

cally harmless to the pigs and may be used without any fear as to the results; or

(B) Creolin or chloro-naphtholeum, one ounce to half a gallon of water.

These solutions should be applied three times, at intervals of two or three days. Before using the solutions, remove as far as possible all dirt from the pig's snout, or a larger amount of the solution will have to be used to get good results. The sow's udder should also be washed with one of these solutions two or three times.

Disinfection of the farrowing pens with hot lime water should also be performed, as it has been noticed that litters farrowed in the same pen at different times have been affected with this disease.

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ENTOMOLOGY.

Morning-glory Insects.

For some weeks past, the lower leaves of the morning-glory (*Convolvulus*) have been disfigured with glassy blotches, in some cases so close together as to leave little green except the midrib and veins, in which case what remained of the leaf soon withered and fell. On examination with a magnifying glass, it was found that these blotches were caused by a tiny caterpillar, about quarter of an inch long when full-grown. It lives between the upper and under skins of the leaf and devours the green substance; as the transparent cuticle is left on both surfaces, the patch presents a glassy appearance. As many as fifteen worms were found in one leaf. The chrysalis is long and narrow, not much thicker than a coarse pin; from it emerged, in about a week or ten days, a tiny moth of a dull creamy color, much resembling in size and color the familiar clothes moth. I have not yet been enabled to determine its scientific name, but it belongs to the family *Tineina*, the members of which are very minute and oftentimes very destructive. A large number of species, like the one before us, are leaf-miners, and may be found at work in the foliage of all kinds of trees, shrubs and plants, including many troublesome weeds. Some make curving or serpentine tunnels in the leaves—these are common on the nasturtium, for instance—and others irregular blotches. As no external application will reach them, the only remedy seems to be to pick off all affected leaves and burn them. I have found some small spiders and a predatory bug helping to reduce their numbers.

Many leaves of the morning-glory are also observed to be more or less riddled with holes. These are largely the work of grasshoppers, but in some cases they are made by the larva of a very beautiful beetle. In the sunlight it looks like a drop of burnished gold or molten silver, but it loses this brilliance when dead. It belongs to the tortoise beetles (*Cassida*), so called from their shape. They are never numerous enough to be considered destructive.

C. J. S. BETHUNE.

GARDEN AND ORCHARD.

Fruit Prospects in Nova Scotia.

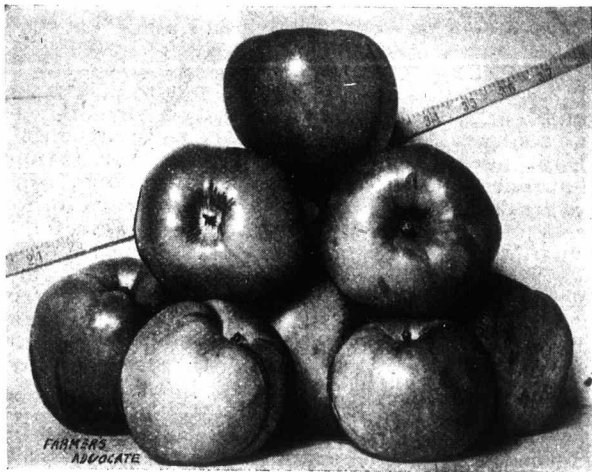
The flattering promises for fruit in this Province reported earlier in the season, have materialized so far as quantity is concerned. There will be more apples gathered this year than in any previous year since the banner crop of 1896. But the quality is not all that could be desired. Black spot has not been so prevalent for years, and even with the most careful selection, the quality of apples exported can scarcely be kept up to the usual high standard. On Sept. 12th and 17th occurred two of the most disastrous gales ever known in the Province, and fruit of all kinds suffered greatly. As high as one hundred barrels of apples were blown off in a single orchard. It is greatly to be hoped that none of these will find their way across the water to England, as the result must necessarily be a serious loss, in the depression of prices on better grades of apples. Plums have been a good average crop, with prices ranging so far, from \$1 per basket for fancy Burbanks to 25c. for Morris' Arctic. There is an unusually fine crop of pears, both as to quality and quantity, but as yet this fruit is not grown in sufficient quantities to supply the home demand, and large quantities are imported from California and elsewhere.

Bud Variation.

There are two great laws operating in both the plant and animal worlds, and governing the characters of the members of each generation. These laws are, 1st, the law of variation, that each individual varies somewhat from all others, both from its parents and from the other members of its own generation, and 2nd, that "like begets like," or that there is always a certain resemblance between related plants and animals. The second of these laws is perhaps the best recognized in the ordinary operations of the farm, yet the other is no less far-reaching.

Among plants this law of variation is shown most strikingly in the character of seedlings, but it has long been recognized that plants produced by any of the methods of bud propagation (grafting,

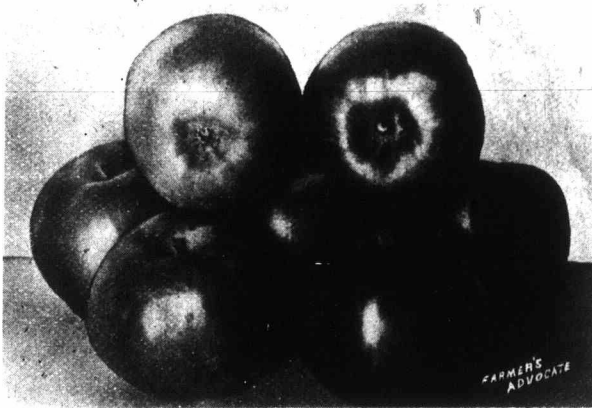
budding, cuttings, etc.) do not always "come true," or, in other words, that the growth is not like from all the buds of a tree. Yet it is only within very recent years that the frequency of this variation has been observed, and even now its importance is by no means realized by the great majority of those who are, or rather ought to be, interested in the matter. Take the single instance of the Red Gravenstein, of Nova Scotia, as an example. About the year 1876, Mr. Banks, of Waterville, Nova Scotia, observed that the fruit on one small branch on his Gravenstein tree was of a distinctly different color from that on the rest of the tree, being much more highly colored. He realized that this was a desirable variation, since the English market, if not, indeed, all others, paid better prices for highly-



TYPICAL OR NORMAL GRAVENSTEIN GROWN IN NOVA SCOTIA.

colored fruit. He therefore began propagating from scions taken from this branch, and the result has been that he has now propagated this variation through four generations, the characteristic color still persisting, and it has become a well-established variety and one of the most popular in the Province. Mr. Banks saw a desirable quality in his Gravenstein, and has by careful selection made this a comparatively fixed characteristic of the variety. This is but a single instance, of a single character, color, yet it seems certain that what is true of this one characteristic is true of all others, that there is always a greater or less variation from the parent plant, and that desirable variations in quality, season of ripening, productiveness, etc., may just as easily be perpetuated. It is difficult to say how important this fact may prove in the future when our knowledge of everything pertaining to plant life has become more complete, but at least, it is safe to say that the indiscriminate use of all sorts of scions from all sorts of trees in the propagation of fruit trees is a distinct mistake, and one which ought to be remedied, and it is the farmer and fruit-grower who must bring about the reform.

Meanwhile the occasional instances of striking variation like the Red Gravenstein are worthy of careful study as affording the best opportunities to



THE RED GRAVENSTEIN OF NOVA SCOTIA.

arrive at the laws governing such matters, and to draw general conclusions.

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Fruit at the Halifax Exhibition.

Last year, when the date of opening the Provincial Exhibition was changed from September 20th, as in 1899, to September 12th for 1900, it was confidently predicted, even by those who favored the change, that the fruit exhibit would amount to very little, since a week at this season of the year makes a wonderful difference in the appearance of both pears and apples, and Nova Scotia prides herself especially on her late commercial varieties of apples. It was therefore an agreeable surprise to everyone to find, when the exhibits were all in place, that the show, to the casual observer, at least, was the best ever made in Halifax. It is true that when one studied the exhibits carefully, he found Baldwins, Fallwaters, Golden Russets and Northern Spies almost entirely absent, and

their places taken by such varieties as Red Astrachan, Duchess of Oldenburg and Early Bough, so that as an advertisement of what this Province can really do in apple-growing it was not a fair showing, but from the artistic standpoint, or that of mere beauty, the exhibit was all that could be desired.

A thing which impressed one most strongly in comparing this year's exhibit with that of previous years was the favorable showing made by counties outside the Annapolis Valley. The entries from Pictou county were especially noticeable as being better in quality and much more extensive than in former years, and Halifax, Colchester and Yarmouth counties were almost as good. In point of color, the fruit from these outlying counties will in many cases rank ahead of the same varieties grown in the Valley, a fact which ought to encourage the growers in these new districts to increased efforts, since color is so important a factor in the English markets. Along with this difference in color, one noticed that in these newer counties (newer so far as fruit-growing is concerned) there is a predominance of new and often almost unheard-of varieties, while many of the old standard sorts are lacking. This is doubtless due, in part, to the activity of the fruit-tree agent, and may not be altogether objectionable, since some of the new varieties may be better suited to these new districts, yet this practice of taking up with untried sorts is one in which it is best to make haste slowly.

There was a very creditable exhibit of plums, and the Japanese varieties, Burbank and Abundance, were again very much in evidence. There is no longer any question that they are in future to be among the leading sorts of this Province, and it is doubtful if any other variety now grown can rank with Burbank as an all-round market sort. Its large size, attractive appearance, excellent quality and thick skin make it almost an ideal shipping plum. In this connection one must not neglect to mention what was perhaps the most interesting feature of the whole fruit exhibit, judged from the importance of its bearing on the future of the industry. This was a crate of Burbank plums competing in the section for "best box or crate, packed for market, to contain one-half bushel; cost and suitability of the package to be considered as well as the fruit." The plums in this crate were packed first in small splint boxes, two layers deep, with paper between, and about three dozen plums in a box. Then six of these splint boxes were packed in a crate, three boxes to a layer. The whole thing was exceedingly neat and attractive, and Burbanks of the quality shown, packed in this way, should command fancy prices wherever customers are willing to pay for dessert fruit of high quality. It would seem that these plums ought to give good returns shipped to the English market, where late plums are said to command good prices. At all events, they will certainly drive out of our local markets the old inferior sorts which have so long held undisputed sway there.

The exhibit of pears was also exceptionally large, and the fruit was of good quality, and in examining it we could but feel that here was a department of fruit-growing which ought to be expanded. As yet the growing of pears commercially has been given but little attention, yet this exhibit shows what can be grown, and certainly the quality would warrant the belief that the same energy and push applied to pear-growing that is now given to apples would give most satisfactory returns. There was a splendid display of Clapp's Favorite, Clairgeau, Beurre Hardy, Louise Bonne de Jersey, and Souvenir du Congrès, with Bartlett, Bosc, and Flemish Beauty but little behind.

No account of the fruit at Halifax would be complete without some mention of the exhibits from Jamaica and Trinidad, which formed a most interesting feature of the horticultural building, and one which from its novelty attracted perhaps more attention than any other. It was especially interesting just now, when the subject of closer trade relations between Canada and the West Indies is receiving so much attention. In fruits, the exhibit contained oranges, lemons, limes, grape fruits, coconuts, and bananas, besides a good deal in the way of bottled materials, for which the fruit-growers of the Islands were originally responsible. There were also sugars of various kinds, and cocoa in all stages, from the raw material in the pod to the finished product in cans. And added to all these was an endless variety of woods and wooden products, and minerals in solid and liquid form (the latter consisting of a collection of a half dozen sorts of mineral waters). Just what the attitude of the fruit-growers of Nova Scotia is or ought to be on this matter of introducing tropical fruits into Canada free of duty cannot be definitely stated, but there is no room for doubt that they were very much interested in this exhibit of West Indian products.

F. C. SEARS.

British Apple Market Report.

Messrs. Simons, Shuttleworth & Co., Liverpool, cable that as no Canadian apples landed in time for to-day's sale, they are unable to give quotations. The market continues strong, however, and prices have advanced slightly. The demand is active for good, sound, well-packed apples. Shipments last week, without Nova Scotia, will aggregate: 6,500 bbls. to Liverpool, 6,000 bbls. to Glasgow, 250 bbls. to London, 600 bbls. to Hamburg; a total of 13,350 bbls., against 32,500 bbls. for the same week last year.

J. M. SHUTTLEWORTH.

Bow Park, Bradford, Sept. 20th.