Moonlight.” The standard editions of his works are *The Writings of Henry David Thoreau,* Riverside edition (II vols., Boston, 1894- 1895), and Manuscript edition (12 vols., ibid., 1907).

See also W. E. Channing, *Thoreau: The Poet Naturalist* (Boston, 1873); R. W. Emerson, an introductory note to *Excursions* (Boston, 1863); F. B. Sanborn, *Henry David Thoreau* (Boston, 1882), in the “ American Men of Letters Series ” ; H. S. Salt, *Life of Henry David Thoreau* (London, 1890); *Some Unpublished Letters of H. D. and Sophia E. Thoreau* (Jamaica, New York, 1890) ; J. Russell Lowell, *My Study Windows:* R. L. Stevenson, *Familiar Studies in Men and Books:* and F. H. Allen, *Bibliography of H. D. Thoreau* (Boston, 1908). (W. SH.)

**THORFINN KARLSEFNI, or** Karlsefne *(fl.* 1002-1007), Scandinavian explorer, leader of the chief medieval expedition for American colonization. Thorfinn belonged to a leading Ice­landic family and had great success in trading voyages. In 1002 he came to Greenland, married Gudrid, widow of Red Eric’s son Thorstein, and put himself at the head of a great expedition now undertaken from Ericsfiord for the further exploration and settlement of the western Vinland (south Nova Scotia?) lately discovered by Leif Ericsson *(q.v.).* Three vessels took part in the venture, with 160 men and some women, including Gudrid, and Freydis, a natural daughter of Red Eric. They first sailed north-west to the Vesterbygd or “ Western Settlement ” of Greenland, thence to Bear Island, and thence away to the south till they reached a country they named *Helluland* (some part of Labrador?) from its great flat slabs of stone (*hellur).* Two days’ sail farther southward brought them to a thickly-wooded land they called *Markland (i.e.* Wood­land, our Newfoundland?). Two days after this they sighted land to the right hand, and came to a cape, where they found the keel of a ship—perhaps a relic of some earlier, possibly Scandi­navian explorer—and which they called therefore *Kialames* (Keelness; Cape Breton, or some adjacent point?); the long bleak sandy shores of this coast they called the *Wonder strands* (on the east coast of Cape Breton Island?). After passing the *Wonderstrands* and reaching a coast indented with bays, Thorfinn put two fleet Gael runners ashore, with orders to explore southwards (see Leif Ericsson): they returned with grapes and wild wheat, proofs that the Northmen were not far from Vinland. The fleet now stood in to a bay called by the explorers *Streamfiord* or Firth of Currents, and wintered there (1003-1004), suffering some privations, and apparently getting no more news of the fruitful country desired. Thorfinn’s son Snorri was born this first autumn in the new world. Next spring nine of the party, headed by the chief malcontent Thorhall, Red Eric’s huntsman, sailed off northward, intending to come to Vinland by rounding Keelness and thence working round west (and south). Adverse weather drove them to Ireland, where they were enslaved. Meanwhile Thorfinn, with the rest of the venturers, sailed south “ for a long time,” till they reached a spot they called *Hop,* at the mouth of a river which flows from a lake into the sea (several estuaries near the southern extremity of Nova Scotia would do equally well here). Here they found the “ self-sown ” wheatfields and vines of Leif’s Vinland, and here accordingly they settled and built their huts above the lake (1004-1005). After a fortnight natives, swarthy and ill-looking, with ugly hair, great eyes and broad cheeks (Beothuk or Micmac Indians?) appeared with many skin canoes; in the spring follow­ing these *Skraelings* came back and bartered with their visitors. Terrified by a bull belonging to the latter they fled, and after three weeks returned to fight. They were beaten off, but the Northmen narrowly escaped destruction, and two of their number (one a leading settler) were slain. The colony at Hop was there­fore abandoned and the whole force returned to Streamfiord. Thence Thorfinn revisited Hop, staying two months; and also made a voyage northward in search of Thorhall, rounding Keelness and sailing westward (along the north coast of Cape Breton Island?), and apparently southward also, till they came to the mouth of a river flowing from east to west. Here Thorvald Ericsson was killed by a (Skraeling?) arrow, and the expedition came back to Streamfiord where they passed the next winter (1005-1006). Internal dissensions now broke out, mainly about the women of the colony, and in the next summer (1006) the entire project of Vinland settlement was abandoned and the fleet sailed to Markland. Two Skraeling children were captured here and the expedition divided, Thorfinn making Greenland and Ericsfiord in safety with his own vessel, while the other was lost in the Irish Sea, only half the crew escaping to Ireland in the ship’s boat.

It may be noticed that the *Flatey Book* narrative gives a somewhat different but much slighter account of Thorfinn’s expedition, making both Thorvald Ericsson and Freydis under­take separate Vinland ventures—one before, the other after, Karlsefni’s enterprise—Thorvald being killed on his (as in *Red Eric Saga,* but with divergent details), and Freydis on her committing atrocities upon her comrades, the Icelanders Helgi and Finnbogi, which are unnoticed in *Red Eric.* The latter, however, in its mention of the domestic broils which arose over the women of the colony in its third winter, points to something which may have been the germ of the highly elaborated Freydis story in *Flatey.*

On *Flatey Book, Red Eric Saga* and the whole bibliography for the Vinland voyages, including that of Thorfinn, see Leif Ericsson and Vinland. The six Vinland voyages of *Ftatey,* we may repeat, *Red Eric* reduces to three, wholly omitting the alleged voyage of Biarni Heriulfsson, and grouping those of Thorvald Ericsson and Freydis with Thorfinn Karlsefni’s in one great colonizing venture.

(C. R. B.)

**THORIANITE,** a rare mineral, discovered by W. D. Holland, and found in the gem-gravels of Ceylon, where it occurs as small, heavy, black, cubic crystals, usually much water-worn. It was so named by W. R. Dunstan, on account of its high percent­age of thorium (about 70% ThO2)∙, it also contains the oxides of uranium, lanthanum, cerium and didymium. Helium is present, and the mineral is slightly less radio-active than pitch­blende. It has been examined for new elements. Miss Evans *(Journ. Chem. Soc.,* 1908, 93, p. 666) obtained what is possibly a new element, whilst Μ. Ogawa *(Journ. Coll. Sci. Tokyo,* 1908, vol. 25) found indications of three new species: one which he called *nipponium,* with an equivalent weight of about 50 and atomic weight 100; the second with an equivalent of about 16·7; whilst the third yielded a radio-active oxide.

**THORITE,** a rare mineral consisting of thorium - silicate, crystallizing in the tetragonal system and isomorphous with zircon. The theoretical formula, ThSiO4, requires 81∙5% of thoria, but analyses show only 50-70%, there being also some uranium, cerium, &c. The mineral is almost always altered by hydration and is then optically isotropic and amorphous. Owing to differences in composition and to alteration, the specific gravity varies from 4∙4 to 5∙4. The colour is usually light brown, but in the variety known as “ orangite ” it is orange-yellow. The mineral occurs as isolated crystals and small masses in the augite-syenite near Brevik in South Norway; also at Arendal, and in the gem-gravels of Ceylon. If found in larger amount it would be an important source of thoria for incandescent gas mantles. (L. J. S.)

**THORIUM** (symbol Th, atomic weight 232∙42 [O=16]), a metallic chemical element. It belongs to the group of metals whose oxides are generally denominated “ rare earths,” and its history is bound up in the history of the group, which is especially interesting from the fact that it supplies the material for the manufacture of the mantles used in incandescent gas­lighting, and also that the radio-active substances are almost invariably associated with these oxides. The name *thoria* (after the Scandinavian god Thor) was first given in 1815 by Berzelius to a supposed new earth which he had extracted from several rare Swedish minerals. This “ new earth ” turned out to be nothing more nor less than a basis yttrium phosphate. In 1828 he gave the name thoria to an earth which he extracted from a mineral found at Lërön. This mineral is the modern thorite. Thorium has proved to be very widely, although extremely sparingly, distributed: pyrochlor, orangite, monazite, euxenite, gadolonite, orthite, and in fact most of the rare minerals of this type contain it (see B. Szilard, *Le Radium,* 1909, 6, p. 233)∙ The extraction of thorium salts from these minerals is a matter of much tedium. Metallic thorium is obtained by