

tioned. In the Archean, rocks of this and more pronounced micaceous character to true mica schists are traceable into clay slates and siliceous elastic rocks with unobscured original characters. Other mica schists are directly traceable into conglomerates and agglomerates, and appear to be but excessively squeezed facies of these rocks where the conglomeratic or agglomeratic characters have been obliterated and much mica developed. And in some mica schists, where no direct transition can be established, traces of conglomeratic structure can occasionally be detected. The most distinctly crystalline of these mica schists are entirely comparable with the mica schists of the Bergen peninsula in Norway, where Reusch a few years ago found beautiful Silurian fossils,* some of which the writer has himself more recently collected under the guidance of that distinguished geologist.

Many mica schists of the Ontarian system are, further, entirely similar to the "hornfels" or crystalline schists of the contact zones of various post-Archean granitic eruptions, which are undoubtedly the altered facies of normal sediments. Some of the feldspathic mica schists, of a fine-grained, thinly laminated aspect, commonly called gneisses, are in parts of the Ontarian system traceable into quartz-porphyrries of the same normal character as those which constitute the volcanic portions of many Paleozoic series. The researches of Lehmann † have established such transformations as facts, the explanation of which, as demonstrated by that eminent investigator and now generally accepted, is found in the deformation of the rock by pressure and in the chemical activity induced thereby. For the most part, however, the feldspathic mica schists, such as are abundant in the Couthiching group, are, like the non-feldspathic mica schists associated with them, very probably of metamorphic derivation from normal sediments.

In portions of these formations the writer has recently detected vestiges of conglomeratic structure. In places they pass into rocks that are little more than slightly micaceous quartzites, and their distinct bedding and regular stratigraphy are those of sedimentary rocks as contrasted with the lenticular arrangements which obtain in volcanic accumulations. Their contact phenomena against the granites and granite-gneisses of the Laurentian are identical, so far as studied, with intrusive granites, particularly in the development of andalusite crystals. They correspond closely in lithological character and in the nature of their relations to the Laurentian with the descriptions given us by Barrois ‡ of the feldspathic mica schists of Cambrian age, which in Brittany are pierced and altered by great eruptions of granite (the true granite, or granite with two micas, of the Germans), which rock forms very extensive portions of the Laurentian northwest of Lake Superior.

* Die Fossilien Führenden Kryst. Schiefer von Bergen. Leipsic, 1883.

† Entstehung der Altkryst. Schiefergest. Bonn, 1884.

‡ Comptes Rendus des Excursions de la Soc. Geol. de France dans le Finistère. Bull., 3me Série, t. XIV, 1886, p. 832, et seq.