This fact of the little fall of the Barometer until the centre was close upon the ships may be connected with the limited extent of the Cyclone itself. I have elsewhere remarked* that for a distance of 100 to 150 miles from the centre, there seems to be no exact rates of fall by which we can estimate the distance of the centre; and in this the Cyclones appear to assimilate to the smaller tornado-Cyclones, tornados and whirlwinds, which, we have reason to believe, do not affect the Barometer to any remarkable extent on their approach. The vigilant seaman and the philosopher will see in this a strong argument for a careful investigation and registration of the various atmospheric signs upon which I have so much insisted, until we can obtain a complete code of these also, and furnish all observant seamen with a BAROMETER OF SIGNS.

On a Series of CALDERITE *Rocks.*—*By* HENRY PIDDINGTON, *Curator Museum Economic Geology.*

My analysis of Calderite (in Vol. XIX. p. 145, of the Journal) was of course performed from the best and most homogeneous (i. e. approaching to perfectly mixed) specimen which could be obtained. It will nevertheless be remarked in that paper, which describes the specimen analysed as the type of the rock, that, with the magnifier the siliceous mixture which constitutes it a rock is distinctly seen in thin splinters when held against the light. I have been able, from the late Mr. Williams' abundant supply of these so called Iron ores, the whole of which are Calderite, to obtain a very curious and instructive series of specimens, illustrating distinctly the formation of the Calderite by the mixture of the siliceous with the Iron and Manganese mineral, like the large and small grained granites, in the first of which the silex, felspar and mica seem rather to be agglomerated in masses than to form a true compound rock, and in the latter the component parts are only seen by a magnifier. I have therefore selected for our Museum, and for the guidance of geologists and mineralogists a series of fourteen of these specimens. I think it right to give a brief description of each, so as to enable them to recognise the rock in its various appearances.

* Horn Book.

No. 1.—Is a common transparent quartz rock, in which on the one side the Iron and Manganese mineral is seen only in small and minute rounded specks like Melanite garnets, as if a little of it in powder had been melted up with the quartz.* Towards the other side of the specimen it is seen to increase in quantity, forming small nests and short veins; and on the extreme part of it the nests become large, and there are also seen mammillated coatings of the Iron and Manganese upon the quartz. When the mineral is fractured at these nests the Iron and Manganese appears as a brilliant black granular mass.

No. 2.—In this the quartz is no longer massive, but, like the Manganese and Iron, is in coarse grains as if a sort of coarse conglomerate of the minerals had been formed; on one side this specimen passes into No. 7.

No. 3.—The coarse grains of No. 2, are here smaller; the weathered surface resembles a granular brown iron ore.

No. 4.—The granulation is here much finer, and some specimens, if superficially looked at, especially on the weathered surfaces, might pass for a coarse brown and red sandstone. On the fracture it has the appearance of a coarse brownish-white sandstone.

No. 5.—The sandstone appearance assumes in this variety a resinous glance on the transverse fracture; and on the horizontal one it becomes laminar and of a reddish-grey, resinous, appearance. The weathered surface glisters like a coarse-grained Diallage or Schiller spar.

No. 6.—In this specimen the Iron and Manganese appears like a coarse granular black Pitchstone, intermixed with dark brown grains of quartz. The weathered surface is porous and of a dull brick-red colour.

No. 7.—The granular structure of No. 6 is here much closer and finer. The weathered surface is of a dirty reddish-brown colour.

No. 8.—The constituents of the mineral are in this specimen so mixed, that they look like a very fine-grained pitchstone-porphyry.

* It is far more fusible than the quartz, and this accounts for the rounded form of the grains. Yet we should have expected, unless we suppose the quartz to have been an aqueous deposit, that mere igneous fusion would have mixed the materials more completely. Some of the recent discoveries of the solubility of minerals in steam, at merely atmospheric pressures, seem to point to a solution of the singular enigmas which quartz and other rocks so often present when we consider them as produced by mere igneous fusion.

The weathered surface resembles that of some kinds of hornblende rock.

No. 9.—A fine-grained resinous rock; like powdered black rosin agglomerated in a mass.

No. 10.—Is the specimen which I have described as the type of the mineral in my former paper upon it; which for the sake of connexion I copy here.

"This rock can be in no way so well described as by saying, at once, that while on the weathered surfaces it resembles a common massive ore of iron, its appearance on the fresh fracture is exactly that of black rosin. When examined by the magnifier it is seen to have a golden resinous (which is yellow quartz) coating, in thin laminæ, especially on some of the fractures. On others it has small specks which are seen by the magnifier to be minute cavities full of a yellow powder.

"The fracture is difficult to describe, being in some places hackly, in others tending to small conchoidal, and in some instances breaking on a large scale into an obliquely rhomboidal cavity, as if the rock would cleave naturally into oblique rhomboidal prisms, or contained crystals of that shape. The most perfect cavity I could measure, for I could not obtain a good solid angle, was one of 124°, giving therefore 56° for the acute angle of the rhomboidal crystal.

"The splinters are often nearly laminar and sometimes highly translucent, like dark brown rosin. When held to the light these are seen to contain, here and there, fragments of bright white quartz.

"The streak is ash-coloured, and obtained only with the file, or on a salient edge by the knife. It is brittle, and easily fractured with a moderate blow. The powder is fawn-coloured. When breathed upon it gives a metallic odour. The latter portions are tough and difficult to pulverise, requiring repeated sifting and hard pounding.

"Its hardness is 7.8. The specific gravity 3.65.

"The solid mineral does not alter by digestion in acids, and even in nitro-hydrochloric acid; hydrochloric acid dissolves a little iron, but in very small proportion (probably from dust) even from extremely thin pieces."

No. 11.—A lighter coloured variety of No. 10; having on some parts, and in a good light, the appearance of impure yellow rosin.

No. 12.—Has the appearance of a resinous pitchstone: That is to say, it is resinous on some fractures and on others almost a pitchstone in appearance.

No. 13.—This last is almost a black and brown, narrow-banded, Jasper in external appearance, but on the fresh transverse fracture it shews a very distinct granular resinous structure and aspect. The tendency of fracture (or of cleavage) is however distinctly in the planes of the laminæ, and when even a minute splinter is held to a strong light the arrangement of the imbedding of the black mineral in the yellow brown quartz is distinctly seen to be horizontal and parallel like the bands on the larger surfaces.

The mineral geologist will, I trust, from these descriptions, be enabled to identify this curious rock wherever he may meet with it in any of its varieties; and the importance of mineralogy to geology is now-a-days, too well recognised for me to doubt that, to all lovers of scientific accuracy this paper will be acceptable. We are moreover, in India especially, bound when we bring forward any novelty to shew as clearly, and in as full detail as we can, the grounds on which we do so, as we thus advance the cause of science when we are right, or obtain the correction we need if wrong.