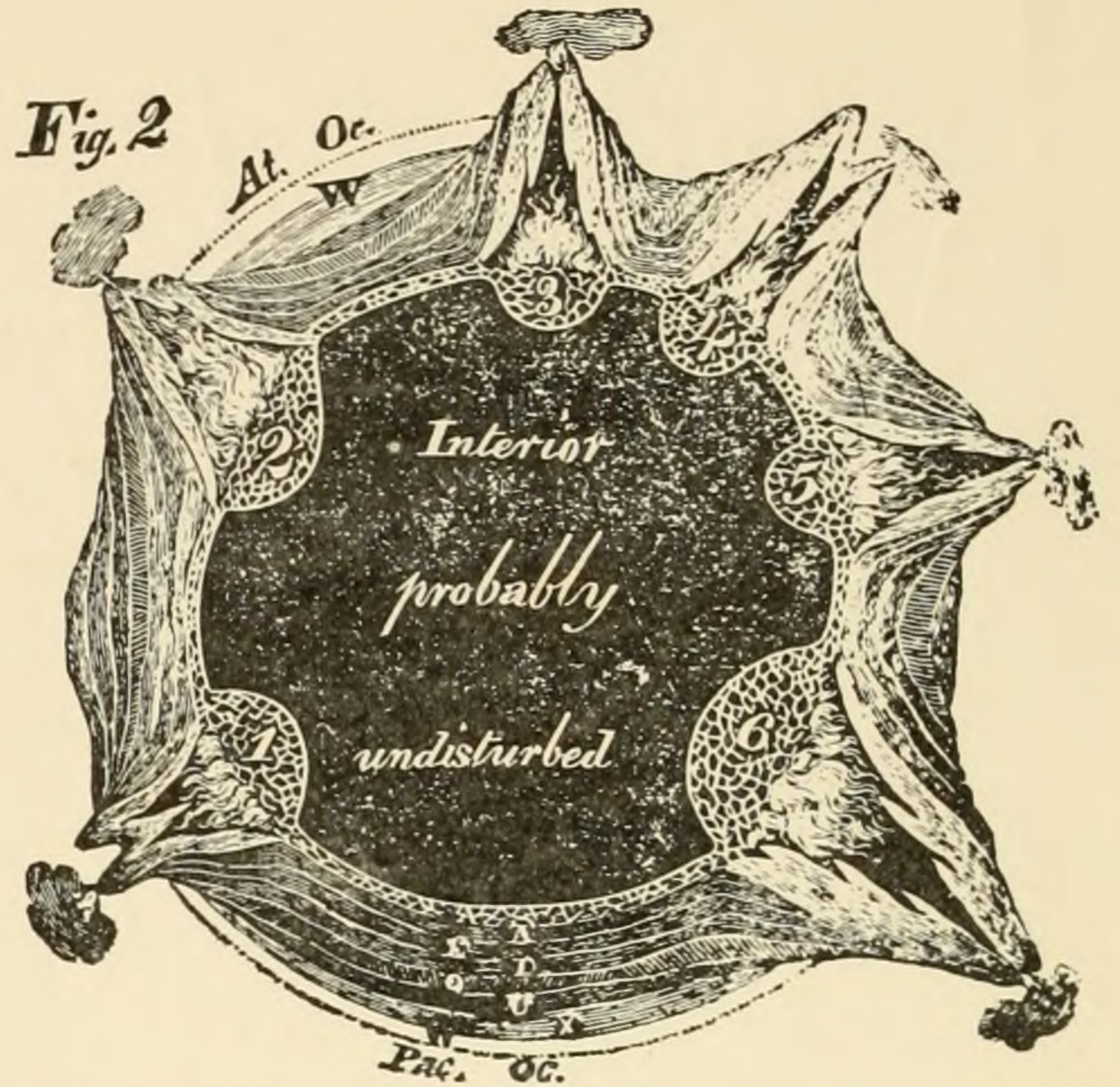
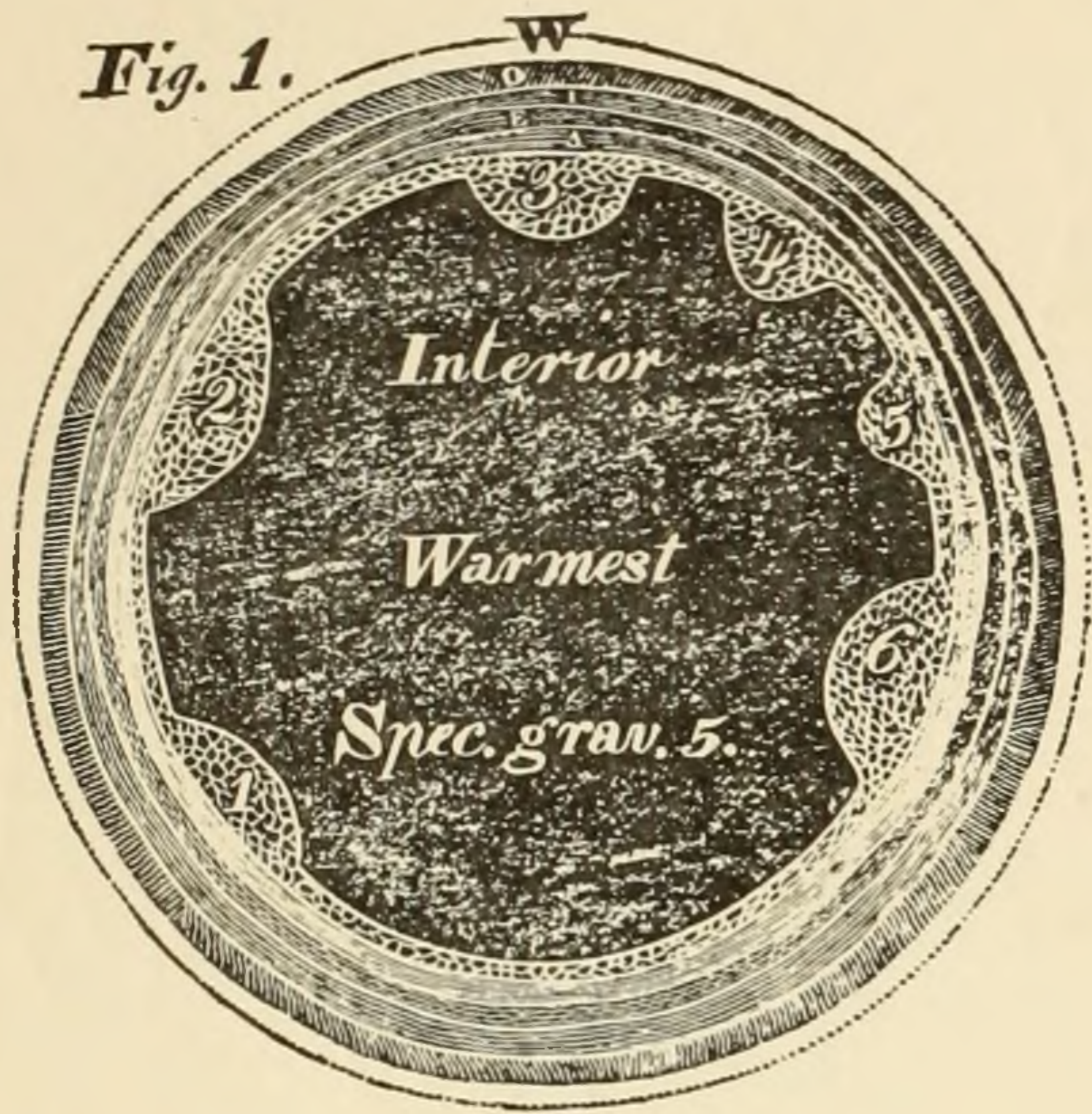


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SEGMENTS.

EXPLANATIONS.

Formations.

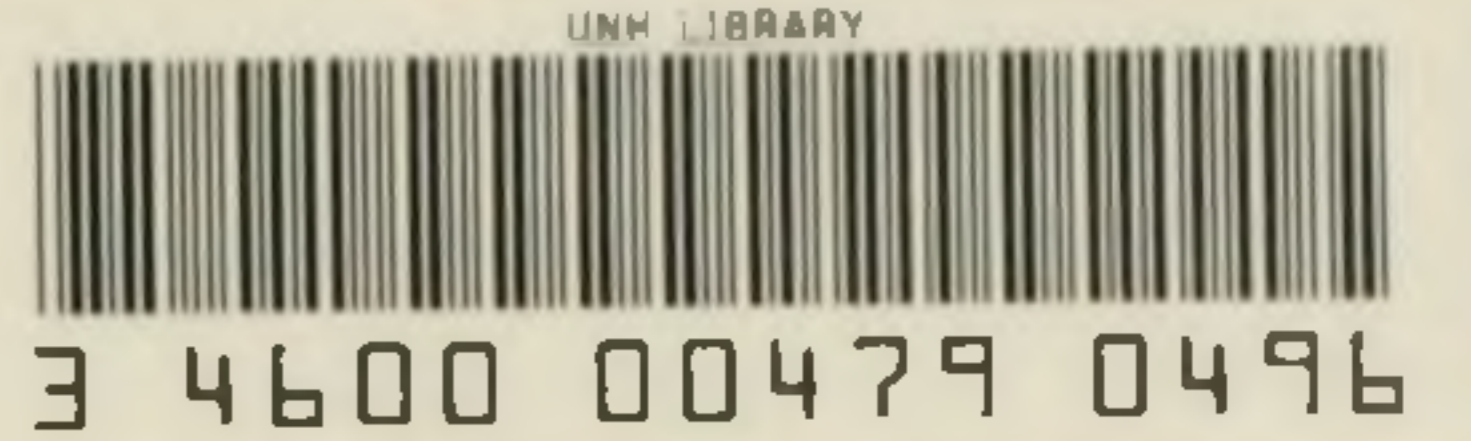
Figures 1 and 2.* A. Lower carboniferous formation—E. Lower quartzose formation—I. Lower calcareous formation—O. The lower side of the second carboniferous formation when used in Fig. 1. This lower part is probably primitive. When used in Fig. 2, it is for all that formation—U. Second quartzose formation—X. Second calcareous formation—W. Oceanic waters.

Combustibles.

These are indicated by numeral figures. In Fig. 1, they are represented as they are supposed to have been deposited at the creation. In Fig. 2, they are represented as having been consumed by combustion, whereby an explosion was produced, which burst through the primitive and transition series—the only deposits then made; and those not perfectly indurated. 1. The combustibles under Rocky Mt.—2. New-England—3. Britain—4. Alps and Pyrennes—5. Caucasus—6. Himalay.

REMARKS. In Fig. 1, the water is represented as encompassing the whole earth; being pressed out to the surface by the greater specific gravity of the earthy materials. While the earth and waters were in this quiescent state, no organized beings, but marine, were provided with a place of residence. In due time the combustible materials marked 1, 2, 3, 4, 5, 6, were ignited, and produced the changes exhibited in Fig. 2.

* These figures are an improvement upon those published in my Geological Index, in 1820, and afterwards copied into Woodbridge's Geography.



NEW ENGLAND INTERCOLLEGIATE GEOLOGICAL CONFERENCE

61st Annual Meeting

at the

State University of New York at Albany

Albany, New York

October 10, 11, 12, 1969

GUIDEBOOK FOR FIELD TRIPS IN NEW YORK, MASSACHUSETTS, AND VERMONT

Editor

John M. Bird

State University of New York at Albany



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Massachusetts, Vermont

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EDITOR'S PREFACE

Attendance at N.E.I.G.C. meetings has "exploded" during the past decade. This year over 700 people have pre-registered, so that it is essential that enough field trips are available to serve all the varied interests such attendance represents. This Guidebook has been prepared by the field trip leaders. Because of its size, I have done no more than assemble the articles into this volume; the authors have done their own editing.

The State University of New York at Albany has subsidized the cost of printing this Guidebook. Additional copies will be available from the SUNY-A Bookstore, Albany, New York 12203.

The articles appear in the order used for registration announcements. Many of this year's field trips go considerably west of geographical New England. However, I think all will agree that all of the trips are within the confines of geological New England and, therefore, of interest to the N.E.I.G.C.

I record here our thanks for the significant contributions and generous efforts of the field trip leaders. Also, we thank Dr. Peter C. Benedict and Miss Linda Schroll for their considerable effort on the logistics for this year's meeting. E-an Zen provided the photo for the inside front cover and, thereby, a good reason for me to include a bit of wisdom and amusement provided by one of the first geologists to study the region encompassed by this year's meeting. It is from:

Eaton, Amos, 1830, Geological Textbook, prepared for popular lectures on North American geology; with applications to agriculture and the arts: Albany, Websters and Skinners, 64 p. (figs. 1 and 2 are on p. 18-19; on p. 17 is the short caption, which reads: "Exhibition of two transverse Segments. The earth is here supposed to be cut into two parts, at the 42° of north latitude. The observer is supposed to stand south of the center of the segments -- all the earth, south of him, being removed.")

PREFACE.

Every geologist is, probably, more or less misled by theory. If the earth was washed and the rocks left clean, they would not disagree in regard to rocks. But they are now dependent on naked cliffs and deep river-washed ravines; which present to the eye less than a hundredth of the evidence required. For ninety-nine hundredths, theory alone furnishes the facts upon which the very same theory is founded. But a long course of observations and careful comparisons, have done considerable towards a correct system of generalization.

Geology is subject to an evil peculiar to itself. If its votaries disagree, the common learner has neither time nor inclination to review their data, by visiting localities referred to, and thus to correct their mistakes and adjust their differences. The reasons, fully written out, which govern

the experienced geologist, would require numerous octavos for each stratum. Therefore the learner must rely upon his confidence in his teacher's habits of careful investigation, his fidelity, his independence, and his talent at generalization. He must not overlook the advantages presented by the district of country which he examines. He should therefore compare the districts examined by different geologists.

The little island of Britain can furnish no authority for a general system; though the industry of distinguished geologists has done much towards an elucidation of important points, in detail. France, taking in the Alps as a primitive nucleus, presents more advantages. But according to De Luc, America alone must give a system of general strata. How far I have succeeded in my attempt to present such a system, future investigations (not the opinions and closet speculations of the geologists of either continent) must decide. For the system adopted in this text-book, I rely on my own personal examinations, aided by Dr. T. R. and Prof. L. C. Beck, M. H. Webster, and J. Eights, more or less supported by Professors Hitchcock, Dewey, and Emmons, from the Atlantic to the western extremity of Lake Erie. For the remainder, I rely upon the personal examinations and collected specimens, which I have now before me, of Dr. Zina Pitcher and Dr. Edwin James. Messrs. Schoolcraft and Peter have also contributed much. We have, altogether, traversed a succession of northerly and southerly strata through more than forty degrees of longitude.

A text-book is too small a name for these days of puffing arrogance. But I propose to present all my supposed heresies to the geological fraternity in this form and under this title. And I beg the favor of the most rigorous criticism upon this book, small as it is. To stimulate men of science to the work of examination and of criticism, I will state; that I intend to publish considerable in scientific journals, also a full system, upon this plan. As I have had more than seven thousand pupils already,* and shall probably have more still, it will be well for them "to be on the alert" if I am propagating errors. I am not in sport--I have, during the last fifteen years, travelled over seventeen thousand miles, for the express purpose of collecting geological materials; the results of which are comprised in this little octavo pamphlet, and exhibited in the accompanying map and wood cuts.

I may be accused of fickleness on account of the changes which appear in every successive book I publish. I confess this is the ninth time I have published a geological nomenclature; and that I made changes in each of more or less importance. But I have always consulted my scientific friends; and every change was founded on new discoveries in "matters of fact." In this text-book, the principal changes relate to the graywackes. The Allegany mountains, I had never examined before with particular care. I verily think, these mountains present everything required for settling that part of the science. The various deposits of Detritus had not been thoroughly studied by any American, when I published my last nomenclature. I believe I have made a few changes in that department, which will finally obtain. I now adopt the Tertiary formation of Europeans; but I find no facts here to justify their numerous subdivisions.

*Rather, auditors.

I can now give European equivalents for all our strata, excepting the ferriferous and geodiferous. Our fourth series, however, seems to be more solid, harsh, and vastly more extensive, than its supposed equivalent. Perhaps it is a repetition of our third series. It is certainly distinct in the range of the profile given at the foot of the map, however.

With all deference to the high character of De La Beche; as an experienced teacher I may say, that his numerous sub-divisions, if adopted, will ruin the science.* Others have done much towards driving the study from our schools, by introducing petty local names. If their authors were not entitled to high respect, on account of other services to the science, one would feel disposed to treat such names ludicrously. For example, there is a variety of first graywacke in a place called Pilfershire, in Columbia county, remarkable for enduring heat. There is another in a place nicknamed Fuddletown, in Onondaga county, of a cellular texture, much used at Salina. The former should be called Pilfershire stone, and the latter Fuddletown stone, to be equivalent, in absurdity, to Purbeck, Bagshot, and other ridiculous European names.

The distribution of strata into five series, cannot be called an innovation; for it produces no change whatever. It amounts to nothing more, than referring well established strata one step further back, towards an elementary basis.

Students, for whom his text-book is intended, may feel no interest in any thing personal, relating to myself. But I will throw this paragraph in their way. I have been accused of arrogance for stating facts relating to American geology, without formally bowing to European authorities. I should condemn myself for any step in the science, which was not taken with a due consideration of all that had been done in Europe, Asia and Africa, in advance of our own investigations in point of time. Whoever is "first in the field" of natural science, has an exclusive right to give names. His successors should either adopt his names, or give them as synonyms and equivalents. This is essential to the very being of science. But English and French geologists have introduced new names, not adopted in Germany; because new discoveries made them necessary. I have done the same thing in America, and for the same reasons.

I confess that this is a kind of "ipse dixit" text-book. It is so, because the plan does not admit of demonstration. In a future publication, I intend to cite authorities from nature to illustrate my views. But I am prepared to abandon any of them; as I have frequently done heretofore, in cases of numerous errors, to which I am still subject.

Geology is a progressive science; and he, who has any respect for his future reputation, should be exceedingly cautious about committing himself on matters of fact or speculation. I confess, that I have, most egregiously, violated this rule; but there are peculiar circumstances in my case, arising from my being "a hireling drudge" to the most munificent patron of this science, which will palliate, at least if not justify.

*See Table of Equivalents at the end of this Text-Book.

I despise arrogance; but I am within sixteen years of the "three score and ten," when the mind of man is averaged beyond the period of vigorous effort. About two score of these years have been devoted to Natural Science. I offer this as an apology for some dogmas, forbidden to youth.

AMOS EATON.

Rensselaer School, Troy, N. Y.
January 23, 1830.