

for a great many years, but their utilization for the manufacture of manures is of very recent date. Since then the quantity of superphosphate manufactured has been greatly increased, mainly owing to the more recent discovery of cheap phosphates in Germany (Lahu), France, (Lot, Ardennes, Boulogne, Somme), Spain, (Estramadura, Jumilla), Norway, (Apetite), Algeria, (Toumai), South Carolina, Canada (Apetite), Russia (Caprolitis), and Belgium.

The Lahu Phosphate, Germany, was discovered in 1864, it contains a good deal of oxide of iron and alumina, consequently is not of high grade.

Belgian Phosphate, a large deposit was found a few years ago near Mons. The higher qualities have been worked out, so there are only the lower grades left, much of it is in pockets.

French Phosphates, a large share of them contain a high percentage of oxides of iron and alumina, but a recently discovered deposit at Somme, which seems to be a continuation of the Belgian deposits, has been found to be very pure, yielding from 50 to 80 per cent. of phosphate of lime. The higher grades contain a very small percentage of the oxides of iron and alumina. The lower grades are used at home and the higher exported.

Spanish Phosphates, at Estramadura and Jumilla are of low quality and have not been exported in large quantities yet, though used extensively at home.

The shipment of Norwegian Apatite and Russian Caprolite has almost ceased on account of an export duty.

England herself supplies a large amount of Caprolite, but this supply is on the decline, its place being taken by South Carolina phosphate.

Phosphate of lime has been found at Toumai, Algeria, but only small shipments have been made.

South Carolina phosphates, were discovered some 20 years ago, since then some 4,000,000 tons have been shipped. This phosphate is of good quality, very free from oxides of iron and alumina and the supply good for another one hundred years being the most abundant deposit found. This phosphate has driven out of the English market nearly all the European phosphates sent to that country on account of its high quality, and the demand for it is on the increase.

England is the greatest user of phosphates, then comes Germany and France. The use of them is extending rapidly in the United States and is stiffening the price of the Carolina phosphate so that England may soon have to depend largely upon the European deposits for her supply.

Canadian phosphate has only been worked for about ten years. The annual output amounts to about 30,000 tons. The Buckingham (Quebec) mines yield the richest phosphate. Much of it is shipped to England, but the use of it is extending here also; this is as it should be and the mines should be conserved as we will soon want it all for our own use.

#### BASIS SLAG.

This is a new fertilizer that has found its way into the field of artificial manures. It is obtained from the slag of the smelting furnaces. It contains a varying quality of phosphoric acid, according as it is found in the iron ore and is combined with lime in the tricalcic form. The German slag seems to be the richest in phosphates, containing as high as 25 per cent. of phosphoric acid while the English slag only contains from 8 to 12 per cent. of the acid.

From this hurried review of the phosphate supplies at present known, the conclusion may easily be drawn that there is a large quantity of them stored throughout the world.

Much of it may not be of as good quality as is desired, this may be overcome to some extent as their value becomes better known. The French and Spanish phosphates contain rather high percentages of the oxides of alumina and iron, yet in their respective countries they are giving good results, in time it may be with many of those now considered inferior.

England is more concerned about the supply of phosphates than any other country, as she has to import them all. So far Canada has not concerned herself at all in regard to the supply of phosphates. In the older sections of our Dominion, more intensified methods of farming are coming in vogue, along with this a demand for fertilizers of which phosphate manures come in for their share. Thankful should we be that nature has stored in our own land a liberal supply of the raw material which will soon be needed to keep up the fertility of the land.