

the ore body ends. The ore body in fact seems to be merely a portion of the igneous mass in which the ore, which is one constituent of the normal rock, is concentrated sufficiently to form workable deposits.

TITANIC IRON ORES.

One of the most celebrated deposits of this class is that occurring at Taberg in Smaland, in Sweden, and which has long been recognized as merely a local variety of a great intrusive mass of rock belonging to the gabbro family, and known in Sweden as Olivine Hyperite. This rock, which is poor in iron ore, can be observed step by step to pass over into the ore body, which has been extensively worked, and consists of a mixture of titaniferous iron ore and olivine, the ore forming about 50 per cent. of the rock.

A sketch of this occurrence taken from Prof. Vogt's paper and showing the concentration of the iron ore in the central portion of the mass is given in Figure 1.

Another large deposit of iron ore at Cumberland, Rhode Island, occurs in a precisely similar manner as part of a gabbro mass and was for years extensively worked, but had to be finally abandoned on account of the large amount of titanitic acid which it contained. In Brazil, Derby has also described the occurrence of large bodies of iron ore which gradually pass over into a mass of pyroxenite, of which they form part. Similar deposits of titaniferous iron ore of large extent have recently been recognized by Winchell in Minnesota, and by Kemp in the Adirondacks. In the latter case, where the body of iron ore is about 20 feet in thickness, the great mass of gabbro of which it forms a part is closely related in petrographical character, and probably in age, to the great areas of gabbro or anorthosite which in Canada occur in a number of places in our Laurentian country, occupying in some places hundreds, and in other places thousands of square miles.

These Canadian rocks also contain in many places large deposits of iron ore which are invariably rich in titanitic acid, a fact which has made itself very patent in the failure which has followed all attempts to work them. Of these one of the best known is the great body of titanitic iron ore near Baie St. Paul on the Lower St. Lawrence, where, in a great mass of gabbro or anorthosite, solid bodies of the iron ore 90 feet in thickness occur, which have been traced for a mile or more. An attempt to work these, made years ago, resulted in the loss of about