

evidence to connect them with plutonic intrusions, not with superficial consolidation, and to show that many of their essential details of structure may be paralleled among much later crystalline schists produced from the metamorphism of Palæozoic sediments and igneous rocks.

(2) That the lowest gneisses of Canada and other regions are metamorphosed sedimentary rocks was believed by probably most geologists until only a few years ago. But the increased attention which has been given to the study of the subject since Prof. Lehmann's great work on the Saxon gneisses appeared in 1884, has led to so complete a revolution of opinion that this belief, at least in its original form, is now almost wholly abandoned. Those who still hold it in a modified shape recognize that the original sediments must have differed considerably from those of any recognizably sedimentary formation, and were probably deposited under peculiar conditions. They admit that these rocks have undergone extreme metamorphism, and that the alteration of them has been carried so far as to reduce them in some places to an amorphous crystalline condition which cannot be distinguished from that of normal eruptive material. It has been maintained, indeed, that the Laurentian gneisses of Canada have been produced by the actual fusion of the older sedimentary pre-Cambrian formations and the absorption of these rocks into the general magma of eruptive material which now appears as gneiss.<sup>5</sup> The intrusive character of some of the gneiss, which might be regarded as proof of its really igneous origin, is accounted for by what is called an "aquo-igneous fusion" of some parts of the sedimentary rocks and their intrusion into less completely metamorphosed portions of the series.

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<sup>5</sup> A. C. Lawson, Annual Report Canadian Geol. Surv. 1887.