

**PROVIDENCE FRANKLIN  
SOCIETY. REPORT ON THE  
GEOLOGY OF RHODE  
ISLAND**

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Providence Franklin Society. Report on the Geology of Rhode Island by Various

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**VARIOUS**

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PROVIDENCE FRANKLIN SOCIETY.

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REPORT

ON THE

GEOLOGY

OF

RHODE-ISLAND.

(THREE PLATES.)

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PROVIDENCE:  
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## PLATES.

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### PLATE I., facing title page.

*Fig. 1. Anthracomartus*, natural size. A stone split into two pieces, one showing the impression and the other the relief of the same fossil. See p. 114.

*Fig. 2. Mylacrís Packardii*, Seud., natural size. See pp. 49, 55, 79.

### PLATE II., facing page 68.

*Fig. 1. Callipteridium*, new species, or variety of *Althopteris urophylla*, Brgt., one-half the natural size. See p. 72.

*Fig. 2. Sphenopteris fruciformis*, Lesqx., one-half the natural size. See p. 68.

### PLATE III., facing p. 70.

*Fig. 1. Sphenopteris Salisburyi*, Lesqx., natural size. See pp. 69, 70.

*Fig. 2. "Money Stone,"* one-third the natural size. A piece of a boulder lying at or near tide-water, on Quonochontaug Neck, in the southwestern part of Charlestown. The center of each pebble is nearly white, and the outside nearly black. Some of the pebbles show a concentric arrangement in their internal structure, and the cement is also arranged in light colored bands immediately around the pebbles. Some of the pebbles seem to be somewhat distorted by pressing against each other. Dark colored cavities where pebbles have been removed are seen on the right, and the dark outsides of pebbles are seen on the left. The light streak, nearly horizontal, in the upper portion, is a drill-mark. See p. 92.

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N.S.

#### ERRATA.

Page 15. Insert "County" after "Bristol," second line above the foot-note.

Page 57. "1877" should read "1987".

Plates II. and III. "X" should be "×".

Page 82. The interrogation mark should be omitted after "*Smoky Quartz*", and inserted after "*Rose Quartz*".

**REPORT**  
**OF THE**  
**Committee on the Geology of Rhode Island,**  
**PRESENTED TO THE**  
**PROVIDENCE FRANKLIN SOCIETY,**  
**IN 1887.**

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Your committee, appointed June 19, 1883, has held various meetings and presented to the Society partial and verbal reports. Permission was given, January 6, 1885, to report in print; but other engagements have heretofore prevented the completion of the work.

It has been found advisable to divide the report into the following distinct portions:—

I. Index of Publications bearing upon the Geology and Mineralogy of Rhode Island.

II. Catalogue of Rocks and Minerals collected during the Geological Survey of Rhode Island, in 1839.

III. Catalogue of Fossils found in Rhode Island.

IV. Catalogue of Minerals found in Rhode Island.

V. List of Localities in Rhode Island of interest to the geologist and mineralogist.

VI. Results obtained by digging and boring in Rhode Island.

VII. General Remarks.

The following list, arranged under the first of these heads, is not presented as one that is entirely complete. It is merely a



list of such articles and books as have fallen under the notice of this committee. Notifications of errors and omissions will be thankfully received.

The geology of Rhode Island naturally runs in three lines :  
 1. The crystalline rocks, classified as primitive, primary, azoic, eozoic, hypozoic, archæan, metamorphic, etc., by different authors. 2. The coal measures. 3. Glacial effects, drift, and surface geology. Many publications are cited because they have a theoretical or practical bearing upon the crystalline rocks or glacial epoch in New England, even though Rhode Island may not be directly named. Some references to Long Island are included because it is so closely related to Block Island. It is also intended to insert a notice of all the prominent geological surveys and reports of the New England States, as bearing upon the need of a new survey for this State.

No attempt has been made to include all the modern textbooks and other publications on geology and mineralogy. Only those have been mentioned which treat most fully of New England rocks, and are supposed to be most widely known ; or are representatives of certain theories or schools of geology, connected directly with one of the three lines named above.

#### I. INDEX OF PUBLICATIONS

*Bearing upon the Geology and Mineralogy of Rhode Island,  
 Chronologically arranged.*

1768. *February Acts and Resolves of Rhode Island General Assembly*, pp. 76, 77. Patent granted to parties who are "about to dig after Pit-Coal," or "Sea-Coal," "in the Hill, at the Back of the Town" of Providence.

1778. *March Acts and Resolves of Rhode Island General Assembly*, p. 5. Joseph Ballou discovers a silver mine in Cumberland and asks a lottery to develop it.

1808. General Assembly of Rhode Island granted lottery to raise \$10,000, in search of coal.

1808. "An enquiry into the chymical character and properties of that species of Coal lately discovered at Rhode Island ;

together with observations on the useful application of it to the arts and manufactures of the Eastern States." 21 pp. Boston.

1809. Jan. 3. *Rhode Island American*, Providence. Coal discovered at Portsmouth.

1809. Rhode Island Coal Company and Aquidneck Coal Company incorporated.

1809. WILLIAM MACLURE. Geological map of the United States, in a memoir before the American Philosophical Society. Also published separately in Philadelphia in 1817. Rocks classified as Primitive, Transition, Secondary, and Alluvial. Anthracite bearing strata of Rhode Island and Pennsylvania called "Transition."

1810. WILLIAM MEADE. Dr. Archibald Bruce's *American Mineralogical Journal*. Extracts from Dr. William Meade's pamphlet on Rhode Island Coal, probably the one given above, in 1808, as anonymous.

1812. General Assembly granted lotteries: Aquidneck Coal Company, \$30,000; searching for coal in Cumberland, \$12,000; and Rhode Island Coal Company, \$40,000.

1814-15. "Observations on the Rhode Island Coal and Certificates with regard to its qualities, value, and various uses." 17 pp. Boston. Pamphlet evidently designed to promote the sale of Rhode Island coal in Boston. Mine known, and plan to form company, in 1760; but Rhode Island Coal Company not incorporated till 1808. Mine in Portsmouth, northwest part of island of Rhode Island. Legislature of Rhode Island granted company the privilege of a lottery; but grant of no avail, as Massachusetts refused to permit sale of tickets. Many families in Newport and Boston have used the coal as their common fuel for years past. Analysis, about 91 per cent. carbon, and 9 earthy and metallic matters.

1816. PARKER CLEVELAND. "Elementary Treatise on Mineralogy and Geology," with colored Geological Map of the United States. 668 pp. Rhode Island given as "Primitive," except eastern portion, which is marked as "Tran-

sition" (now Carboniferous). "Transition rocks extend from R. I. to Boston," p. 689. Anthracite coal of R. I., p. 410.

1818. AMOS EATON. "Index to the Geology of the Northern States." Several editions were published in subsequent years, with different titles; and in 1830 and 1832 it appeared as a "Geological Text Book." New York.

1819. I. W. WEBSTER. *American Journal of Science*, vol. 1, pp. 243-4. Asbestos in the Anthracite from R. I. Refers to Dr. Meade's account of R. I. coal.

1822. THOMAS H. WEBB. *Amer. Journ. Science*, vol. 4. Fluor Spar near Providence, R. I., p. 50. Notice of 10 minerals in the vicinity of Prov., R. I., pp. 284-5. Notice of localities of 6 minerals in R. I., including Titanium and Cyanite, "an uncommonly beautiful mineral," vol. 5, pp. 402-3.

1822. GEORGE T. BOWEN. *Amer. Journ. Science*, vol. 5. Nephrite from Smithfield, R. I. So called by Dr. Meade, but doubt expressed whether it is genuine nephrite. "This beautiful mineral is of a lively apple green." Specimen furnished to Prof. Silliman by Mr. Bowen, of Providence. [Since called Bowenite.] p. 39. Also "Vegetable Impressions of ferns and other plants remarkably distinct in transition slate, Providence, R. I.," p. 42. Analysis of the above variety of Nephrite by George T. Bowen, of Prov., in laboratory of Yale College. "Its color is bright apple green — sometimes tinged with blue." Differs from nephrite in chemical composition — more water and very little alumina — also infusible before blowpipe and inferior in hardness. Like nephrite in other respects. pp. 346-348.

1823. BENJAMIN SILLIMAN. *Amer. Journ. Science*, vol. 6, p. 353. Fusion of Rhode Island anthracite.

1823. G. TROOST. *Journal of the Academy of Natural Sciences of Philadelphia*, vol. 3, pp. 222-3. Notice of the Yenite of Rhode Island. First time found in United States, at Cumberland, R. I., 15 miles north of Providence. Description given, sometimes called lievrite (also ilvaite.)