

**SECOND GEOLOGICAL SURVEY OF
PENNSYLVANIA: 1874- -'5-'6: HISTORICAL
SKETCH OF THE GEOLOGICAL EXPLORATIONS
IN PENNSYLVANIA AND OTHER STATES. WITH
AN APPENDIX CONTAINING THE ANNUAL
REPORTS OF THE STATE GEOLOGIST TO THE
BOARD OF COMMISSIONERS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649691739

Second Geological Survey of Pennsylvania: 1874- '5-'6: Historical Sketch of the Geological Explorations in Pennsylvania and Other States. With an Appendix Containing the Annual Reports of the State Geologist to the Board of Commissioners by J. P. Lesley

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

J. P. LESLEY

**SECOND GEOLOGICAL SURVEY OF
PENNSYLVANIA: 1874- -'5-'6: HISTORICAL
SKETCH OF THE GEOLOGICAL EXPLORATIONS
IN PENNSYLVANIA AND OTHER STATES. WITH
AN APPENDIX CONTAINING THE ANNUAL
REPORTS OF THE STATE GEOLOGIST TO THE
BOARD OF COMMISSIONERS**

SECOND GEOLOGICAL SURVEY OF PENNSYLVANIA:

1874-'5-'6.

HISTORICAL SKETCH

OF

GEOLOGICAL EXPLORATIONS

IN

PENNSYLVANIA AND OTHER STATES

BY

J. P. LESLEY.

WITH AN APPENDIX CONTAINING

THE

ANNUAL REPORTS OF THE STATE GEOLOGIST TO
THE BOARD OF COMMISSIONERS.

HARRISBURG:

PUBLISHED BY THE BOARD OF COMMISSIONERS
FOR THE SECOND GEOLOGICAL SURVEY.

1876.

st

MICROFILM AVAILABLE

M/Pres. 87

209028

Entered, for the Commonwealth of Pennsylvania, in the year 1876, according
to acts of Congress,
By JOHN B. PEARSE,
Secretary of the Board of Commissioners of Geological Survey.
In the Office of the Librarian of Congress, at
WASHINGTON, D. C.

209028 MICROFILM

Stenotyped by
Mingos Printing and Publishing House,
Harrisburg, Pa.

Printed by
B. F. MEYERS, State Printer,
HARRISBURG, PA.

BOARD OF COMMISSIONERS.

His Excellency, JOHN F. HARTRANFT, *Governor*,
and *ex-officio* President of the Board, Harrisburg.

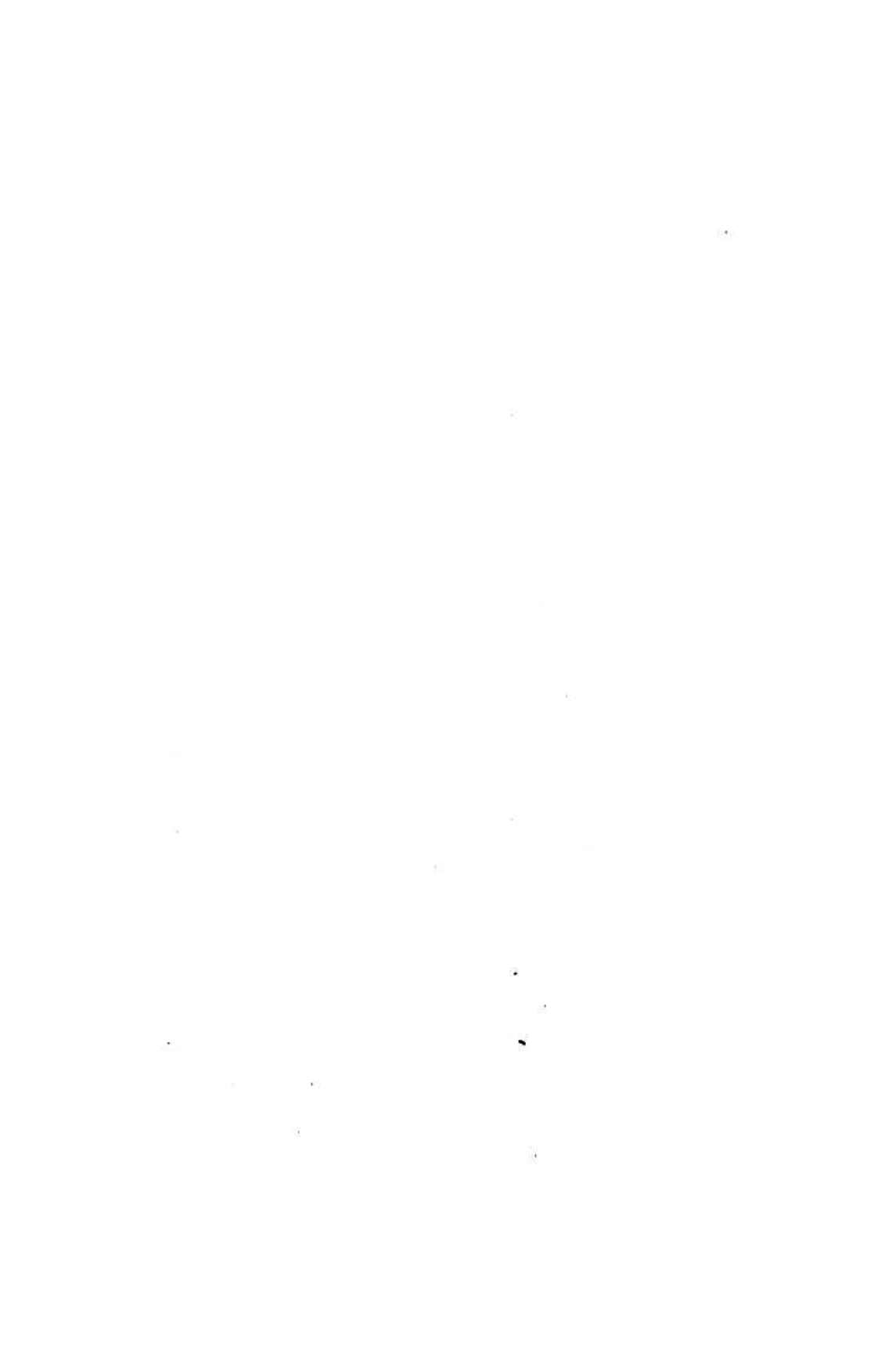
ARIO PARDEE, -	-	-	-	-	-	Hazleton.
WILLIAM A. INGHAM, -	-	-	-	-	-	Philadelphia.
HENRY S. ECKERT, -	-	-	-	-	-	Reading.
HENRY M'CORMICK, -	-	-	-	-	-	Harrisburg.
JAMES MACFARLANE, -	-	-	-	-	-	Towanda.
JOHN B. PEARSE, -	-	-	-	-	-	Philadelphia.
ROBERT V. WILSON, M. D., -	-	-	-	-	-	Clearfield.
HON. DANIEL J. MORRELL, -	-	-	-	-	-	Johnstown.
HENRY W. OLIVER, -	-	-	-	-	-	Pittsburg.
SAMUEL Q. BROWN, -	-	-	-	-	-	Pleasantville.

SECRETARY OF THE BOARD

JOHN B. PEARSE, - - - - - Philadelphia.

STATE GEOLOGIST

PETER LESLEY, - - - - - Philadelphia.



CHAPTER I.

EARLY OBSERVATIONS OF THE GEOLOGY OF PENNSYLVANIA.

Although the neighborhood of Philadelphia was explored by amateur mineralogists as early as 1820, and those large and beautiful private cabinets of minerals began then to be collected which afford rich materials for Dr. Genth's Report on the Mineralogy of Pennsylvania, to be published, this winter, as part of the first fruits of the Second Geological Survey of the State, it was not until about the year 1830 that intelligent eyes were cast upon vegetable and animal fossils, and curious minds undertook the problems of structural geology. The impulse came from New Haven, Boston, Troy and New York; but the discipline was home-made in the halls of the American Philosophical Society and of the Academy of Natural Sciences. Philadelphia had long been the chief centre of natural science on this side of the Atlantic; so that, when the science of Von Buch and DeBeaumont, Sedgwick and Murchison reached Philadelphia, it found the companions and disciples of Bartram and Wilson, McClure and Say, DaSerra, George Ord, and Isaac Lea, ready to receive it and able to advance its progress on American ground.

The early geological memoirs of this country, published in the Transactions of the American Philosophical Society at Philadelphia, in the Transactions of the American Academy at Boston, and subsequently in the Transactions of the Connecticut Academy of Arts and Sciences at Hartford, the Proceedings and Journal of the Academy of Natural Sciences at Philadelphia, and one or two scientific magazines, chiefly Professor Silliman's American Journal of Science and Art at New Haven, were of the crudest nature, but indicative of a widespread desire to observe useful facts in nature and a child-like ignorance of their deeper meaning. Some of these papers were pretentious enough; but most of them are like Etruscan tombs, the preservers of rare and beautiful things which otherwise would not have survived

the wear and waste of time. Some one will hereafter collate and classify them for the use of future students. A few of them may be here mentioned, referring to the publications in which they are found by the initial letters.

At the Boston meeting of the American Association of Geologists and Naturalists Dr. Dana read the title of what was, perhaps, the earliest geological report ever made on American Geology, entitled, Contributions to the Mineralogical Knowledge of the Eastern part of North America and its mountain ranges, by Dr. L. D. Schöpfung (Beyträge, &c.).

1780, Belknap on vitriol and sulphur, in New Hampshire. (Trans. Amer. Acad.)

1782, Gannett on a yellow mineral paint. (T. A. A.)

1782, Webster on oil stone. (T. A. A.)

1783, Lincoln on the Geology of York River, in Virginia. (Trans. Amer. Acad.)

1783, Gannett and Jones on the West River Mountain. (Trans. Amer. Acad.)

1784, Belknap on the White Mountains of New Hampshire. (Trans. Amer. Philos. Soc.)

1785, Williams on earthquakes. (T. A. A.)

1786, Baylies on Say Head, Martha's Vineyard. (T. A. A.)

1786, Thos. Hutchins on A Cascade near the Ohiopile Falls of the Youghiogeny, twelve miles from Uniontown, Fayette County, Pennsylvania. (T. A. P. S. Vol. II, O. S. p. 50.)

This is perhaps the first recorded geological sketch of any part of Pennsylvania. It occupies but a single page, and was read before the Society January 28th, 1786. It calls the coal measure rock which makes the falls "a species of marble, beautifully chequered with veins running in different directions, presenting, on a close inspection, a faint resemblance to a variety of mathematical figures of different angles and magnitudes. A thin flat stone from eight to ten inches thick, about twenty feet wide, forms the upper part of the amphitheatre over which the stream precipitates. The whole front of the rock is made up from top to bottom of a regular succession, principally of limestone," &c.

1789, Hitchcock on frogs found in the rocks. (T. A. A.)

1793, Franklin on a theory of the earth. (T. A. P. S.)

1799, Dewitt on the minerals of New York. (T. A. A.)

1799, Thomas P. Smith, of Philadelphia, called attention to the "crystalized basaltes" of the Conewago Hills in York County, Pennsylvania, as deserving study. (T. A. P. S., Vol. IV, O. S., p. 445.) This attention was not paid to them, however, until 1820, when Judge Gibson compared them with the Carlisle trap-dyke, and with the rocks at Mount Joy, in Cumberland and Lancaster Counties.

1806, Silliman on the Trap ridges of the Connecticut valley. (T. C. A.) This was a report of the first work he did on his return from Europe, and the earliest attempt of the kind, but one, in the United States. He thus characterizes it in his address at Boston, in 1842; an address replete with facts respecting the early growth of science in this country. But the object now in view forbids a detailed description of work like this done outside of the limits of our State.

1807, Latrobe on Freestone quarries. (T. A. P. S.)

1808-9, Godon on the mineralogy of the vicinity of Boston. (Trans. Amer. Acad.)

1808, Cleveland on fossil shells. (T. A. A.)

1809, William Maclure's Geological Map of the United States, with a memoir, appeared in the Transactions of the American Philosophical Society, Vol. VI, p. 411.

This was the summation of observations made during an extensive tour in 1807 and 1808. It crowned its author with the reputation of being the "William Smith of America," and the father of American Geology. He was an Englishman who had personally examined almost every remarkable geological field in Europe, and was therefore as well prepared as a man could be, at that dawn of geological science, to attempt a sketch of the geology of the New World between the seaboard and the Indian wilderness. A revised edition was published in the Transactions of the American Philosophical Society in 1818, and in a small separately bound volume.

Maclure worked with Silliman around New Haven in 1807, and increased the knowledge which the latter had obtained by a studious residence in London and Edinburgh, between the spring of 1805 and June of 1806, and by numerous excursions in England, Belgium and Scotland. He heard Jameson lecture