

Besides the four establishments here described, which are in full operation, there are a good many deposits connected with fahlbands, which are either abandoned, or have not as yet been worked. Of these the following may be mentioned—the cobalt mines of Svartefield, very similar in character to those of Skuterud, the copper works in Sognedalen, and on Kobberbergselven. There are also numerous localities of pyrites containing small quantities of nickel or cobalt, or both. The magnetic pyrites from Høiassen contains three per cent of nickel and six tenths per cent of cobalt; that from Rustand, six tenths per cent of nickel and one per cent of cobalt; that from Olafsbye one per cent of cobalt, and the iron pyrites from Satersberg one per cent of cobalt.

There are however other deposits of pyrites in this formation, whose connection with fahlbands is more uncertain. Such localities for instance are those of Meinkier Grube, containing copper pyrites, nickeliferous magnetic pyrites and cobaltiferous iron pyrites; and Steenstrup's Kiesgrube, on Lyngdalselven, containing the same minerals. Dahl\* looks upon these as contact deposits, and connects them with the intrusion of so-called gabbro.

Closely allied in nature to the fahlbands above described are certain other zones of impregnated rock, occurring in this formation. The impregnating material, however, is magnetic iron ore, the bands containing which scarcely possess such a length in the direction of the strike, as the fahlbands. Moreover the magnetic iron ore, besides occurring in this finely divided state, forms considerable beds in the impregnated zones referred to. It is from these deposits that the iron works of Sweden and Norway are supplied with the material from which their celebrated iron is prepared. These deposits are of frequent occurrence in the south of Norway, especially in the neighbourhood of Arendal, where there exist eighteen different beds of ore, which well repay the cost of working them. They are situated in a narrow straight zone, which runs parallel with the coast for a distance of six miles. The prevailing rock is gneiss, which graduates into mica and hornblende slate. The ore is magnetic oxyd, usually without any admixture of ferric oxide. The minerals most frequently accompanying it are augite, hornblende, garnet, epidote, calcspar, and the three essential constituents of the gneiss, especially mica. Besides these, about thirty other minerals have been mentioned as having been found in the deposits, but these are

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\* Om Kongsberg's Erts District; Christiana, 1860.