and have received a large number of varieties for trial.

Such work must have important results.

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