

of different generations of Laurentian rocks. This possibility presents itself as soon as we familiarize ourselves with the sub-crustal igneous and later formations of the Laurentian.

*Different Generations of Laurentian Rocks.*—To the writer this conception of different generations has never been more than a possibility till the present year. In his report on the Rainy lake region, two broadly distinct members of the Laurentian were distinguished, lithologically and on account of their systematic relative distribution, as the "peripheral zone" and "inner nucleus" of the Stanjikoming area, the former being composed chiefly of hornblende-granite and syenite-gneiss, and the latter of very quartzose biotite-gneiss. The relationship in time between these two rock masses remained indeterminate. During the past summer, however, he has been able to establish, in the Hunter's island region, chronologically distinct generations of Laurentian gneisses. In that region there are two broadly distinct members of the Laurentian, analogous petrographically and in relative distribution to those of the Stanjikoming area. Below the Keewatin rocks there is a great mass of hornblende-granite-gneiss, which presents an irruptive or intrusive contact against them. Towards the central part of Hunter's island this hornblende-granite-gneiss is pierced by an enormous irruption of biotite-granite, which is sometimes very distinctly gneissic and sometimes quite undifferentiated in structure. In texture it varies from fine-grained, almost micro-granitic, to a moderately coarse granite. This biotite-granite-gneiss traverses the hornblende-granite-gneiss in innumerable clearly defined dikes cutting it in all directions, and holds innumerable included blocks of the same rock. It comes up from beneath the hornblende-granite-gneiss, and is unquestionably of later age.

Thus we have in this area at least two distinct generations of Laurentian rocks, both the result of the crystallization of a sub-crustal magma. At the time of the second generation the rocks of the first generation constituted the lower portion of the crust.

It is upon the recognition of facts of this order that an intelligible and profitable classification of the Laurentian rock masses and the geological events which they represent must be established.

*Other Conditions considered.*—The relationship which has been found to obtain between the upper and lower Archean leads, as has been said, to a conception which is at once grand and simple. So long as we confine ourselves to regions like that northwest of Lake Superior, where no great complications have been introduced by post-Archean crust-crumpling agencies, it affords a full explanation of all the phenomena of Archean geology.

There is a possible simpler case which would still present the essential conditions of the relationship in question; *i. e.*, the case in which the sub-