

Having these considerations in mind, it seems desirable, in the cause of the concise expression of our knowledge and of the furtherance of clear and simple conceptions of Archean geology, that the taxonomic value of this upper division of the Archean should be recognized by the adoption of an appropriate designation of systemic import. There is probably no other equal area of the earth's surface where the formations of this system are better or more extensively exposed than in the Canadian province of Ontario. The writer therefore begs to suggest to his fellow-workers in American Archean geology that this system be known as the *Ontarian System*.

*Petrographical Description.*—The formations of different groups of the Ontarian system present for the most part a sharp contrast in lithological character and mode of occurrence to those of the Laurentian system. The latter, as has been indicated, consists essentially of an assemblage of more or less foliated or quite massive varieties of rocks which are to-day recognized by petrographers as plutonic igneous rocks—*e. g.*, granites, syenites, diorites, gabbros, etc. The former is composed of rocks which are with varying degrees of certainty recognized as normal sedimentary and volcanic formations disguised by metamorphism of different kinds. Among the more easily recognizable formations may be mentioned conglomerates, grits, quartzites, graywackes, clay slates and limestones; various pyroclastic rocks, such as ashes, tuffs and agglomerates; and massive volcanic rocks, both acid and basic, notably quartz-porphyrries and diabases; all of which rocks, far from being peculiar to the Archean, are normal constituents of Paleozoic and later geological systems. In all of these, schistosity may be a feature of the rock.

With these normal or only slightly altered rocks occur also more highly altered facies of the same formations, whose derivation is known, and others still more differentiated from unaltered types, whose historical derivation from normal rocks cannot be traced with certainty, but only inferred by analogy as highly probable. Of those rocks whose original character is more or less obscured, the most prominent are certain phyllites, mica schists and feldspathic mica schists or gneisses, so called; hornblende schists and amphibolites, serpentines, soft, dark, glossy, green schists, and various light-colored acid porphyroid schists, nacreous sericitic schists and felsitic schists with quartz grains. These are all rocks upon which there has, in recent years, been concentrated a great amount of research both in the field and in the laboratory, and many facts have been established concerning them in various parts of the world which enable us to formulate definite and well-grounded conceptions as to their origin and development, where formerly only more or less indefinite speculation was possible.

The rocks known as phyllites or phyllitic schists are very common in fossiliferous series in disturbed regions, and their clastic origin is rarely ques-