

DIRECTORY OF SHEEP RAISERS IS PUBLISHED

Live Stock Branch has issued List of Breeders of Pure-bred Sheep and Goats in Canada

MANY BREEDERS

In an introduction to "A Directory of Breeders of Pure Bred Sheep and Goats in the Dominion of Canada," recently published as Pamphlet No. 17, by the Sheep and Goats Division of the Live Stock Branch, Department of Agriculture, Mr. H. S. Arkell, Live Stock Commissioner, Live Stock Branch, makes the following statement:—

During recent years live stock raisers have realized, as never before, the great value of the pure-bred sire. The benefits to be derived from the use of such animals are apparent to the majority and this knowledge is becoming more widely spread each year. Enquiries, as to where pure-bred rams and billies can be purchased, are constantly being received in large numbers. At the same time many who still use grade or scrub sires state in explanation of this that they do not know where to purchase pure-bred rams. Therefore, in order to assist those desirous of obtaining pure-bred rams and billies, it has been considered expedient to revise and bring up to date this Directory of Breeders of pure-bred Sheep and Goats.

In preparing this edition all the names of breeders registering their animals in the Canadian National Live Stock Records were obtained and compiled by provinces in order that any intending purchaser may know those, near his home, who are breeding the class of sheep he requires. It was found impossible to ascertain the exact number of animals by sex which each and every breeder has for sale annually. Registration numbers are always made consecutively, and it will serve as a partial guide to know that the numbers which follow the breeder's name indicate the number of registrations made by the individual during the year 1918. One number, even though it may consist of four figures, as for instance 8437, indicates a single registration, but where two such numbers are entered, as for instance, 8439 to 8449, it indicates that eleven registrations have been made.

Copies of this Directory will be forwarded free of charge to stock breeders and those directly interested in stock-raising who apply to the Sheep and Goat Division, Live Stock Branch, Ottawa.

Can Sell Cheese Freely.

The Prime Minister has received a cablegram from London, dated August 12, stating that the British Ministry of Food is quite willing Canadian cheese should be sold elsewhere if higher price can be obtained. They state that they have sufficient for their requirements without Canadian. Canadian fancy cheese such as Ingersoll and MacLaren do not come under any control.

Uses of Sycamore.

Sycamore (*Platanus occidentalis*) is not a valuable wood, being cross-grained, coarse and perishable and difficult to season. It is largely used for furniture, having a peculiar silver grain, and for handles of tools. The tree is confined to a part of the western peninsula of Ontario which forms the northern limit. It is of more commercial value in the United States, according to a bulletin on the subject of the wood-using industries of Ontario, issued by the Forestry Branch, Department of the Interior.

REPORT GIVES ACCOUNT OF MINERAL SPRINGS

Well-known Waters of Carlsbad, Ontario, described in Bulletin issued by Department of Mines.

A group of seven saline springs are situated at Carlsbad Springs, a station on the Grand Trunk line from Ottawa to Montreal, and eight miles by road from Ottawa.

The springs lie together in a small area, bounded on one side by the road and a sanitarium of visitors who come to obtain hot sulphur baths and to drink the waters, and on the other by a creek. The principal sources are enclosed in small summer houses, and rise in earthenware wells about two feet in diameter and several feet deep, the overflow running into the creek nearby.

The six waters show considerable difference in concentration and in properties, as stated in the bulletin on the subject of the "Mineral Springs of Canada," prepared by R. T. Elworthy, and issued by the Mines Branch, Department of Mines. In this respect as well as in possessing similar constituents, they bear a resemblance to the group of waters at Caledonia Springs, the bulletin continues. The Soda Spring has a primary alkalinity of 40 per cent, that is, sodium bicarbonate forms a large proportion of the mineral matter present (40 per cent), and a primary salinity of 56 per cent. (Sodium chloride 44 per cent of total solids in solution). The Sulphur water has 16 per cent primary alkalinity and 78 per cent primary salinity; the Lithia spring 7 per cent and 84 per cent respectively, while the Magic water has no primary alkalinity but 74 per cent primary salinity, and 25 per cent secondary salinity. The explanation of this difference in properties is to be found in the fact that the waters are mixtures of waters from different strata, the most concentrated and saline water rising from the greatest depth, and mixing with less concentrated and alkaline waters at other levels in varying proportions. Thus the Magic water comes from a well 240 feet deep, the Lithia water is a mixture of this water and a less concentrated solution coming from a vein 60 feet deep. The Sulphur and Soda contain still larger proportions of the less concentrated water, having sodium bicarbonate as its principal constituent. The waters rise from the Trenton limestone; the same formation from which the Caledonia Springs issue.

MORE RADIUM IN DEEP WATER.

It is of interest to note that the water from the greatest depth contains the largest amount of radium. It is to be expected that the soda would be the most temporarily radioactive, but there is no evidence of this. Gas is evolved from the springs in considerable quantity, especially from the Soda and Lithia springs.

Analysis shows the Magic spring to be a strongly mineralized sodic muriated saline water. It was one of the most concentrated waters examined. The chief constituents may be considered to be sodium chloride (73 per cent of the total mineral matter in solution), magnesium chloride (7 per cent) and calcium chloride (16 per cent).

The Carlsbad Sulphur water may be classified as a sodic, muriated, alkaline-saline, (sulphretted) water. The primary alkalinity is 16.4 per cent higher than any of the others, except the Soda water. Sodium bicarbonate may be considered to form 21 per cent of the total solids in solution, while the remainder is largely sodium chloride. The overflow from this spring runs into a storage tank and the water is used for hot sulphur baths.

The Lithia may be classified as a sodic, muriated alkaline-saline water. Lithium is present in small amount, but in no greater quantity than in the other waters. The chief salts in solution may be assumed to be sodium chloride (77 per cent), sodium bicar-

bonate (9.5 per cent), calcium and magnesium bicarbonates (each about 5 per cent).

Water from the Soda spring is the least mineralized of all the waters and probably is the alkaline water which in the other springs mingles with a more concentrated saline water, in varying proportions.

Its primary alkalinity is high—over 40 per cent—another way of stating that sodium bicarbonate is a predominant constituent (48 per cent of the solids in solution).

The water is not quite as pleasant to drink as the Sulphur or the Lithia water, on account of its slightly alkaline taste. Analysis shows it to be a sodic bicarbonated, muriated water of the alkaline-saline type.

MAPLE LEADS OTHER WOODS IN SERVICE

Maple is the most important hardwood used by Ontario's industries, over three-quarters of a billion (750,000,000) feet being used every year. This wood comes third in the list, with a consumption of eleven per cent of the total. The wood is divided into two classes by manufacturers: hard maple (*Acer saccharum*) and soft maple (*Acer rubrum* or *Acer saccharinum*).

Maple is a hard, stiff material, and its value depends chiefly on these two qualities. It is difficult to season and shrinks considerably and checks badly; it is also quite perishable, but it does not warp or twist after being properly seasoned. The soft maple is slightly tougher but softer and lighter than hard maple, and is not used in very large quantities.

Accidental forms with the grain curled and contorted, known as curly maple and bird's-eye maple, are common and are highly prized for decorative work.

Maple does not grow in any quantity north of the 49th parallel in Ontario, and is practically confined to the basin of the Great Lakes. It seldom grows in pure stands like pine or spruce, and the quantity still standing would be difficult even to estimate. The material is used by twenty-eight industries, heading the list in six of them. The greatest quantities are used for hardwood flooring, wood distillation and furniture. For these purposes and for all others where strength and stiffness are not of permanent importance, birch could be substituted in many cases, and is being substituted more and more each year, as the supply of maple decreases.

Fifteen per cent of the maple used is purchased outside of Ontario, mostly from the United States, with a small quantity from Quebec. This wood comes fourth in the list of woods brought in from outside Ontario, as stated in a bulletin issued by the Forestry Branch, Department of the Interior.

Uses of Ironwood.

Ironwood is not an important lumber as the trees seldom reach sawlog size. There are two species called ironwood in Ontario, namely, hop hornbeam (*Ostrya virginiana*) and blue beech (*Carpinus carolinia*). They are used mostly for charcoal making and wood distillation, some of the *Ostrya* (to which the name "ironwood" is more properly applied) being used locally for vehicle supplies and miscellaneous purposes. The wood is very strong, hard, heavy and tough, but difficult to season and liable to warp and check. All the ironwood used is grown in the province, according to a bulletin issued by the Forestry Branch, Department of the Interior.

War Savings Stamps not only save money but earn it.

SURVEY OF VIKING-ATHABASKA GAS FIELD

Geological Survey note on possible Future of Oil Fields

In the Summary Report of surveys made during 1917, published by the Dominion Geological Survey, is found the following on the subject of the Viking-Athabaska gas field, in the province of Alberta, which serves as introduction to an account of the work on the delineation of the possible oil-field, which was begun at that time by a party under the direction of Mr. D. B. Dowling:

The introduction of oil-burning tractors in farming operations has caused a great increase in importation of the light oils. As these imports are mostly from Wyoming, the fear of a possible embargo owing to home needs has made the subject of a home supply of oil one of national interest. The possibilities of the great plains as an oil-field has induced a renewal in prospecting, but most of this has been very conservative. The testing this year has been largely confined to the area near the Battle river and northwestward toward the Athabaska and Peace rivers. The delineation of the possible field, which depends on the underground structure, was begun this season with S. E. Slipper and Professor J. A. Allan as assistants. The area within which a possible oil-field and a probable gas field may be found can be outlined as a belt extending from Saskatchewan by way of the Viking river, northwest to the Athabaska river near Athabaska, and thence in a broad curve to the Peace river below Peace River Landing. A broadening of the belt northward from this line is evident in the Athabaska valley as the oil in the McMurray sands seems to be genetically connected with the possibilities of the whole area.

The beds underlying this triangular area slope to the southwest at a very low angle with probably many small local inflexions, and they are considerably flattened near their southwestern edge to form a terrace or level zone which in places may be considered an anticline in structure. The beds south of this flattened area dip at higher angle into the great Alberta syncline.

Along this terrace, which rises to the northwest, the sandy beds at the base of the Colorado shales have been found to contain considerable gas where they are elevated above the level of the line of salt water saturation, which is here slightly above sea-level. Heavy oil in varying amounts has been found in the lower sands in two of the Viking wells and in two wells at Peace River Landing. In the Athabaska valley on the northeastward extension of the structure plane the lower sands have also appreciable amounts of heavy oil and gas. At the outcrop these sands are represented by the McMurray tar sands. The prospecting so far done has shown the presence of natural gas in fair amount, but the production of oil is not yet well assured. Tests of the gas show the inclusion in it of gasoline vapour, and it is expected that the extraction of this vapour and the discovery of many uses for the methane gas, besides its use as fuel, will some day make this immense field a great manufacturing area.

TWENTY MILLIONS TO SOLDIER SETTLER

The number of applications for Qualification Certificates received by the Soldier Settlement Board of Canada up to the 26th of July was 25,722, of which 19,558 were approved by the Board.

Up to the 19th of July the Board had loaned \$19,578,822, for three purposes:

1. For the purchase of land. \$14,000,000
2. For the equipment of Dominion Lands. 2,300,000
3. For the discharge of mortgages on farms already owned by soldier settlers