

re existed a low and narrow aperture, through
 an issued. The opening above the surface of the
 teen inches high; but its dimensions were seen to
 A boat was constructed to suit this opening, through
 ed containing a single person in a recumbent posi-
 feet, the passage enlarged enough to allow the
 ne an upright position; and he proceeded to the
 ter of a mile, the width of the passage varying
 y feet. Here the water was thirty feet in depth,
 the light he had left at the commencement of his
 tence of a turn in the passage, he advanced in a
 about sixty feet, when he encountered a semicir-
 cular tufa, over which the water broke with a slight
 his boat over the obstruction, he proceeded as he
 met a similar barrier. In this manner he passed
 uns, which varied in height from two to twelve
 face of the water. The obstructions being passed,
 the extremity of the water, where quitting the boat,
 d narrow passage, which soon became connected
 n, at least fifty feet square. The rock is repre-
 senting into a kind of greywacke, in consequence of
 ions were visible in this apartment. The floor
 ge masses of rocks, which had been apparently
 e roof; and the sound of a distant waterfall, was
 e.

which describes the extent of this interesting cave-
 known. The apartments, have been subjected
 ably to the method of Dr. BRUCKLAND, but with-
 discoveries, similar to those of the Kirkdale cave-
 the columnar and stalactitic varieties of Calca-
 site is said to have been found in some parts of

MISCELLANIES.

DOMESTIC AND FOREIGN.

1. *Observations on the Genus Unio, together with descriptions of new genera and species in the Families, Naiades, Concha, Colimacea, Lymnaeana, Melaniana and Peristomiana, with colored plates; by ISAAC LEA.*—The present splendid memoir is intended to conclude the series, which, in 1827 began to appear in the Transactions of the American Philosophical Society. Its contents sufficiently evince, that Mr. LEA, to whom American naturalists appear very judiciously to have consigned this extraordinary genus in conchology, did by no means exhaust his subject, when in the last previous contribution, he carried the list of indigenous species to seventy four.* We are now to follow him in the annunciation of the following new species, to which we shall simply append their *habitat*.

Unio capillaris. Ohio.

sub-globosus. Bayou Teche. La.

capsaeformis. Cumberland River.

Ravenclianus. French Broad River, N. C.

Haysianus. Cumberland River.

Hildrethianus. Near Marietta, O.

Schoolcraftensis. Fox River. Green Bay.

geometricus. Bayou Teche. La.

Taitianus. Alabama River.

globosa. Ohio River.

Cooperianus. do.

Conradicus.

Sowerbianus. Tennessee.

dromas. Harpeth River, Tennessee.

Troostensis. Cumberland River.

perdix. Harpeth River.

pictus. do.

Shepardianus. Altamaha River, near Darien.

fulvus. South Carolina.

modioliformis. Santee Canal, S. C.

Kirtlandicus. Mahoning, O.

* For a notice of the memoir referred to see Vol. xxix. p. 133. et seq. of this work.

- Unio Nashvillianus*. Cumberland River.
Blandingianus. St. Johns, Florida.
camelus. Ohio River.
Griffithianus. South Carolina.
confertus. Santee Canal.

They amount to twenty six, in all;—thus carrying the number of American Uniones to the round number of *One Hundred* and presenting us with a singular coincidence in American botany, with the genus *Carex*, where the described species is also about one hundred, and where the difficulty of distinction is quite analogous.

Mr. LEA has also described the following foreign species of *Unio*: viz.

- Unio Nicklinianus*. China.
Murchinsonianus. do.
parallelopipedon. River Parana, South America,
lacteolus. Rio de la Plata.
emarginatus.
divaricatus. Egypt.
Corrianus. India.
Grayanus. China.
Burroughianus. River Parana.
Paranensis. do.

We likewise enumerate the species of other genera belonging to the Naiades, brought forward in the present paper.

- Symphynota globosa*. Ohio River.
Woodiana. China.
magnifica. do.
discoidea. do.
Benedictensis. Lake Champlain.
Anodonta Ferussaciana. Ohio River.
incerta. do.
Stewartiana. Bayon Teche. La.
plana. Near Louisville.
lato-marginata. River Parana.
Blainvillianana. Chili.
tenebriosa. River Parana,
Mortoniana. do.
Burroughiana. Island Luconia, near Marietta.

Margaritana Raveneliana. French Broad and Swananoë Rivers, N. C.

A very important part of Mr. LEA's memoir marks upon the specimens in the Parisian cabinet of LAMARCK the characters for the species of the *toire Naturelle des Animaux sans Vertèbres*. It is allowed that no parts of the writings of the great laborer are here criticised, are so unintelligible as the present family. SWAINSON has said, that "all the species described so many (species,) the short descriptions and the want of figures to illustrate them, rendered it difficult to determine accurately, one half the species which he has described." Nor does it appear surprising that this when it is recollected, that his materials were wanting for the task, and moreover that he labored under a great deal of anxiety while engaged in this part of his labors.

The observations of Mr. LEA, therefore, made with much candor, and with a proper regard to the deceased conchologist, will be thankfully received by the cultivator of this department of Zoology. We will be in the utmost brevity.

Unio sinuata. KLEIN first called it *crassissimus*.
U. elongata. The true *Mya margaritifera* inhabits the north of Europe.

U. crassidens. Is the *cuneatus* of BARNES. *pezoides* of LEA. *crassidens* will have preceded.

U. Peruviana. The *plicatus* of SAY.

U. purpurata. LAMARCK supposed the specimen from Africa, but it probably came from New Orleans. LEA coincides with the *Peruviana*.

U. ligamentina. The *crassus* of SAY.

U. obliqua. The *undatus* of BARNES.

U. retusa. The *torsus* of RAFINESQUE.

U. rarisulcata. The *complanatus* of SOLANDER.

U. coarctata. do.

U. purpurascens. do.

U. radiata. The true *radiatus*.

U. brevis. The resemblance to the *U. radiata* that Mr. LEA thinks the shell came from Europe. It is from the Isle of France.

U. rhombula. A young individual of the *U. rhombula* SOLANDER, and from the United States.

1. Cumberland River.
 2. St. Johns, Florida.
 3. Rio River.
 4. South Carolina,
 5. Antee Canal.
 6. Twenty six, in all;—thus carrying the number
 7. to the round number of *One Hundred* and
 8. singular coincidence in American botany, with
 9. the described species is also about one hun-
 10. difficulty of distinction is quite analogous.
 11. described the following foreign species of *Unio*:

China.

12. *mis.* do.

13. *don.* River Parana, South America,
 14. Rio de la Plata.

Egypt.

India.

China.

15. River Parana.

do.

16. I enumerate the species of other genera belonging to
 17. forward in the present paper.

Ohio River.

18. China.

19. do.

20. do.

21. *ensis.* Lake Champlain.

22. Ohio River.

do.

23. Bayon Teche, La.

24. near Louisville.

25. *ata.* River Parana.

26. *ia.* Chili.

27. River Parana,

28. do.

29. *na.* Island Luconia, near Marietta.

30. *ana.* French Broad and Swananoë Rivers,

A very important part of Mr. LEA's memoir is formed by his remarks upon the specimens in the Parisian cabinets, which afforded LAMARCK the characters for the species of the Naiades in his *Histoire Naturelle des Animaux sans Vertèbres*. It is universally allowed that no parts of the writings of the great naturalist whose labors are here criticised, are so unintelligible as those relating to the present family. SWAINSON has said, that "although LAMARCK has described so many (species,) the short descriptions he has given and the want of figures to illustrate them, render it impossible to determine accurately, one half the species which he has enumerated." Nor does it appear surprising that this should be the case when it is recollected, that his materials were wholly inadequate for the task, and moreover that he labored under a distressing ophthalmia while engaged in this part of his labors.

The observations of Mr. LEA, therefore, made, as they appear to be with much candor, and with a proper regard for the reputation of one of the deceased conchologist, will be thankfully received by every cultivator of this department of Zoology. We shall present them in the utmost brevity.

Unio sinuata. KLEIN first called it *crassissima*.

U. elongata. The true *Mya margaritifera* of LINNÆUS. It inhabits the north of Europe.

U. crassidens. Is the *cuneatus* of BARNES. var. *a* is the *trapezoides* of LEA. *crassidens* will have precedence of *cuneatus*.

U. Peruviana. The *plicatus* of SAY.

U. purpurata. LAMARCK supposed the specimen to have come from Africa, but it probably came from New Orleans. The *ater* of LEA coincides with the *Peruviana*.

U. ligamentina. The *crassus* of SAY.

U. obliqua. The *undatus* of BARNES.

U. retusa. The *torsus* of RAFINESQUE.

U. rarisulcata. The *complanatus* of SOLANDER.

U. coarctata. do.

U. purpurascens. do.

U. radiata. The true *radiatus*.

U. brevisalis. The resemblance to the *U. littoralis* is so great that Mr. LEA thinks the shell came from Europe, and not from the Isle of France.

U. rhombula. A young individual of the *complanatus* of SOLANDER, and from the United States.

- U. carinifera.* The *complanatus* also.
U. Georgina. do.
U. clava. The *scalenia* of RAFINESQUE, and the *modioliformis* of SAY.
U. recta. The *praelongus* of BARNES: *recta*, therefore, has precedence.
U. naviformis. The *cylindricus* of SAY, whose name has precedence.
U. glabrata. The *complanatus*.
U. nasuta. A young specimen of the *gibbosus* of BARNES. It is not the same with the *nasutus* of SAY. As LAMARCK described the shell before BARNES, he has a claim for the species; but having employed a name already applied in the genus, he loses it. The name of BARNES must therefore stand.
U. ovata. The *ovatus* of SAY. var. *b* is supposed to be the *occidens* of LEA.
U. rotundata. The *suborbiculata* of LAMARCK. The *globulus* of SAY, and the *sub-globosus* of LEA.
U. littoralis. The *semirugata* of LAMARCK from Bagdad, and the *incurvus* of LEA, from Gibraltar, belong to this species.
U. nana. Supposed to be *littoralis* also.
U. delodonta. Suspected to be the *lacteolus* of LEA.
U. sulcidens. A compressed *complanatus* from Connecticut River.
U. rostrata. An elongated variety of the *pictorum*.
U. Batava. This is distinct from *pictorum*.
U. nodulosa. A young individual of the *ovata* of DONOVAN. It is a European shell, and LAMARCK's *habitat*, Lake Champlain, is an error.
U. varicosa. A young specimen of the *Alasmadonta marginata* of SAY.
U. granosa. A true species.
U. Virginiana. A poor specimen of the *radiatus*.
U. luteola. The *siliquoides* of BARNES. LAMARCK is in error respecting the locality. His name has precedence.
U. angusta. A distinct species.
U. manca. A *pictorum*.
U. cariosa. The two specimens described are, the one a bad specimen of the *cariosus* of SAY, and the other a bad one of the *Alasmadonta marginata* of SAY. One of the *habitats*, Lake Erie, is an error.

- U. spuria* and *australis* do not exist in any by Mr. LEA.
U. anodontina. The *marginalis* which is for
U. suborbiculata. The *rotundata*.
Hyria avicularis. This is the *Mya syrme* and DILLENIUS: *avicularis*, should therefore,
H. corrugata. A distinct species.
Anodonta cygnea. The *Mytilus cygneus* o
A. anatina. Resemble the *cygnea*.
A. sulcata. A variety of *cygnea*.
A. fragilis. A distinct species.
A. rubens. DESHAYES places it under *Irid*
A. crispata. A distinct species.
A. unioopsis. do.
A. Pennsylvanica. The *undulata* of SAY a
SON.
A. intermedia. A variety of *anatina*.
A. trapezialis. The *giganteus* of SPINX.
A. exotica. A distinct species.
A. glauca. do.
A. sinuosa. do.
A. Patagonica. do.
Iridina exotica. do.
I. Clappertoni. Is a young *nilotica*.
The geographical distribution of the Naiads has received the attention of Mr. LEA; and interesting remarks upon this subject. He finds a dividing line of the species so perfectly doubt if there be more than two or three species of this family existing in the eastern waters westward in the Western States." Respecting the range, the shells of the River Mohawk and it be the same with those of the Delaware, with the exception of the *Symphynota compressa* LEA found in the Ohio. "The tributaries of the &c., with few exceptions, produce the westernly the lakes do also." Lake Champlain the St. Lawrence contains the *Symphynota ai* and the *Unio rectus* with other western species of the extremity of the Alleghany ridge, where the

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The *complanatus* also.
do.

The *scalenia* of RAFINESQUE, and the *modioliformis*

of BARNES: *recta*, therefore, has

The *cylindricus* of SAY, whose name has

The *complanatus*.

A young specimen of the *gibbosus* of BARNES, with the *nasutus* of SAY. As LAMARCK described BARNES, he has a claim for the species; but having already applied in the genus, he loses it. The must therefore stand.

The *ovatus* of SAY. var. *b* is supposed to be the

The *suborbiculata* of LAMARCK. The *globosus* of LEA.

The *semirugata* of LAMARCK from Bagdad, and the *habitat*, from Gibraltar, belong to this species. Suspected to be the *littoralis* also.

Suspected to be the *lacteolus* of LEA.

The compressed *complanatus* from Connecticut River. An elongated variety of the *pictorum*.

This is distinct from *pictorum*.

A young individual of the *ovata* of DONOVAN. The *habitat*, and LAMARCK's *habitat*, Lake Champlain, is

A young specimen of the *Alasmadonta mar-*

... true species.

A poor specimen of the *radiatus*.

The *siliquoides* of BARNES. LAMARCK is in error. His name has precedence.

A distinct species.

The *pictorum*.

Two specimens described are, the one a bad specimen of the *radiatus* of SAY, and the other a bad one of the *ovata* of SAY. One of the habitats, Lake Erie.

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U. spuria and *australis* do not exist in any cabinets examined by Mr. LEA.

U. anodontina. The *marginalis* which is found only in India.

U. suborbiculata. The *rotundata*.

Hyria avicularis. This is the *Mya symmatophora* of GMELIN and DILLENIUS: *avicularis*, should therefore, be given up.

H. corrugata. A distinct species.

Anadonta cygnea. The *Mytilus cygneus* of LINNÆUS.

A. anatina. Resemble the *cygnea*.

A. sulcata. A variety of *cygnea*.

A. fragilis. A distinct species.

A. rubens. DESHAYES places it under *Iridina*.

A. crispata. A distinct species.

A. uniopsis. do.

A. Pennsylvanica. The *undulata* of SAY and *rugosus* of SWAINSON.

A. intermedia. A variety of *anatina*.

A. trapezialis. The *giganteus* of SPIX.

A. exotica. A distinct species.

A. glauca. do.

A. sinuosa. do.

A. Patagonica. do.

Iridina exotica. do.

I. Clappertoni. Is a young *nilotica*.

The geographical distribution of the Naiades in the United States has received the attention of Mr. LEA; and he offers some very interesting remarks upon this subject. He finds the Alleghanies to be a dividing line of the species so perfectly that "it is matter of doubt if there be more than two or three species of all the genera of this family existing in the eastern waters which have their analogues in the Western States." Respecting the extremities of this range, the shells of the River Mohawk and its tributaries, appear to be the same with those of the Delaware, Potomac, &c., with the exception of the *Symphynota compressa* LEA and which is also found in the Ohio. "The tributaries of the lakes Erie, Michigan, &c., with few exceptions, produce the western species, and consequently the lakes do also." Lake Champlain which empties into the St. Lawrence contains the *Symphynota alata*, the *Unio occidentis* and the *Unio rectus* with other western species. In the southern extremity of the Alleghany ridge, where the sources of the rivers

are situated in the high lands of the range, the character of the shells of these rivers is completely the same with those of the western waters. In respect to the land shells, this law of distribution does not hold; the species of the eastern side being every where equally common on the western. "If it be demanded," says Mr. LEA, "why the line of demarcation should not be as perfect for terrestrial as fluviatile shells, we might say in answer, that the barrier of a mountain could in time be overcome even by the slowly travelling snail. Surely in the lapse of time, the progeny of those which accidentally began to climb the steeps, might descend into the valleys of the opposite side."

The memoir contains descriptions also of the following new species (and one new genus) of other families, which we enumerate, with their localities: viz.

CONCHÆ.

- Cyrena rotundata*.
Jayensis. Batavia?
Woodiana. Canton.
Aphrodite columba.

COLIMACEA.

- Helix muscarum*. Society Islands.
purpuragula. Java?
ovum-reguli. do.
monodonta. do.
cyclostomopsis.
mamilla.
diaphana.
Himalana. Himalaya Mountains.
vesica.
cincta. Java?
Woodiana. Near Canton.
globula. do.
Helicina lens. Feejee Islands.
pulcherrima. Java.
virginea. do.
Achatina Vanuxemensis. Mexico.
Succinea retusa. Ohio.
Auricula fuscagula. Brazil.
Cyclostoma striata. Peru.

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LYMNEANA.

- Physa elliptica*.
Lymnaea acuta. Near Philadelphia.
exilis. Ohio.
imperialis. South America.

MELANIANA.

- Melania aculeus*. Java?
Melanopsis princeps. Cape of Good Hope.
maculata. Peru.

PERISTOMIANA.

- Paludina bi-monilifera*. Alabama River.
Burroughiana. Island of Lucon.
Georgiana. Hopeton, Georgia.
Ampullaria Hopetonensis. Hopeton, Geor

CANALIFERA.

- Io spinosa*. Holston River, Virginia.

Every species described, is accurately figured rendered as perfect as possible by coloring,—be accused of not placing the reader in a fair opinion of the value of his distinctions, as well descriptions. No one, can peruse the work without that it is one of great labor, of nice discrimination nor without wishing that other lakes and rivers had adian occupants to the author's cabinet, whose family claims are likely to be so well determined.

2. Dr. MORTON'S *Synopsis of the Organic Cretaceous Group of the United States*, (Illustrated 8vo. pp. 88. Philadelphia, 1834.—This volume is a more elaborate view of the valuable work of the named active and acute geologist. The substance of it is communicated to the public, through the medium of the *Annals of the Academy of Natural Sciences* (Vols. XVII, XVIII, XXII, XXIII, and XXIV) in the present undertaking, the author says, that in consequence of several genera of organic remains are now for the first time occurring on this continent, and it will be observed that several species of Testacea have been added to this collection. Vol. XXVII.—No. 2. 48

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CONCHÆ.

- ta.
- s. Batavia?
- na. Canton.
- iba.

COLIMACEA.

- Society Islands.
- da. Java?
- li. do.
- do.
- psis.

Himalaya Mountains.

- va?
- Near Canton.
- do.
- eejee Islands.
- ima. Java.
- do.
- ensis. Mexico.
- Ohio.
- a. Brazil.
- Peru.

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LYMNEANA.

- Physa elliptica.*
- Lymncea acuta.* Near Philadelphia.
- exilis.* Ohio.
- imperialis.* South America.

MELANIANA.

- Melania aculeus.* Java?
- Melanopsis princeps.* Cape of Good Hope.
- maculata.* Peru.

PERISTOMIANA.

- Paludina bi-monilifera.* Alabama River.
- Burroughiana.* Island of Luconia.
- Georgiana.* Hopeton, Georgia.
- Ampullaria Hopetonensis.* Hopeton, Georgia.

CANALIFERA.

- Io spinosa.* Holston River, Virginia.

Every species described, is accurately figured; and the drawings are rendered as perfect as possible by coloring,—that Mr. LEA cannot be accused of not placing the reader in a fair condition to form an opinion of the value of his distinctions, as well as of the truth of his descriptions. No one, can peruse the work without the conviction that it is one of great labor, of nice discrimination and good taste; nor without wishing that other lakes and rivers may send their Naiad occupants to the author's cabinet, where their names and family claims are likely to be so well determined.

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