

LYMAN, Benjamin Smith, geologist, was born at Northampton, Mass., Dec. 11, 1835, son of Judge Samuel Fowler Lyman and grandson of Judge Joseph Lyman. The latter was a son of Capt. Joseph Lyman, a revolutionary soldier, and descendant of Richard Lyman, who came from England in 1631, and was one of the first settlers of Northampton. Benjamin Smith Lyman was also grandson of Benjamin Smith, a leading citizen of Hatfield, Mass., who was brother to Oliver Smith, the founder

of the Smith charities and the Smith Agricultural School of Northampton, and uncle to Sophia Smith, the founder of Smith College of Northampton and of Hatfield Academy. This Benjamin Smith probably derived his name from his great-grandfather, Benjamin Waite, celebrated for his spirited rescue of his wife and infant daughter from Indian captivity. The Smith ancestors all lived in Hatfield or Hadley from the time of Lieut. Samuel Smith, who came from England in 1634. Benjamin Smith Lyman began his studies at Northampton in the common schools, where he remained ten years, at the end of which time he had a year of private instruction. Then entering Phillips Academy, Exeter, and afterwards Harvard College, he was graduated in 1855, with the degree of A.B. The following year he became principal of Deerfield Academy, Massachusetts, and during the summer went to Broad Top mountain, Pa., as assistant to J. P. Lesley in geological and topographical surveying. The next autumn and winter he was assistant in Short's Classical School for Boys in Philadelphia, and the rest of 1857 he spent in traveling between Massachusetts and Alabama, collecting statistics on iron manufacture for the American Iron Association. In 1858 he became assistant on the state geological survey of Iowa, remaining until the close of its field work, under Prof. James Hall. In 1859 he again



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assisted Mr. Lesley in private geological work in the Pennsylvania anthracite region, and in September of that year he went to Europe to study two years at the Paris Mining School and one year at the Freiberg Mining Academy. Returning to America in 1862, he resumed private geological work, associated at first with Mr. Lesley in the anthracite region and in the Cape Breton (N. S.) coal-field. In 1864 he visited southern California, by way of Panama, and returned by the overland stage-coach. He was occupied with geological work in Cape Breton again, and in Pennsylvania, Virginia, Alabama, Illinois and on the Labrador coast until 1869. In December of that year he went to Calcutta, in the service of the British government, to make surveys of oil fields in India. He spent the greater part of 1870 in the Punjab and much of the next winter in Calcutta, and in the spring returned home, on the way touching at several Chinese and Japanese ports. He lived for some time thereafter in Philadelphia, making private surveys as before, particularly in West Virginia. In December, 1872, he went to Japan, in the service of the Japanese government, making in three years a hasty geological survey of the island of Yesso for the colonization department, with headquarters at Tokio. Being assisted the first two years by an American, and throughout by a dozen Japanese students, he made geological and topographical surveys of the Yesso coal and gold fields, a preliminary railroad survey and geological reconnaissance journeys, among others one across the hitherto unexplored centre of the island and around the whole eastern and northern coasts. In 1876 he was engaged by the home department for a two years' geological survey of the oil fields of Japan, with the same Japanese assistants. He also visited government silver, copper, gold and iron mines. In 1878 he was re-engaged under the public works department to begin a general geological survey of Japan, continuing with his native assistants the extensive and elaborate geological and

topographical oil-land surveys, and his reconnaissance of the mining regions. He traveled through the western two-thirds of the main island, around Kiushiu, through Shikoku and Awaji, and by Kyoto and Nagoya, back to Tokio. The rest of 1879 and 1880 was spent in writing reports, looking after the completion of numerous large geological and topographical maps of the oil fields and revising the rock specimens collected in all the surveys. Mr. Lyman was the first to induce the Japanese government to publish the reports made to it by foreigners. He left Japan at the end of 1880, and returned to America, arriving in May, 1881. He then went to live at his native Northampton, making occasional geological surveys in Pennsylvania, Ohio and Nova Scotia, and in 1886 a seven months' reconnaissance of the coal-fields of Colorado and northern New Mexico. In 1885 and 1886 he served as a member of the common council of Northampton, and he was also several years president of the Village Improvement Association, the City Improvement Committee and the Hampshire Natural History Society. In 1887 he undertook the survey of Bucks and Montgomery counties for the state geological survey, and removed to Philadelphia. In his geological surveys he has particularly regarded topographical indications, already shown by his master, Prof. Lesley, to be so important. He has been especially interested in improving the methods of instrumental surveying and of mapping, by means of new stadia rods for use above ground and under ground, published in 1868; equidistant strike curves or underground contour lines for rock beds, as early as 1866 and 1867; a solar transit, patented by him in 1871; and a topographer's light transit, patented in 1886. Among his many publications are: "Telescopic Measurement in Surveying" (1868); "General Report on the Punjab Oil Lands" (1870); "Topography of the Punjab Oil Region" (1871); annual reports on the Japanese geological surveys, and maps of them; "General Report on the Geology of Yesso" (1877); "Character of the Japanese" (1885); "Report on the New Boston and Morea Coal Lands" (1889); "An Old Japanese Foot Measure" (1890); "Japanese Swords" (1892); several papers on Japanese and Chinese grammatical subjects, also papers on local surveys. He is a member of the Geological Society of France; Academy of Natural Sciences of Philadelphia; American Association for the Advancement of Science; Franklin Institute; American Philosophical Society; Asiatic Society of Bengal; German Geological Society; American Institute of Mining Engineers; American Oriental Society; Asiatic Society of Japan; German East-Asiatic Society; New England Meteorological Society; Numismatic and Antiquarian Society, Philadelphia; Historical Society of Pennsylvania; Oriental Club of Philadelphia; American Folk-lore Society; American Academy of Political and Social Science; University Archaeological Association; Geographical Society of Philadelphia; Engineers' Club of Philadelphia.

NINIGRET (or Juanemo), Niantick sachem, was the uncle, or, according to some, the brother-in-law, of Miantonomoh, and was of the Narragansett tribe. The dates of his birth and death are unknown, but Roger Williams found him chief of the Nianticks. The name Ninigret is said to have been the royal title of his tribe, like the Egyptian "pharaoh." In treating with Winthrop, when he could not influence his relations, he left them to the English. He was loath to comply with Winthrop's demand to deliver the Pequots in his charge to the English, but finally consented. A colonial writer records: "Ninigret carried himself proudly, refused to come to us or yield anything, but would not harm us, except we invaded him." We hear little of him