

of the principal sources of sulphur for making sulphuric acid, the basis of heavy chemicals used in the production of ammunition, dynamite, etc. The report, we notice, ventures no suggestion as to what governments might undertake in the direction of equalizing to some extent urban and suburban populations or relieving the farm labor situation which as our readers well know is hindering the expansion of agriculture.

The long-looked-for collapse of real estate speculation in the West is recorded and this with unfavorable crops in 1914 and the war, have combined to test the country severely but have driven home the conviction that reliance must be placed on its producing power. Dairying and stockraising have continued to increase in the three Western provinces, but unfortunately high grain prices retard this tendency and undoubtedly the call for more wheat will once more abnormally promote grain growing and selling. Immigration from Europe has practically ceased, but the value of cash and effects of land settlers from the United States is reported to show practically no diminution. Many farmers who had been renting their farms and retiring to the cities are now returning to the land. It is conceded in the review that most farmers did better last year in preparing land for seeding than ever before. "The unsuccessful farmer attributes his non-success to conditions arising from the tariff, high rates of interest, high freight rates, and high cost of what he has to buy—to anything but the underlying cause—inefficient farming methods." Naturally the bankers' view is that this is the whole secret and that if production were increased profitably by better methods then lower rates would follow. Why not try both plans at once? Then success would surely follow. Suppose these "Big Interests" meet the Western farmer half way. It is regretted that the results of the work of the excellent Experimental and Demonstration Farms seem to reach so few farmers and especially the many inexperienced ones and those who need the information most. In that respect we would suggest that greater use might be made of the medium of the agricultural press, which by many, is declared to have done more for the advancement of farming than any other agency. A favorable report to the Manitoba Government has been made on the North Dakota field-agent plan by which farmers are advised with on their own farms. This is an application of the Ontario Agricultural District Representative plan and the Manitoba Minister of Agriculture has announced that a number of field-agents will be started in the spring.

In the British Columbia section there is little noted re farming beyond what was outlined in the Christmas number article of "The Farmer's Advocate." Agriculture is extending in the Yukon, particularly pork and poultry production and fox farming is being extended and likely to include mink and marten.

Business depression had manifested itself in the United States before this war began but on the whole the situation is gradually improving though still too uncertain for accurate forecast. High tribute is paid to the thoroughly efficient measures adopted by the British administration to sustain credit and commerce after the outbreak of the war, and it is conceded that the Allies are now best equipped for the consequent drain and a successful issue.

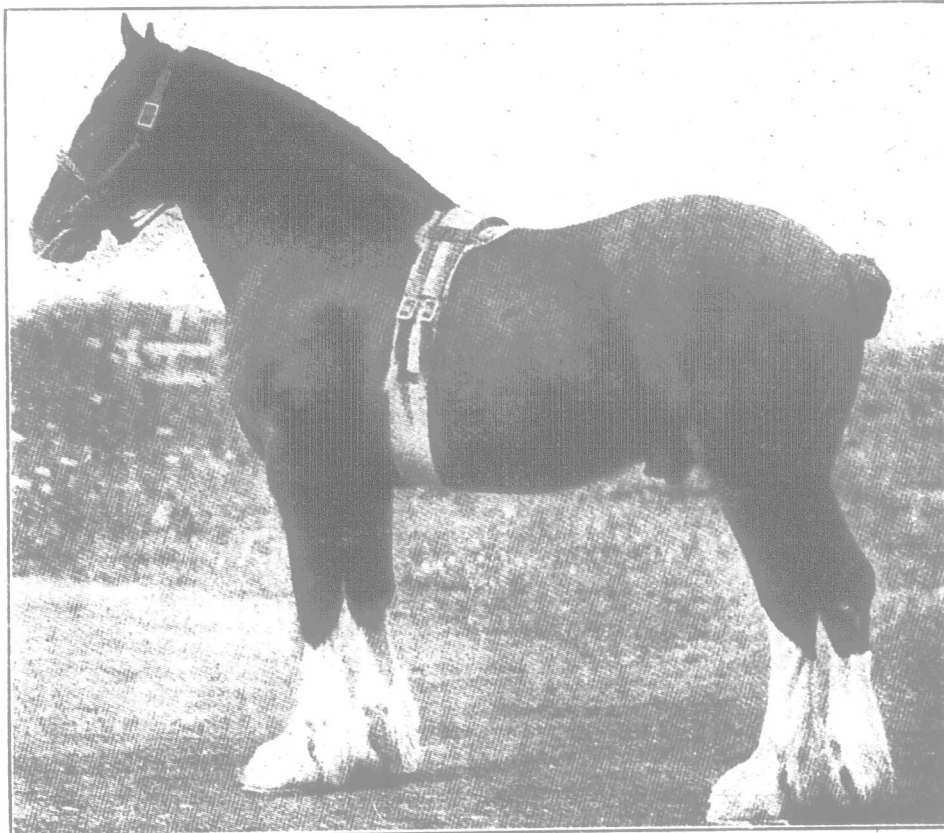
Nature's Diary.

A. B. Klugh, M.A.

In his most interesting book, "The Canadian Rockies," Dr. A. P. Coleman, the well-known geologist and mountaineer, gives the following excellent description of the building of the Rockies. "The Canadian Rocky Mountains, though not one of the highest, are one of the longest and most continuous chains in the world. Using the name in its most restricted sense, they begin a little south of the boundary in Montana, have a width of sixty miles or more between British Columbia and the plains of Alberta, and maintain this width for four or five hundred miles to the north-west, beyond which they are narrower and lower. They are still a distant range of mountains in the Yukon territory, and do not finally disappear until they reach the Arctic Ocean west of the Mackenzie River, so that the total length is not less than 1,600 miles. The building of a great chain of mountains is an enterprise not to be entered upon lightly, since it requires long and laborious preparation by methods which are strange and mysterious, but that seem to be absolutely necessary. The operation begins by forming a long, shallow trough of the sea of appropriate width, stretching for one or two thousand miles beside a fairly lofty continent or between two continents. Into this trough, rivers, waves, and tides transport and spread out thousands of cubic miles of sediments, which never fill it up, for the hollow floor of the trough slowly settles down as the sediments accumulate.

"In the case of the Rockies this vast preparatory laying down of rock began at a very remote age, many millions of years before the mountains were to be built, and went on through long ages. Thus immense quantities of gravel sand, mud and shells have been laid down and transformed into sheets of conglomerate, quartzite, slate, and limestone, the whole more than 20,000 feet in thickness; and throughout this period the trough had remained a shallow sea, which had engulfed all the thousands of cubic miles of material stolen from the land without ever being filled to the brim. It took large slices of adjoining mountain ranges to supply the materials, and the older mountains, such as the Gold Ranges, must have been greatly humbled thereby, while possibly other nameless ranges on the continent to the north-east were worn down to stumps and lost to sight completely in the process, for mountains are the raw material out of which mountains are built. After the work of the Palaeozoic times events are less certain. In most parts of the region little seems to have been accomplished in the earlier divisions of the Mesozoic, but in the latest, the Cretaceous or chalk period, the trough seems to have been filled, for the region had largely become swamps where great forests grew, supplying the thick sheets of plant tissues now turned into coal in many of the mountain valleys. The preparation was now complete, after untold millions of years and at the end of the Mesozoic the actual building began.

"The final cause of the uplifting of mountains seems to be the shrinkage of the earth's interior, by loss of heat, or in some other way, to which the solid crust has to accommodate itself. The accommodation takes place along lines of weak-



Baron's Seal.

Winner of medal for the best stallion or colt at the Highland Show at Hawick, Scotland, 1914.

ness, such as the great trough, just described, stretching from Montana to the mouth of the Mackenzie, where the rocks of the earth's crust were bent down under the enormous load of sediments into deeper, hotter levels and thus lost their old strength. They became plastic and yielded more easily than parts of the crust not so loaded, and in the collapse great segments of the crust were pushed against other segments by an irresistible thrust inland from the floor of the Pacific. The Coast Range and Selkirks, long ago pushed up and consolidated, drove before them this softened, plastic belt of former sea bottom, crumpling, crushing, folding the rocks and piling them up in confused windrows, 1,600 miles long, sixty miles wide and several miles high. We must not conceive of this piling up as the result of one overwhelming push however. The thrust was probably a few feet at a time, but renewed for many thousands of years, each time causing the earth to shudder in an earthquake, until the great work was accomplished, and a new mountain range was elevated parallel to the old ones which fenced the continent from the Pacific.

"At the completion of the work the Rocky Mountains were perhaps as lofty as the Andes or Himalayas, for the tooth of time has been devouring their summits during all the millions of years between the Eocene and the present, so their full stature must have been diminished by thousands of feet, and the file and chisel are still busy in the shaping process, which will never be complete till the ranges are worn down to hills or a plain."

THE HORSE.

Federal Assistance to Horse Breeding

The progress that has been attained in the past in Canadian horse breeding has been due largely to individual effort. To the few who have done so much for the advancement of the industry every credit is due. Through the lack, however, of concerted action and co-operative measures on a large scale amongst the breeders, the business has not progressed as rapidly as could be desired.

The want of proper organization, except in the more favored districts, has prevented the farmers generally from securing and retaining the services of good breeding sires. In a majority of sections, breeders wishing to grade up their horses are forced to use whatever stallions may, by chance, stand for service in their district. Many of these are faulty in conformation and lack in quality, while others, though of better type, remain, either through insufficient patronage or because of failure to leave colts, but a single season in each district. The fact also that there has been no systematic adherence to the use of one breed suggests another reason for the lack of progress in the breeding of high-class animals.

It must be recognized, further, that the owner of a valuable horse, after paying for maintenance, insurance, interest on investment and the expense entailed in the collection of his fees, has frequently little left from his outlay, particularly in districts where he has to compete with grade and

scrub stallions standing for service at a very low fee. As a result, really high-class stallions can be maintained only in districts where the breeding of horses has been given serious and progressive attention.

In view of these considerations, the Minister of Agriculture proposes to enter upon a policy which may serve to place the horse breeding industry in Canada in a position comparable to that which it has attained in Great Britain and other European countries. It is believed that by encouraging the organization of breeder's clubs and by enabling such clubs to procure the services of good breeding stallions under favorable financial conditions, the assistance in this direction can best be provided. The encouragement of community breeding will, naturally, of

itself be productive of useful results. The payment to community organizations of a part of the service fee will, it is expected, give a permanent stimulus to the hiring of the best stallions that may be procured and, at the same time, promote the development of a comprehensive movement in the interests of this important national industry.

Stated briefly, the scheme is as follows:—The farmers of any district, wishing to work for the betterment of Horse Breeding, by encouraging the use of sound, individually excellent pure-bred sires may form a Breeders' Club for the purpose of hiring a pure-bred stallion for the benefit of the members. These Breeders' Clubs, by organizing under and adopting the Constitution and By-laws and conforming to the various Rules and Regulations governing this grant may participate in the Federal Assistance given to such Clubs. This consists in paying practically twenty-five per cent. of the service fees on a guaranteed number of mares.

THE EXCEPTION.

With a view to encourage the breeding of Remounts, the portion paid by the Live Stock Branch to Clubs hiring suitable Thoroughbred stallions shall be forty per cent. on all mares except Thoroughbred mares.

For the booklet on federal assistance and all other information, address the Dominion Live Stock Commissioner, Ottawa, Canada.