

Catalogue of recent shells, which occur also fossil in the Miocene deposits in the United States.

Since I enumerated the proportion of recent species in Miocene deposits in the Proceedings of the Academy of Natural Sciences, I have obtained others and identified some more in my cabinet, and every new research in those beds must bring others to light, varying in some slight degree the proportion of living and extinct species.

Bivalves.

1. *Artemis axetabulum*, Con. Florida.
2. *A. elegans*, Con. Florida.
3. *Astarte binadata*, Con. Charleston.
4. *Arca improcera*, Con. Southern coast.
5. *Anomia ephippium*, Lin.
6. *Amphidesma equale*, Say. Southern coast.
7. *Cardita tridentata*, Say. Southern coast.
8. *C. granulata*, Say. Southern coast.
9. *Chama arcinella*, Lam. Southern coast.
10. *Cumingia tellinoides*, Con. Southern coast, Massachusetts.
11. *Cultellus caribaeus*, Southern coast, Massachusetts, New Jersey.
12. *Cytherea elevata*, Con. Gulf of Mexico.
13. *C. Sayana*, Con. Rhode Island, Massachusetts, New Jersey.
14. *Lucina crenulata*, Con. Cape Henry, Virginia.
15. *L. divaricata*, Lam. Atlantic coast.
16. *L. jamaicensis*, Lam. West Indies.
17. *L. trisulcata*, Con. Florida.
18. *L. radula*, Lam. Rhode Island, Massachusetts.
19. *L. squamosa*, Lam. Southern coast.
20. *Macra lateralis*, Say. Atlantic coast.
21. *Nucula acuta*, Con. Florida.
22. *N. proxima*, Say. Atlantic coast.
23. *N. limatula*, Say. Massachusetts.
24. *N. acuta*, Con. Gulf of Mexico.
25. *Pecten concentricus*, Say. Atlantic coast.
26. *Tellina lusoria*, Say. Southern coast.
27. *Venus cancellata*, Lam. Southern coast.
28. *V. mercenaria*, Lin. Atlantic coast.
29. *V. metastrata*, Florida.

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Univalves.

1. *Verithium clavatus*, H. C. Lea. Tampa Bay.
2. *C. dislocatum*, Say. Southern coast.
3. *Dentalium coarctatum*, Lam. Gulf of Mexico; Europe.
4. *D. dentale*, Lin. European coast.
5. *Disposeta rugosa*, (*Calyptraea*,) Brod. South America.
6. *D. corrugata*, (*Calyptraea*,) Brod.; *D. ramosa*, Con. South America.
7. *Crepidula unguiformis*. Atlantic coast.
8. *C. fornicata*? Lam. Atlantic coast.
9. *C. conveca*? Say. Atlantic coast.
10. *Fulgur carica*? Southern coast.
11. *F. canaliculatus*. Atlantic coast.
12. *Natica heros*, Say. Atlantic coast.
13. *N. duplicata*, Say. Atlantic coast.
14. *N. carrena*, Lam. Florida.
15. *Nassa trivittata*, Say. Atlantic coast.
16. *N. obsoleta*, Say. Atlantic coast.
17. *N. lunata*, Say. Atlantic coast.
18. *Oliva litterata*, Lam. Florida.
19. *O. zonalis*, Lam. Florida.

Multivalve.

- Balanus ocularis*. Atlantic coast.

This makes forty nine recent, out of three hundred and forty four species in my cabinet. The percentage of recent forms will not vary, I presume, through future discoveries to any great amount.

ART. IX.—Notices of Fresh Water Shells, &c., of Rockbridge County, Virginia; by T. A. CONRAD.

LAST summer, while on a visit to my friend, Constant W. Newkirk, Esq., in Rockbridge County, Virginia, I paid some attention to the Naïades and univalves of the vicinity. The river here is called the "Calf Pasture," and is a small stream flowing through a mountain gorge. It is a branch of North river, which latter unites with James river near the Blue Mountain chain. It may not be uninteresting to conchologists to learn that

SECOND SERIES, Vol. I, No. 3.—May, 1846. 53

Connor
1846

the second species of *Unio* known to have spines is abundant in these rivers. I collected a great variety of them, and observed some peculiarities that may not be unworthy of notice. I was indebted to muskrats for all the specimens having spines, except some very young shells which I took alive; and thirty or forty occurred in one spot, in company with the very young of *U. lanceolatus*. No where else, after a diligent search, could I find the young of either species. On the muddy shore of the river where muskrats resort, especially about the still water of the dams, I procured many specimens of *Unio collinus*, with spines, which I found to vary in the number and position of these spines; some would have a rather long spine on one valve only, others a spine on each valve; others two short ones on the umbo, ranged in the direction of the shell's length; others with three spines, and some with two ranged in a line from beak to base. One specimen has a spine just below the umbo, and near the base are two thick ones in a line with the shell's length. In very rocky places where the water is rapid I found some living specimens of this species, all destitute of spines, which indeed is the condition of a great majority of the *collinatus*. It is worthy of observation that this spinous character prevails most among the specimens in still water where there is a muddy bottom, and least of all where the water is most rapid. On the rocks live vast numbers of *Anculosa dilatata*, a very variable univalve, and this, with a few specimens of *Melania virginica*, *Ancylus rivularis*, *Planorbis parvus* and *Paludina decisa*, were the only univalves I noticed. The *Unio lanceolatus* is abundant, and may be found alive among the rocks and stones. Great numbers always occur, with the animals eaten out, about the muskrat haunts and holes in the banks. *Unio subplanus*, *Con.*, is not uncommon in similar situations, and *U. constrictus*, *Con.*, is still more abundant. The latter species and *U. purpureus* of Say, are the two species most commonly obtained alive.

It is curious to observe the partiality of the muskrat for particular haunts, as is made evident by heaps of shells, the relics of their mighty repasts. A particular rock near shore, surrounded by water, will be seen covered with shells, and on one side of the rock a deep stratum of them in the mud, while other rocks near, apparently equally well fitted for the festive board, are never furnished with a single shell. I have repeatedly visited one of their favorite rocks in a morning, and collected fine specimens which

had been fished up and the animal eaten over night. But although *Unio collinus* was common among them, and the water was shallow, I was unable to find the living specimens whose haunts seem to be so well known to the Naiad-loving quadruped.

Between the different mountain spurs in this wild region, there are beautiful valleys with level and fertile land. The mountains are quite steep and composed of non-fossiliferous rocks of the carboniferous system, but coal does not occur. Iron ore is excellent and abundant, and within a short distance of Mr. Newkirk's furnace. The climate here is about the same as that of the latitude of Philadelphia, the elevation of the land being equivalent to the difference of latitude. But in these wooded and mountain regions the sudden fall of temperature at night, is often very great, particularly after rain, and therefore ill suited to an invalid's constitution.

The shells of Calf Pasture river are comprised in the following list:—

Bivalves.

Unio collinus, *Con.*
U. purpureus, *Say.*
U. constrictus, *Con.*
U. subplanus, *Con.*
U. lanceolatus, *Lea.*
Alasmodon undulata *Say.*
A. marginata, *Say.*

Anodon cataracta, *Say.*

A. marginata? *Say.*

Univalves.

Planorbis parvus, *Say.*
Ancylus rivularis, *Say.*
Paludina decisa, *Say.*
Anculosa dilatata, *Con.*
Melania virginica, *Say.*

ART. X.—On the detection of Spirally dotted, or Scalariform Ducts, and other vegetable tissues in Anthracite Coal; by Prof. J. W. BAILEY, of the U. S. Military Academy.

ON perusing in this Journal (p. 124, present volume) an account of the results obtained by Schultz and Ehrenberg in the microscopic examination of coal decarbonized by means of nitric acid and heat, I felt a desire to repeat the experiments and obtain if possible some of those "white splinters" which they found "composed of aggregated siliceous cells arranged in regular succession, of the structure of the prosenchymatous cells of wood." But just as I was about to commence the repetition of these experiments, it occurred to me that I might find the decarbonization in every stage of progress, among the masses of some par-