

islands (Lewisian, Dimetian, Arvonian and Pebidian); and in America attempts of this kind do not appear to have been attended by better results, although several efforts have been made to divide these rocks into ten or twelve systems only for Canada, Lake Superior and New England. The following names have been proposed and used to some extent, although no one has ever been able to see and give, with any degree of accuracy, the exact limits of each system, nor to be perfectly satisfied even as to their superpositions and successions: Laurentian, Huronian, Terranovan, Montalban, Norian or Labradorian, Taconian or Itacolumitic, Animiké (Animikie) series, Coatchiching, Ogishke, Vermillion series, Keewatin (Kewatin) and Keweenawan.<sup>1</sup> Not one of these systems, except the Keweenawan, contains fossils; notwithstanding the attempt made to record a lithological specimen as the remains of immense living sponges, called *Eozoon Canadense*.

Until now the geological survey of Canada, which seems to be the leader in classifying the primitive rocks into numerous systems, has failed to recognize and name with any degree of accuracy the different rocks. For instance, the chemist and mineralogist, Mr. T. Sterry Hunt, is responsible for such extraordinary confusion as to "all the *quartzites* of Montmorency Fall near Quebec, *gneiss*! The *erratic quartzites* and *quartz* of No. 1 on the road between Pointe Lévis and Notre Dame are named *limestone conglomerate*! and the *sandstone* lenticular mass marked 4" on the same "Plan of Pointe Lévis," published in 1862 by the Canadian survey, is recorded as a *magnesian limestone*!

With such lithological errors—which can be easily controlled by every geologist who visits Quebec—it is superfluous to discuss classifications. The lithology of Canada needs, not only a careful revision, but a complete recasting, before attempting anything in the way of nomenclature.

What is needed in America are minute lithological studies made by able observers conversant with Comparative Lithology, not only among American rocks, but also with European crystalline rocks; and also good and detailed surveys in the field.

The introduction of the name *Archæan* requires some explanation.

<sup>1</sup>The copper-bearing melaphyrs and conglomerates, constituting the main part of the Keweenawan, are not primitive rocks; and the whole system, as defined by Mr. R. D. Irving, is much younger. The melaphyrs contain *Orthoceras*, like the dinorthis of Bohemia.