

## SUBDIVISIONS OF THE ARCHÆAN TERRANES, AND THE ROCKS.

*Subdivisions.* — Two subdivisions have general acceptance: —

I. THE LAURENTIAN. — Logan, *Rep. Geol. Canada*, for 1852–53; named from the Laurentide Mountains.

II. THE HURONIAN ERA. — Huronian of Logan and Murray, *Rep. Geol. Can.*, for 1853–4–5, in the special report for 1854; *Ésquisse du Géol. du Can.*, 1855. “Huron Cupriferous Formation” of the north shore of Lake Huron, *Rep. Geol. Can.*, for 1847–8. — Part of Agnotozoic, Irving, 1887, the Keweenaw group of the Agnotozoic being referred beyond to the Paleozoic. Part of Algonkian, Walcott, 1889; a name proposed as a substitute for Agnotozoic, and so accepted by geologists.

The subdivisions were based, according to Logan, on relations of unconformity in bedding between the Huronian and Laurentian terranes. The Huronian areas recognized were situated along the north shore of Lake Huron, and at points on the north and east shores of Lake Superior. Archæan rocks vary from massive crystalline kinds, like granite, syenite, dioryte, and massive gneisses, to the thinnest of schists; and include, also, limestone, quartzite, and some uncrystalline sandstone and other fragmental beds, besides large beds of iron ore. The Laurentian division in the vicinity of the lakes was observed to comprise the more massive kinds; and the Huronian, the thinner schists, as mica schist, chlorite schist, with quartzite. With this distinction in view, the Huronian was made to include also an area south of Lake Superior extending from Marquette, Mich., westward, containing the large beds of iron ore of that region; and this conclusion has since been sustained by evidence proving their unconformability to the Archæan terranes beneath. But most other references of areas to the Huronian that have been made are reasonably questioned, because it is now known, as stated on page 458, that the distinction based on kinds of rocks is not a safe criterion of geological age. Among metamorphic Paleozoic rocks, massive, thick-bedded and thin-bedded schists are associated in the same formation; and so it is, beyond doubt, in the Huronian, and even in the Laurentian. Still, the thinner schists of the Archæan are to a much larger extent Huronian than Laurentian; and all the uncrystalline Archæan strata are Huronian.

The beds of iron ore have so great thickness in some regions, that the Archæan has been called the Iron Age in the earth's history.

The localities of Huronian described by Logan with special detail in the Canadian Geological Report of 1863 are as follows: (1) to the west of the Mississaga River, north of Lake Huron; (2) to the eastward, in the vicinity of White Fish and Sturgeon rivers; (3) near Lake Temiscaming, 150 miles northeast of the last locality; and a few miles from Michipicoten Island, north of Lake Superior. The iron-bearing rocks south of Lake Superior about Marquette and to the westward are referred to the same period on the colored map in the octavo Atlas accompanying the Report, published in 1863, after investigations by Murray.