

**SECOND GEOLOGICAL SURVEY OF  
PENNSYLVANIA: 1874 - '5 - '6 .  
HISTORICAL SKETCH OF  
GEOLOGICAL EXPLORATIONS IN  
PENNSYLVANIA AND OTHER STATES**

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Second Geological Survey of Pennsylvania: 1874 – '5 – '6 . Historical Sketch of Geological Explorations in Pennsylvania and Other States by J. P. Lesley

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**J. P. LESLEY**

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WITH AN APPENDIX CONTAINING  
THE  
ANNUAL REPORTS OF THE STATE GEOLOGIST TO  
THE BOARD OF COMMISSIONERS.

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## PREFACE BY THE AUTHOR.

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The continuation of my Historical Sketch of Geological Explorations in Pennsylvania, begun in this volume, has been postponed from time to time on account of the pressure of official duties.

Sixteen volumes of reports of progress have been issued from the press; five more are printed and nearly ready to issue; another is in press; and seven others will be published during the current summer and autumn; making twenty-nine volumes in all.

To secure accuracy and completeness as far as possible for these published reports of my colleagues; to preserve harmony of nomenclature; to prevent the presentation of conflicting hypotheses; to furnish direction, advice, and assistance when demanded by parties in the field; to draw and color, and superintend the drawing and correction of illustrations; to arrange and write classified indexes for all the volumes; and to read proof of every page going through the press, has been a ceaseless, anxious occupation, apart from the inevitable correspondence of the Survey.

I have therefore no leisure to attempt a revision and correction of these pages now reprinted in a special edition, by order of the Legislature, for the service of the members. But I cannot let escape this opportunity for publishing a letter which I have received from Mr. Wm. B. Rogers, jr., of Philadelphia, to show that if I have done injustice to any one whose labors in science fall within the scope of my historical sketch, it has not been intentionally done.

PHILADELPHIA, *June 23, 1878.*

J. P. LESLEY.

*Letter of Mr. W. B. Rogers, jr.*

1000 WALNUT STREET,  
PHILADELPHIA, *September 11, 1877.*

Prof. J. P. LESLEY,

*State Geologist :*

DEAR SIR: An impulse, not unnatural or unworthy, as I believe, prompts, and must be my apology for this communication.

I have recently read, with a great deal of interest, your "Historical Sketch of Geological Explorations in Pennsylvania, &c.," (1876,) and it is to this subject I beg leave to ask your attention.

You have devoted many pages of narrative to each year in the progress of the First Geological Survey of Pennsylvania, from 1836 to 1843, and have, no doubt, fairly assigned credit to the several assistants engaged upon it. Your intimate knowledge of the mass of material contributed to the final report, and your own work in its preparation, fitted you to become the historian of the first Survey. Your acquaintance with the details of the operations of the *Revision* of the first survey ends with the close of its first year, 1851.

It is here, early summer of 1852, that my personal relations to the Survey began, and they were continued without break until the last sheet of the final report had issued from the Edinburgh press.

In those six years of constant devotion, I became only less well acquainted than yourself with the previous surveys, and in the revised work I was at home in every detail, and upon many points the factotum. My anxious and harrassed uncle trusted to my naturally ready memory to supply the defects of his own. My pen, my pencil, all my acquired information and my zeal, were at his service by day and by night. All of these were accepted at their just

value, and I had the consciousness, which still rests with me, of labor well or at least faithfully performed.

Many years have since intervened, and my course in life has taken a different direction, and yet, even now, I read with pride the language of so keen a critic as yourself in commendation of geological cross-sections and cuts, chiefly illustrating the Anthracite coal chapters, which you attribute to the "genius" of Whelpley, or "the skill" of McKinley, but which were the production of my own hand and "crow-quill" pen, from originals in the pencilled field drawings of one, sometimes of both of my uncles, but more frequently results of the toilsome labor of myself and my faithful attendant, Patrick Daly, whose judgment, almost amounting to intuition in the tracing of coal outcrops, was at that day, and, I believe still is, regarded as unrivaled.

Your impression that the First Survey closed with 1851 is very widely in error. In the years 1852, 1853, and 1854 the entire productive domain of the anthracite coal was mapped in the field, not by copying Whelpley or anybody else, excepting as to the framework of outlying mountains, but continuing the surveys of 1851 in the pen and pencil work of Dalson, on the ground, upon "planchettes," previously prepared by Mr. Poole, of plottings of highways and railways, and cross-sections more or less numerous, which myself and party spent much time in running.

A portion of the Wyoming basin was actually triangulated from a base measured on the "flats" opposite Wilkes Barre. Of the text, too, it may be said that nearly every page of practical detail was written in the region which it describes. The lines of flexure and of outcrop were laid down on the field maps, and the descriptions followed them without the slightest reference to the early Surveys. At Boston, and in Philadelphia, these chapters were supplemented by others having a more general, practical, or scientific bearing.

More or less rapid visits were made to various parts of the State, and notes were taken of the more progressive portions of the bituminous coal field and of some of the iron districts, for the purpose of freshening the old material. The entire Geology of the S. E. counties was revised and