

A

Natural History

OF

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Geological Survey of the State of New York.

PALÆONTOLOGY:

VOL. V. PART II.

TEXT.

CONTAINING DESCRIPTIONS OF THE

GASTEROPODA, PTEROPODA AND CEPHALOPODA

OF THE

UPPER HELDERBERG, HAMILTON, PORTAGE AND CHEMUNG GROUPS.

BY JAMES HALL,

STATE GEOLOGIST.

ALBANY, N. Y.:

CHARLES VAN BENTHUYSEN & SONS.

1879.

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DEDICATION.

To His Excellency

LUCIUS ROBINSON,

Governor of the State of New York:

SIR—In accordance with the custom which has prevailed from the beginning of the publication of the Natural History of the State, I have the honor to present to your Excellency, Volume V, Part II, of the PALEONTOLOGY OF THE STATE OF NEW YORK.

Of the mechanical and artistic execution of the work I may speak in general commendation, and of some portions with unqualified praise. In regard to its scientific merit, I can only express the hope that students in natural science, and the enlightened educators of our State and country, may find this volume a contribution worthy of their acceptance, and a source of material for that higher education and intelligence, which the people of New York so earnestly desire, and which was the grand object of the illustrious founders of the GEOLOGICAL SURVEY, and of those friends of science who subsequently authorized and have directed the publication of the NATURAL HISTORY OF THE STATE OF NEW YORK.

Hoping that in this respect the Volume herewith presented may prove acceptable to your Excellency,

I have the honor to be,

With great respect,

Your obedient servant,

JAMES HALL,

State Geologist.

ALBANY, *December 15, 1879.*

LETTER

TO THE

SECRETARY OF STATE AND SECRETARY OF THE BOARD OF REGENTS.

To Hon. ALLEN C. BEACH,
Secretary of State, and

S. B. WOOLWORTH, LL. D.,
Secretary of the Board of Regents:

GENTLEMEN—By a law of the Legislature of the State of New York, all matters relating to the publication of the Natural History of the State are committed to your direction. In accordance with this law, and my own desire, I beg leave to submit to you Volume V, Part II, of the PALEONTOLOGY OF NEW YORK, which has been done and completed under your direction, and with your approval during its progress.

In submitting this part of the work, it seems proper that I should accompany it with some statement of the present condition of the remaining portions, and an explanation of the causes which have operated to prevent an earlier appearance of the present volume. This explanation is due from myself to you who have so kindly and efficiently sustained the work in its progress through many untoward and discouraging circumstances. It is due to the public of all classes who had a right to expect the publication of a volume long before this time. It is due to myself, because having assumed a position of responsibility, I should either perform the requirements as expected, or offer some reasonable explanation for delay.

It has unfortunately happened that the direction and progress of the work have never been fully within the control of the author, and this has resulted from various causes, as you will see from the following circumstances attending its pursuance :

In 1855, after a virtual suspension of the Palæontology for five years, a contract was made for its continuation, and for its completion in five volumes—two volumes having already been published. Under the conditions of this contract Volumes III and IV were published ; and in accordance with the specified conditions of this agreement, the manuscript of the fifth volume was placed in the hands of the Commissioners in charge of the work, in September, 1866. This manuscript contained the descriptions of all the species of Crinoidea, Gasteropoda, Pteropoda, Cephalopoda, and Crustacea, then known to me. This act constituted the fulfillment of the duties imposed upon the author by the original agreement of 1855.

In the final arrangement regarding the completion of this work, made in 1855, the then Secretary of State, Hon. E. W. Leavenworth, had very properly provided that a certain sum of money should be annually expended in making collections of fossils from the rocks of New York, for the more complete illustration of its Natural History in the department of Palæontology—the collections having previously been made at the personal expense of the author. These collections, thus provided for, were continued for eight years, and a large amount of material was brought together for study ; but the want of proper working-rooms prevented it from being made immediately available.

Since no suitable rooms for the purpose were then in the control of the Commissioners, or of the Regents of the University, the author erected a large building especially adapted to this object, and finally a second building became necessary ; and to-day these are both filled to overflowing with collections of fossils belonging to the State of New York.

From the completion of Volume IV in 1867, the work of printing and lithography remained entirely at a stand-still. The existing contract for the execution of the work having been made many years previously, when prices of labor and material were much lower, it could not be continued without a loss to the contractor. This condition had in fact existed during the preparation