

JOURNAL

OF

THE ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

VOL. III. SECOND SERIES.

PHILADELPHIA:
PRINTED FOR THE ACADEMY,
BY MERRIHEW & THOMPSON.

1855—1858.

CONTENTS.

PART I. MAY, 1855.

ART. I.—Notice of Producti found in the Western States and Territories, with descriptions of twelve New Species. By J. C. Norwood and Henry Pratten, of the Illinois Geological Survey, ¹	5
ART. II.—Notice of the genus Chonetes, as found in the Western States and Territories, with descriptions of eleven New Species. By Joseph G. Norwood and Henry Pratten, of the Illinois Geological Survey, ²	23
ART. III.—Contributions to South American Herpetology. By Edward Hallowell, M. D.,	33
ART. IV.—Plantæ Heermannianæ. Descriptions of New Plants, collected in South California by Dr. A. L. Heermann, Naturalist attached to the Survey of the Pacific Railroad route, under Lieut. R. S. Williamson, U. S. A. With remarks on other Plants heretofore described and belonging to the same collection. By E. Durand and Theod. C. Hilgard, M. D., ³	37
ART. V.—An account of several species of Fish observed in Florida, Georgia, &c. By John Edward Holbrook, M. D., Professor of Anatomy, &c., Charleston, S. C.,	47
ART. VI.—Researches on the Cryptogamic Flora of the State of Georgia. By Prof. Julien Deby,	59
ART. VII.—Descriptions of New Species of Birds of the Genus Spermestes, Swainson, in the Museum of the Academy of Natural Sciences of Philadelphia. By John Cassin,	69

PART II. DECEMBER, 1855.

ART. VIII.—Notice of Fossils from the Carboniferous Series of the Western States, belonging to the genera Spirifer, Bellerophon, Pleurotomaria, Macrocheilus, Natica, and Loxonema, with descriptions of eight new characteristic species. By Joseph G. Norwood and Henry Pratten, of the Illinois Geological Survey, ⁴	71
ART. IX.—Plantæ Prattenianæ Californicæ: An enumeration of a collection of California Plants, made in the vicinity of Nevada, by Henry Pratten, Esq., of New Harmony; with critical notices and descriptions of such of them as are new, or yet unpublished in America. By Elias Durand, ⁵	79
ART. X.—Relation of Atomic Heat to Crystalline Form. By J. Aitken Meigs, M. D., ⁶	105
ART. XI.—Contributions towards a knowledge of the Marine Invertebrate Fauna, of the Coasts of Rhode Island and New Jersey. By Joseph Leidy, M. D., ⁷	135
ART. XII.—Descriptions of New Species of Psittacidæ, in the collection of the Academy of Natural Sciences of Philadelphia. By John Cassin, ⁸	153

¹ Extra copies printed for the Author,	August, 1854.
² “ “ “ “	August, 1854.
³ “ “ “ “	November, 1854.
⁴ “ “ “ “	July, 1855.
⁵ “ “ “ “	August, 1855.
⁶ “ “ “ “	October, 1855.
⁷ “ “ “ “	November, 1855.
⁸ “ “ “ “	November, 1855.

CONTENTS.

PART III. NOVEMBER, 1856.

ART. XIII.—Descriptions of some remains of fishes from the Carboniferous and Devonian Formations of the United States. By Joseph Leidy, M. D., ¹	159
ART. XIV.—Description of some remains of extinct Mammalia. By Joseph Leidy, M. D., ²	166
ART. XV.—On the Sandstone Fossils of Connecticut River. By James Deane, M. D., ³	173
ART. XVI.—Plantæ Kaneanæ Grœnlandicæ. Enumeration of Plants collected by Dr. E. K. Kane, U. S. N., in his first and second expeditions to the Polar regions, with descriptions and remarks. By Elias Durand, ⁴	179
ART. XVII.—A Commentary on the Synopsis Fungorum in Americâ Boreali mediâ degentium, by L. D. de Schweinitz. By the Rev. M. J. Berkeley, M. A., F. L. S., and the Rev. M. A. Curtis, F. A. A. S., ⁵	205
ART. XVIII.—Synopsis of the Melolonthidæ of the United States. By John L. Le Conte, ⁶	225

PART IV. FEBRUARY, 1858.

ART. XIX.—Descriptions of Exotic Genera and species of the family Unionidæ. By Isaac Lea, LL. D., ⁷	289
ART. XX.—Observations on a group of Cretaceous Fossil Shells, found in Tippah County, Miss., with descriptions of fifty-six new species. By T. A. Conrad, ⁸	323
ART. XXI.—On the Caducibranchiate Urodele Batrachians. By Edward Hallowell, M. D., ⁹	337
ART. XXII.—On Trigonophrys rugiceps. By Edward Hallowell, M. D., ¹⁰	367

¹ Extra copies printed for the Author,	April, 1856.
² " " " "	April, 1856.
³ " " " "	April, 1856.
⁴ " " " "	May, 1856.
⁵ " " " "	July, 1856.
⁶ " " " "	November, 1856.
⁷ " " " "	January, 1858.
⁸ " " " "	January, 1858.
⁹ " " " "	January, 1858.
¹⁰ " " " "	January, 1858.

ART. XX.—*Observations on a group of Cretaceous Fossil Shells, found in Tippah County, Miss., with descriptions of fifty-six new species.*

By T. A. CONRAD.

The Cretaceous strata of Mississippi have long since been observed and partially noticed by geologists, and the lamented Professor Tuomey has described a number of their fossil contents. I now introduce quite a distinct group of shells, which are imbedded in a different matrix compared with the prevalent cretaceous marls, green sand and limestones. The discovery of these beautiful organic remains is due to the indefatigable exertions of Dr. W. Spillman, of Columbus, who has forwarded a collection of specimens more or less perfect, consisting of nearly sixty species, all of which appear to be unpublished except *Scaphites Conradi*. The appearance of these shells is like that of eocene species which have merely lost their animal matter, and in this respect are very unlike the condition of similar genera in the contiguous rocks of the same era. The fossils are imbedded in a sandy marl of a dark gray color, the principal constituents of which are fine scales of mica and grains of quartz mixed with fragments of small shells; and though some of the very thin species are distorted, the stronger retain their original shapes and are generally very perfect. Species of CRASSATELLA, NUCULA and MERETRIX have the valves united as in life, as well as a few of the extremely thin INOCERAMI, though the latter have been more or less distorted by pressure. The numerical proportion of species of Cephalæ and Acephalæ is nearly equal. The external sculpture of all is as sharply defined as in existing species. Besides SCAPHITES and BACULITES, there is only one shell in the collection which resembles a species of the green sand or limestone, and it is quite distinct. The rare genus PULVINITES is herein for the first time introduced as an American form. The analogous species, as well as that of GERVILLIA, occurs in the Baculite limestone of France and Normandy, which I believe is referred by D'Orbigny to his Senonien Stage, the same in which he includes the Cretaceous fossils of North America.

It is interesting to find bivalves of so remote an era in sufficient preservation to exhibit generic characters as clearly defined as they are in living shells. In this condition are the hinges of GERVILLIA, PULVINITES, CTENOIDES and CARDIUM. There are also specimens of BACULITES and SCAPHITES which exhibit the interior divested of all extraneous matter, and delight the eye with exquisite curves of the foliated septa, whilst the shells glow with brilliant iridescent tints.

This beautiful series of cretaceous forms seems to be very limited in geographical distribution, so far as our present knowledge extends. It is probably unknown as yet beyond the limits of Tippah County, which borders on Tennessee. No account has been given of such a group by the State Geologists of Tennessee or Alabama. Dr. Spillman informs me, "The fossils you have now under examination were found in the bluffs of Owl creek, three miles north of the town of Ripley," and he concurs in opinion with me that they might properly be named the "Ripley group." He also remarks that *Ammonites placenta* occurs in it with the shell preserved, and that in connection with the Ripley group, or in the same locality, are "*Exogyra costata*, **Gryphæa mutabilis*, *Ostrea plumosa*, *Natica petrosa*, *Nautilus Dekayi*, &c., with the shell more or less preserved, in an argillo-calcareous marl," but none of these species are contained in his collection sent me from Tippah County.

Professor Harper, in his report for 1857, describes some of the localities of the above group near Ripley, and names many of the genera of its contained fossils.

It would perhaps be convenient to designate these strata Upper Cretaceous, in contradistinction to the limestones and marls beneath, which are palæontologically so distinct.

A C E P H A L A .

PHOLADOMYA, *Sowerby*.

PHOLADOMYA TIPPANA. Pl. 34, fig. 9. Acutely subovate, very thin, profoundly ventricose, with numerous radii, curved and dichotomous on the anal side.

An imperfect specimen, with a portion of the shell, has been restored to an approximate outline in the figure. The sculpture is in sufficient preservation to characterise the species.

PERIPLOMA, *Schum.*

PERIPLOMA APPLICATA. Oblong-oval, equilateral, compressed, thin and fragile; right valve convex-depressed; left valve flattened or slightly concave, with an oblique anterior carinated line; valves smooth in the middle, roughened with rugose concentric lines posteriorly; anterior end truncated or obtusely rounded, nearly direct; basal margin contracted in the middle.

Length $1\frac{3}{4}$ inches.

SILIQUARIA, *Schum.*

SILIQUARIA BIPLICATA. Pl. 34, fig. 17. Thin, convex, with two radiating folds or depressions anteriorly; basal line slightly contracted or incurved; anterior side short,

**Ostrea vesicularis*. *Lam.*

ment, angular, acute, short on the back of the body volution, but extending in front to a carinated line which borders the labrum; transverse striæ distinct at base; labrum extended into the rostrum above the middle, where it is angulated and subcarinated and channelled within.

The beak is broken as well as the rostrum of the outer lip, but otherwise the only specimen in the collection is very well preserved.

HARPAGO, *Klein.*—PTEROCERA, *Lam.*

HARPAGO TIPPANUS. Pl. 35, fig. 25. A fragment, with smooth subangulated volutions, a carinated line revolving at the base of each; rostrum of the labrum profoundly extended, trilobate, the central and upper lobe profoundly carinated in the middle; substance of the shell thin.

The labrum has evidently been extended above the apex, but only a slight trace of it remains near the upper part of the spire. The specimen is evidently a young or immature shell.

RIMELLA? *Agass.*

RIMELLA CURVILIRATUS. Pl. 35, fig. 9. Fusiform, ribbed longitudinally; ribs somewhat curved, slightly sinuous, about twenty-three in number on the body volution; interstices transversely striated; beak produced?

CONUS, *Lin.*

CONUS CANALIS. Pl. 35, fig. 22. Spire prominent, volutions profoundly angular in consequence of a deep channel revolving at the suture.

A very remarkable species, in its profoundly channelled suture presenting a strong contrast to more modern fossil or recent cones.

DRILLIA, *Gray.*

1. DRILLIA NOVEMCOSTATA. Pl. 35, fig. 13. Subfusiform, spire elevated; volutions scalariform, having distant, wide, prominent, rounded slightly oblique costæ, terminating above at a crenulated line which borders the suture; body volution with short, very prominent, tuberculiform, thick ribs; revolving lines obsolete above, prominent and alternated inferiorly.

2. DRILLIA? TIPPANA. Pl. 35, fig. 5. Subfusiform, with thick, rounded, smooth, longitudinal ribs on the body volution, each tuberculiform at the summit; ribs of the spire tuberculiform at base, or interrupted in the middle; base with thick, prominent revolving lines.

