

The Silurian Area

There is an old saying that "A lime stone country is a rich country." If this be true, the Silurian area of New Brunswick is a desirable location, for its soil is composed principally of the debris of calcareous slates. The deposits are often deep, especially in the interior and fairly free from boulders, except, in places where the slates are crossed by dykes of eruptive rocks producing in trusive boulders.

The land of this area is somewhat higher than the rest of the province and has a rolling surface—well—drained by numerous streams, the tributaries of rivers too well known to mention. It is the best farming land in the province and there are large portions yet unsettled. The International and Grand Trunk Railways have opened up part of this wilderness region and the number of applications for farms is evidence of the reputation of the soil.

The rocks of the whole area contain more or less lime and in some places enough for industrial purposes for example, that belt of territory extending from the North Branch of the Becaguimac northward through Windsor and Glassville. There was a considerable industry in that district at one time for the production of commercial lime.

The soil owes its fertility not so much to the presence of ordinary limestone as to the phosphates of lime from the deposits of shells of the life of the Silurian period, and since most soil has a very limited supply of phosphorus the richness of this land is at once apparent.

Ordinary lime is not a fertilizer in the sense of supplying plant food but it is beneficial by neutralizing the acids formed from decaying organic matter that retard plant growth by destroying the bacteria of nitrification that changes the insoluble organic nitrogen into available plant food. The question of applying lime to soil and the best form to use opens a wide discussion and ought to be taken up as a separate topic.

The soil is deprived of its lime by the action of carbonic acid formed from the carbon dioxide of the air and water which acting on lime produces the soluble acid salt so common in hard water. This process is no doubt hastened by cultivation as well as the depletion by the crops raised so it does not follow that the soil of a region rich in lime is sufficiently supplied after a lapse of time.

There is another important feature of this soil that is the large number of hardwood trees it produces as compared with other areas. The hardwood ridges have the best soil due in no small measure to the rich mould formed by the decay of leaves year after year so the original soil is well supplied with humus.

We hope to have the question taken up of the benefit and demerit of lime as applied to soil with a record of experiments.

Roumania

Roumania is the only country of the many which acknowledged allegiance to the Empire or the Caesars that bears a name "sounding of Imperial Rome." She was of the Eastern as Macaulay says Britain was of the Western Provinces. "The last that was conquered and the first that was flung away" but unlike Britain in respect of adopting the character of the conquerors. The Roman occupation of Britain had but little influence on her subsequent development while the Latin language and manners were so firmly established in the land now called Roumania that after a lapse of time equal to all the centuries of the Christian era except one she is given a place among the Romance nations although successive waves of barbarians swept over the territory and it was for hundreds of years tributary in turn to Turkish and Russian authority.

The territory north of the lower Danube was known at the dawn of European history as Dacia. In the 101 A. D. the Roman Emperor Trajan sent expeditions against the Dacians that resulted in the conquest of the country and the forming of a Roman colony. Syron in his Child Harold makes reference to a gladiatorial combat of Trajan's triumph when he says of the dying gladiator that

"He little recked the prize or life he lost
But where his rude hut on the Danube lay

There were his fair young barbarians
all at play
And there their Dacian mother he,
their sire,

Butchered to make a Roman holiday"

Evidence of the Roman conquest is

found to-day in the military road constructed by Trajan along the Danube, in the piers of a bridge across the river at Orsova and a commemorative tablet.

The Romans abandoning their frontiers to protect the vitals of the Empire left Dacia about the year 274 A. D. in the reign of Aurelian and for the next thousand years the banks of the Danube was the halting-place for successive wandering hordes: the Goths, the Huns under Attila, the Bulgars who afterwards founded Bulgaria south of the river, the Hungari that settled in Hungary, the Wallachs from whom Wallachia derived its name.

The Wallachs united with the Bulgari and governed both sides of the Danube until the Tartar invasion about the year 1250 A. D. and from the relics of this kingdom two separate principalities arose north of the river, Wallachia and Moldavia both now provinces of Roumania. These together resisted the aggression of the Turks but at length were conquered and brought to vassalage.

As Turkish power declined the Russians began invasions the first was in 1709 A. D. under Peter the Great and at times they had full control of the country but were compelled to give back Bessarabia at the close of the Crimean war and leave the provinces unmolested.

Wallachia and Moldavia united in 1859 under the name Roumania and elected Prince Cuza ruler. He was deposed in 1866 and Prince Charles of Hohenzollern succeeded. He was an uncle of Ferdinand the present king.

Roumania aided Russia in the Russo Turkish war of 1887 and at its close Russia exchanged the Turkish territory of Dobrudja with her for Bessarabia which was confirmed by the Berlin Treaty 1878 when Roumania was recognized a completely independent power.

At the close of the Balkan war 1913 Roumania kept a considerable strip of territory from Bulgaria which had much to do with their taking opposite positions in the present conflict.

The Celestial Globe--- Continued

The orbit or path of the earth's annual motion around the sun lies in the plane of the ecliptic and that part of the plane of the ecliptic bounded by the earth's orbit is known as The PLANE OF THE EARTH'S ORBIT.

Since the axis of the earth is inclined sixty-six and one half degrees to the plane of the ecliptic, it follows that the earth's axis is inclined sixty-six and one half degrees to the plane of her orbit or the axis is twentythree and one half degrees from being perpendicular to the plane of her orbit.

This inclination of the earth's axis from the vertical causes the change of seasons as the earth moves around the sun since the direction of the axis is constant. At the summer solstice the plane of the ecliptic cuts the earth from

twenty-three and one half degrees north of the equator to a corresponding distance south and the reverse at the December Solstice.

Twice each year the plane of the ecliptic cuts the earth in the plane of the equator and we have noticed that the sun is then at the equinoxes.

The equinoxes are receding slowly along the ecliptic so that the sun appears to make the circuit about fifty seconds earlier each year this shifting is known as THE PRECESSION OF THE EQUINOXES.

It is reckoned that the complete circuit of the heavens is made every twenty five thousand eight hundred years. The precession of the equinoxes is important in making calculations from charts in order to find the true places of stars.

Kiruna---and its Mountain of Iron

Kiruna is a modern industrial town situated in Swedish Lapland above the Arctic Circle, one thousand miles north of Stockholm with which it is connected by a line of railway. This town has sprung up during the present century on account of the immense deposits of iron in a nearby mountain which is known as "The Iron Mountain of Kiruna."

The magnetic ore of this region is without doubt the best ore in the world. It contains between fifty and sixty per cent iron and is sent by rail one hundred miles north to Narvik, a seaport on one of the fjords of Norway which is free from ice the whole year and from there it is shipped to the great steel plants of the world. Some of this same iron is being used today on the battlefields of the war. There is another iron hill six miles distant from which the ore is brought to Kiruna on overhead electric skids and thence to Narvik, indeed the whole country around is full of iron not likely to be exhausted for many years to come.

The town of Kiruna contains over ten thousand inhabitants. It has four large schools and a fine church, an electric tramway carries the workmen to and from the mountain. It resembles a model American town, Narvik still farther north is larger with blocks of stores fine residences and large wharves to which the commerce of the world pays tribute. Like Kiruna it has grown during the last fifteen years.

The industry of Kiruna itself is not more attractive than any other of a like nature but its location gives it a charm. Here is the most northerly railway on the globe with all the incidents of up to date travel, penetrating the vast and silent places within the Arctic Circle where for weeks the sun does not rise above the horizon and for a corresponding period of Summer, never sets—the land of the midnight sun and the mid day moon.

A description of sunrise written by a

visitor at Kiruna the middle of January is as follows. "By nine o'clock the sky began to glow faintly. Moment by moment, the glow, which was at first barely discernible, deepened and the fleecy clouds grew rosy, very, very, gradually the dawn came on. By ten o'clock the sky was blushing red but still the sun did not appear. At half past ten, he still delayed, while all along the east and far up toward the Zenith, the sky was flushed with such a light as never seen before on sea or shore. Twenty minutes to eleven and still the sun was setting and ten minutes after I could see that the beauty of the sunrise was a trifle dimmed and a little to the north the glorious pageant that attends the setting sun was setting in. At eleven o'clock I was sure the sun was setting and not rising, the skies were all aflame the sunset mingled with the dawn."



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Clouds

(Continued)

Cumulus clouds consist of dense convex hemispheres or conical heaps of small roundish clouds piled on each other. The heaps enlarge upward from a horizontal base and have rounded or

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rocky tops. They unite sometimes to form white topped mountains of clouds.

These clouds are formed by the condensing of water vapor in local ascending currents of air and are from four to six thousand feet in height. They often begin to form after sunrise as a few scattered specks in a clear sky which enlarge and unite; if they continue until evening and grow darker rain will follow but usually these clouds alone pre-empt fair weather. Dense silvery white cumuli indicate thunder. They are distinguished by their clear cut outlines against the sky.

Stratus or night cloud is the lowest of clouds and is extended horizontal layers of various thickness. It is common at night in summer and autumn forming on clear calm evenings from cumulus settling down or the cooling of moist air over damp ground it may accumulate in dark dense layers and form nimbus.

Nimbus or storm cloud is the most important combination of the main forms. It is a dense continuous horizontal black or grey sheet with fringed edges having rolling masses of cumulus cloud above and topped with cirrus rain or snow is ever falling from nimbus.

Thunder storms are always nimbus and it is obvious that the cloud is of great thickness so has many strata of different temperature which causes the hail so often in a summer shower. The drops of rain passing through a cold stratum freeze to ice and accumulate in size by passing through the rain cloud.

Council of Women

Want Conscription

London, Ont., Dec. 2.—The local branch of the National Council of Women, at a big meeting today, decided to urge the Government to immediately pass conscription measures. They will also work with the Ministers of the city to ban prize fights and dance halls, claiming many young men who should be in khaki are there continually.

General Cadorna Ready to Strike Blow at Austrians

Brieg, Switzerland, (via Paris), Dec. 2.—The Italian frontier has been closed since Wednesday. Letters, newspapers and parcels have all been held up by the censor at Domodossola, Italy, and the courier service between Loosno, Switzerland, and Domodossola has been suspended.