

Oregon and Japan, etc., (such as *Lysichiton*, *Fatsia*, *Glehnia*); yet there is less community between these floras than might be expected from their geographical proximity at the north. Of course the high northern flora is not here in view.

Now if, as I have maintained, the eastern side of North America and the eastern side of Northern Asia are the favored heirs of the old boreal flora, and if I have plausibly explained how Europe lost so much of its portion of a common inheritance, it only remains to consider how the western side of North America lost so much more. For that the missing types once existed there, as well as in Europe, has already been indicated in the few fossil explorations that have been made. They have brought to light *Magnolias*, *Elms*, *Beeches*, *Chestnut*, a *Liquidambar*, etc. And living witnesses remain in the two *Sequoias* of California, whose ancestors, along with *Taxodium*, which is similarly preserved on the Atlantic side, appear to have formed no small part of the Miocene flora of the arctic regions.

Several causes may have conspired in the destruction;—climatic differences between the two sides of the continent, such as must early have been established (and we know that a difference no greater than the present would be effective); geographical configuration, probably confining the migration to and fro to a long and narrow tract, little wider, perhaps, than that to which it is now restricted; the tremendous outpouring of lava and volcanic ashes just anterior to the Glacial period, by which a large part of the region was thickly covered; and, at length competition from the Mexican plateau vegetation,—a vegetation beyond the reach of general glacial movement from the north, and climatically well adapted to the southwestern portion of the United States.

It is now becoming obvious that the Mexican plateau vegetation is the proximate source of most of the peculiar elements of the Californian flora, as also of the southern Rocky Mountain region and of the Great Basin between; and that these plants from the south have competed with those from the north on the eastward plains and prairies. It is from this source that are derived not only our *Cactææ* but our *Mimosææ*, our *Daleas* and *Petalostemonææ*, our numerous and varied *Onagraceææ*, our *Loasaceææ*, a large part of our *Compositææ*, especially the *Eupatoriaceææ*, *Helianthoidææ*, *Helenioidææ*, and *Mutisaceææ*, which are so characteristic of the country, the *Asclepiadæææ*, the very numerous *Polémoniaceææ*, *Hydrophyllaceææ*, *Eriogonæææ*, and the like.

I had formerly recognized this element in our North American flora; but I have only recently come to apprehend its full significance. With increasing knowledge we may in a good measure discriminate between the descendants of the ancient northern flora, and those which come from the highlands of the southwest.

The following statement of the present condition of Agriculture in Canada in general, and Nova Scotia in particular, is from the *London Morning Post*:—

During the whole of the year 1884 a Select Committee of the Dominion House of Commons has been inquiring into the

condition of the agricultural interests of Canada, and its report, which has just been issued, is more noteworthy for the information it gives on the actual state of agriculture in the various parts of the Dominion than for the very bald and meagre conclusions at which the committee have arrived. The conclusions are that a Bureau of Agriculture and a State experimental farm be formed for the Dominion. The volume shows, however, very clearly that the newer and more prolific lands of the north and northwest, and the low prices which they have caused, are affecting the older lands of the Dominion quite as much as they affect the English farmer. There, as here, it is smart farming that pays, and smart farming only. Those who grow wheat and risk their all on the crop are being pushed to the wall, but there is abundant evidence in this volume of over 200 pages that, while the North-West may well be left to produce wheat, in the Eastern provinces other crops are fast taking its place, and that these crops are so far as possible of the best varieties, of a sort easily grown, and such as shall command a good market. Thanks to the kindly given information of the large firm of potato and apple salesmen—Messrs. Northard and Lowe, of King's Cross—we have given our readers once or twice during the present year information regarding Nova Scotia. This province may well be taken as an example of what is being done all over the Eastern provinces of Canada. While English farmers have been crying over bad seasons and worse markets, the Nova Scotians have entirely changed their croppings, have planted large areas of apples, and for both of these crops have made a market in England and America. We have during the past year examined and tried both the apples and the potatoes. Of the former the gravensteins, pippins, russets and baldwins have taken the top place and price not only in New York, but also in England, while the Burbank potato has been proved to be far superior to the magnum bonum wherever it has been tried in 1884; and at the present time some 200 tons, grown in Scotland, are being offered for seed for the Midland and Southern counties. But the Canadians are tired of each grower having to find out for himself what are the best sorts to grow, and some of the provinces have not been so successful as Nova Scotia. Hence the Select Committee of the Canadian House of Commons, and the request of it for the help of a good Bureau of Agriculture and experimental farm. This latter is to try the various varieties of the different crops, and to report on the best. Besides this there is a great movement in favour of an extension of dairy farming and stock

feeding. Canada is, in point of fact, giving us a very useful lesson in procedure in these disastrous times.

A FARMERS' Institute, under the auspices of the Michigan State Board of Agriculture, was held, Jan. 15th and 16th, at Flushing, Mich.

Prof. Samuel Johnson, of the Agricultural College, read a paper on "Practical Agriculture at the Agricultural College." He opposed the idea that students at agricultural colleges should devote their whole time to study alone. Theory and practice, study and work, should go hand in hand. Were it otherwise, the theory of agriculture could as well be taught at the university. He held that manual labor, at agricultural colleges, should be compulsory. Unless students labor, there is danger of their acquiring a sort of contempt for it. He gave a synopsis of what is taught at the Michigan Agricultural College, and how it is taught. At fifteen minutes to one o'clock the students, dressed in working suits, report for labor, are divided into gangs, and, under the direction of overseers, they labor three hours in the performance of work that has been previously planned. Students are paid 8 cents an hour for their labor: seniors are paid a shilling an hour when they have freshmen under their charge. The pay received for labor enables many young men to secure an education who otherwise could not afford a college course. The two greatest obstacles were to furnish sufficient labor, and to secure competent superintendents. The most satisfactory plan had been to allow the most competent seniors to act as overseers, increasing their pay, and making all consider it a position of honor. Agricultural colleges had been objected to because many of the graduates did not become farmers. He admitted that agriculture was not the only thing taught, that many students came there with no intention of becoming farmers, but a large percentage of the students did become farmers. Many, besides agricultural students, did not follow the calling for which they were educated. Some thought the college should pay a handsome profit, others, that it should be an experiment station; his idea was that, so far as possible, it should be conducted in much the same manner that a successful farmer would manage his farm.

S. R. Billings said that, if he had a son that he wished to have become proficient in any special branch of farming, he should not send him to the agricultural college, but to some man who was successfully making a specialty of that branch of farming, but if he wanted him to receive a scientific course, he would send him to the agricultural college, because work was joined with study.