chabasie, calcareous spar, analcime, laumonite, mesotype, stilbite, smoky quartz, chalcedony, agate, beryl, specular iron, &c. &c. which both for size and finish, may well be placed among the beauties of our cabinets.

We have not space or time, to give an analysis of this able memoir, and it is rendered unnecessary by the account of the principal facts already given in a preceding volume of this Journal. It is our object in this notice to direct the attention both of scientific and of practical men, not only to the memoir but to the country which it describes. With the increasing facilities of communication, (which however cannot quite conquer time, space and the elements) a voyage from Boston to Nova Scotia may become a favorite and improving excursion, for a few of the weeks of summer.

9. Conchology.—Mr. Lea *on the* Naïades, *in the Transactions of the American Philosophical Society.*—The mollusca of our seaboard have hitherto attracted little attention, except for purposes of food. We never see their dwellings employed as articles of fancy or decoration, with the exception of the common Scallop, whose unpolished exterior must first be concealed by a coating of varnish and a border of gilding, before it is thought fit to enter into the construction of a card-rack. Even the conchologist is forced to summon both his philosophy and patriotism, ere he can admit the pale Purpura, the homely Venus, and the uncolored Pecten to take their respective places in his cabinet by the side of their gaudy congeners from foreign seas. But if our marine shells are limited to a comparatively small number of species, and are, for the greater part, uninteresting in their forms and colors, it is far otherwise with the shelly inhabitants of our inland seas, and fresh water rivers, where the family of the Naïades revel in a profusion and beauty unsurpassed in the known world. So remarkable are these shells for the variety of their tints, and the delicacy of their markings as well as for their dimensions, that they attract the curiosity of the uneducated in the regions where they occur, and may often be found among the ornaments of the rude cabin upon the banks of the Ohio, as well as upon the mantel-pieces of the rich in the larger towns and villages of the west; while, what is more important, they have in numerous instances been the occasion of awakening a taste for conchology, and have become the basis of scientific collections in natural history.

The first persons who occupied themselves with the scientific examination of this family, were Messrs. Barnes and Say; the results of whose labors, especially those of the former, are contained in the pages of this Journal. Mr. Say still continues to devote his attention to the Uniones, as appears from the numbers of the American Conchology, published at New Harmony. Dr. Hildreth, of Marietta, has also contributed his share towards the elucidation of the Naïades. But the papers of Mr. Isaac Lea, in the Transactions of the American Philosophical Society, stand pre-eminent among all the labors of this kind, both for extent and nicety of discrimination. This gentleman has explored, in person, their localities, and has had the good fortune to receive, from time to time, the most abundant supplies of them from his friends, resident at the west; so that his cabinet, as all can testify who have examined it, illustrates the different species in a high degree of completeness,—containing individuals of all ages, and from distant localities, and those which exhibit, also, the various accidents under which they are liable to occur. Nor have his examinations been confined to the mere shells and dead animals: he has preserved the same individuals alive under his eye for months, and the observations he records concerning their habits and anatomy, are extremely interesting and original.

The number of species put forth by Mr. Lea, as new, is so great, as at first to excite the suspicion, that many of them must eventually prove mere varieties of one another, or of older species; but whoever will carefully peruse his memoirs, and much more, examine his cabinet, will be satisfied that the grounds of his distinctions are at least as stable as those of the most distinguished writers upon these, confessedly, most difficult genera in which, says Lamarck, "*les espèces se nuancent et se fondent les unes dans les autres, dans le cours de leurs variations.*"

We shall now glance at the most important contents of Mr. Lea's several papers; commencing with his view of the genus Unio, so far as our own country is concerned. The first column exhibits the nomenclature of the species as proposed by him for general adoption, the second the species described by other writers which are either the same or varieties, and consequently synonyms.

1. U. radiatus, Gmelin.	1. radiata, Lam. 2. virginiana, Lam. 3. radiatus, Barnes.
2. U. complanatus, Soland. MSS.	
3. U. ovatus, Say.	
4. U. cariosus, Say.	
5. U. nasutus, Say.	
6. U. cylindricus, Say.	
7. U. subtentus, Say.	
8. U. undulatus, Barnes.	
9. U. plicatus, Le Sueur.	
10. U. rectus, Lam.	
11. U. torsus, Rafinesque.	
12. U. mytiloïdes, Rafin.	
13. U. metanever, Rafin.	
14. U. scalenius, Rafin.	
15. U. cornutus, Barnes.	
16. U. verrucosus, Barnes.	
17. U. tuberculatus, Barnes.	
18. U. gibbosus, Barnes.	
19. U. cuneatus, Barnes.	

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ially those of the former, are contained in the
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ing with his view of the genus Unio, so far
cerned. The first column exhibits the no-
s proposed by him for general adoption, the
ed by other writers which are either the
sequently synonyms.

n.

1. radiata, Lam.
2. virginiana, Lam.
3. radiatus, Barnes.

2. U. complanatus, Soland. MSS.
   - purpureus, Say.
   - rarisulcata, Lam.
   - coarctata, Lam.
   - purpurascens, Lam.
   - rhombula, Lam. var. *b.*
   - carinifera, Lam.
   - georgina, Lam.
   - sulcidens, Lam.
   - caroliniana, Bosc.
   - fluviatilis, Green.
3. U. ovatus, Say.
   - ovata, Lam.
   - ovata, Valenciennes.
4. U. cariosus, Say.
   - luteola, Lam.
   - cariosa, Lam.
   - crassus, (old) Say.
   - carinatus, (rayed) Barnes.
   - ellipticus, (young) Barnes.
5. U. nasutus, Say.
   - rostrata, Valen.
6. U. cylindricus, Say.
   - naviformis, Lam.
   - naviformis, Valen.
7. U. subtentus, Say.
8. U. undulatus, Barnes.
9. U. plicatus, Le Sueur.
   - crassidens? Lam.
   - peruvianus, Lam.
   - rariplicata, Lam.
   - crassus, Barnes.
   - undulata, Valen.
   - dombeyana, Valen.
10. U. rectus, Lam.
    - prælongus, Barnes.
    - nasuta, Lam.
    - purpurata, ? Lam.
    - recta, Valen.
11. U. torsus, Rafinesque.
12. U. mytiloïdes, Rafin.
    - undatus, Barnes.
13. U. metanever, Rafin.
    - nodosus, Barnes.
    - rugosus (flat), Barnes.
14. U. scalenius, Rafin.
15. U. cornutus, Barnes.
16. U. verrucosus, Barnes.
    - verrucosa, Valen.
    - tuberculosa, Valen.
17. U. tuberculatus, Barnes.
18. U. gibbosus, Barnes.
    - mucronatus, Barnes.
19. U. cuneatus, Barnes.

20. U. ventricosus, Barnes.
21. U. siliquoïdeus, Barnes. inflatus, Barnes.
22. U. triangularis, Barnes.

The following are the American species added by Mr. Lea: viz. 23. U. parvus, 24. U. æsopus, 25. U. calceolus, 26. U. lanceolatus, 27. U. donaciformis, 28. U. ellipsis, 29. U. irroratus, 30. lacrymosus, 31. U. ater, 32. U. rubiginosus, 33. U. heterodon, 34. U. sulcatus, 35. U. planulatus, 36. U. circulus, 37. U. multiradiatus, 38. U. occidens, 39. U. securis, 40. U. iris, 41. U. zig-zag, 42. U. patulus, 43. U. trapezoïdes, 44. U. multiplicatus, 45. U. asperrimus, 46. U. congaræus, 47. U. oriens, 48. U. brevidens, 49. U. pustulosus, 50. U. stapes, 51. U. pustulatus, 52. U. lens, 53. U. anodontoïdes, 54. U. glans, 55. U. elegans, 56. U. ebenus, 57. U. asper, 58. U. fabalis, 59. U. soleniformis, 60. U. acutissimus, 61. U. varicosus, 62. U. castaneus, 63. U. multistriatus, 64. U. decisus, 65. U. obesus, 66. U. pyramidatus, 67. U. trigonus, 68. U. formosus, 69. U. perplexus, 70. U. angustatus, 71. U. arcæformis, 72. U. subrotundus, 73. U. subovatus, 74. U. pileus.

Mr. Lea's new genus Symphynota, we announced in Vol. XVI, p. 378 of this work: here follows the nomenclature of that genus so far as it is contained in his published papers.

1. S. lævissima.
2. S. bi-alata, Local. Canton.
3. S. alata, { Unio alatus, Say and Barnes. / —— alata, Lam. and Swainson.
4. S. complanata, Alasmodonta complanata, Barnes.
5. S. compressa.
6. S. gracilis, { Unio gracilis, Barnes. / —— fragilis, Swainson. / —— planus, Barnes.
7. S. tenuissima.
8. S. ochracea, Unio ochraceus, Say.
9. S. cygnea, { Mytilus cygneus, Lin. / Anodonta cygnea, Lam. } { Local. / Europe.
10. S. bi-lineata, Local. Hindostan.
11. S. inflata.

Mr. Lea has figured all his species of American Uniones, together with two foreign species of the same genus, (the one from India and the other probably from Africa,) which he proposes as new, under the names of *incurvus* and *olivarius;* also, his six newly described

Miscell

species of Symphynota; and his
and figures of four new species of
tuberculata and *acuta;* of one speci
liniensis; of two species of Carocolla
of one species of Valvata, named
also, the *Fusus fluvialis* of Say as
the Canalifera are universally pelagi
species, and therefore falls within th
fusiformis,—accompanying his desc

With respect to Mr. Lea's distrib
genera Unio and Symphynota,—t
former being *valves free*, and for the
to us a real improvement, and one
of all conchologists; since it banish
in a natural and convenient manner
family. Certain it is, that the diagn
Iridina, Alasmodonta, Hyria and Di
many instances wholly impracticable
observations upon the insufficiency o
Naïades the grounds of division into

"The hinges in the species of the
away so completely into each other,
ing it is entirely impossible for any
unvarying character to most of them.

"If we examine the *Anodonta cyg*
under the beak and ligament to be an
dina nilotica, (Sowerby) this line is
point of the beak. In the *Anodon*
this interruption more distinctly mark
and more curved, evidently forming
proaches very closely to the *Alasmodo*
with it a natural link. The next in th
modonta rugosa, (Barnes,) which has
that which follows very closely is th
has the lateral tooth very slightly mo
In the *Symphynota compressa*, (Nob.)
and extended, forming a moderately
of the genus *Unio*. The well known
Lin.) presents us with cardinal and l
In this genus, the *Unio*, we have an inf
teeth. In the *Symphynota alata*, (Nol

ıes.
nes. inflatus, Barnes.
ıes.
merican species added by Mr. Lea: viz.
opus, 25. U. calceolus, 26. U. lanceo-
28. U. ellipsis, 29. U. irroratus, 30. la-
2. U. rubiginosus, 33. U. heterodon, 34.
atus, 36. U. circulus, 37. U. multiradia-
U. securis, 40. U. iris, 41. U. zig-zag,
ıezoïdes, 44. U. multiplicatus, 45. U. as-
ıs, 47. U. oriens, 48. U. brevidens, 49.
:s, 51. U. pustulatus, 52. U. lens, 53. U.
, 55. U. elegans, 56. U. ebenus, 57. U.
U. soleniformis, 60. U. acutissimus, 61.
ıeus, 63. U. multistriatus, 64. U. decisus,
amidatus, 67. U. trigonus, 68. U. formo-
). U. angustatus, 71. U. arcæformis, 72.
bovatus, 74. U. pileus.
ymphynota, we announced in Vol. XVI,
follows the nomenclature of that genus so
published papers.

Local. Canton.
Jnio alatus, Say and Barnes.
—— alata, Lam. and Swainson.
ılasmodonta complanata, Barnes.

Jnio gracilis, Barnes.
—— fragilis, Swainson.
—— planus, Barnes.

Jnio ochraceus, Say.
Mytilus cygneus, Lin. } Local.
Anodonta cygnea, Lam. } Europe.
Local. Hindostan.

his species of American Uniones, together
the same genus, (the one from India and
frica,) which he proposes as new, under
d *olivarius;* also, his six newly described

species of Symphynota; and his last memoir contains descriptions and figures of four new species of Melania: viz. *elongata, subularis, tuberculata* and *acuta;* of one species of Helix, which he calls *Caroliniensis;* of two species of Carocolla: viz. *helicoïdes* and *spinosa*, and of one species of Valvata, named by him, *arenifera.* He proposes also, the *Fusus fluvialis* of Say as a new genus; for the reason that the Canalifera are universally pelagian shells, while this is a fluviatile species, and therefore falls within the Melaniana. He calls it the *Io fusiformis*,—accompanying his description of it with figures.

With respect to Mr. Lea's distribution of the Naïades into the two genera Unio and Symphynota,—the distinctive character for the former being *valves free*, and for the latter, *valves connate*,—it appears to us a real improvement, and one for which he deserves the thanks of all conchologists; since it banishes several genera, and provides in a natural and convenient manner for the disposition of the whole family. Certain it is, that the diagnosis of the old genera Anodonta, Iridina, Alasmodonta, Hyria and Dipsas was too difficult, if not in many instances wholly impracticable. We shall quote Mr. Lea's observations upon the insufficiency of the teeth to furnish among the Naïades the grounds of division into genera.

"The hinges in the species of the different genera glide or shade away so completely into each other, that I have no hesitation in saying it is entirely impossible for any naturalist to mark out a line of unvarying character to most of them."

"If we examine the *Anodonta cygnea*, (Lam.) we find the margin under the beak and ligament to be an uninterrupted line. In the *Iridina nilotica*, (Sowerby) this line is slightly interrupted under the point of the beak. In the *Anodon arcolatus*, (Swainson) we have this interruption more distinctly marked, the elevations being larger and more curved, evidently forming an incipient tooth, which approaches very closely to the *Alasmodonta marginata*, (Say,) and forms with it a natural link. The next in the chain appears to be the *Alasmodonta rugosa*, (Barnes,) which has an incipient lateral tooth; and that which follows very closely is the *Unio calceolus*, (Nob.) which has the lateral tooth very slightly more defined than the preceding. In the *Symphynota compressa*, (Nob.) we have the tooth more perfect and extended, forming a moderately well characterized lateral tooth of the genus *Unio.* The well known *Unio pictorum* (Mya pictorum, Lin.) presents us with cardinal and lateral teeth completely formed. In this genus, the *Unio*, we have an infinite variety in the forms of the teeth. In the *Symphynota alata*, (Nob.) the cardinal and lateral teeth

are compressed in most specimens; and the next change we find, is in the *Hyria avicularis*, (Lam.) in which the cardinal tooth is somewhat lamellar and forms nearly a line with the lateral tooth. The next 'nuance' is in the *Symphynota lævissima*, (Nob.) which possesses lamelliform cardinal and lateral teeth forming nearly a complete arc. Then follows the *Symphynota bi-alata*, (Nob.) the uninterrupted curved tooth of which is little more than an elevated line under the ligament and beaks. As far as one may be able to judge from a bad description and very bad drawing, the *Dipsas plicatus*, (Leach,) may be with propriety placed at the end of this suite."

Mr. Lea's critical examination of Lamarck's species of the genus Unio constitutes a valuable part of the introduction to his paper, read before the Philosophical Society, March 6th, 1829; and we extract the substance of it for the satisfaction of those persons who may ever have exercised themselves with the determination of Uniones by the aid of Lamarck.

1. U. sinuata, Lam.	Alasmodonta margaritifera. Say. Mya margaritifera. Lin.
2. U. elongata, Lam.	There can scarcely be a doubt but that it is a young shell of No. 1.
3. U. crassidens, Lam.	Consists of the *ponderous* varieties of several species.
4. U. peruviana, Lam.	Embraces the *plicata* of Le Sueur, the *crassus* and *undulatus*, of Barnes, the *rariplicata* and *crassidens* of Lam. and the *undulata* and *dombeyana* of Valenciennes. Le Sueur's name must take the precedence. Its habitat is probably the U. States, and not Peru.
5. U. rariplicata, Lam.	A variety of No. 4.
6. U. purpurata, Lam.	Answering in every respect to the *recta*, but in habitat.
7. U. ligamentina, Lam. 8. U. obliqua, Lam. 9. U. retusa, Lam.	Descriptions too imperfect to admit of their being identified with any of our individuals; although they are all from this country.
10. U. rarisulcata, Lam. 11. U. coarctata, Lam. 12. U. purpurascens, Lam.	Mere varieties of the *complanatus*.

13. U. radiata, Lam.	Lan Gme syno thes *radi* distin there *radi*
14. U. brevialis, Lam.	Rese is lar It is,
15. U. rhombula, Lam. 16. U. carinifera, Lam. 17. U. georgina, Lam.	Vari
18. U. clava, Lam.	Cann our s
19. U. recta, Lam.	The The shoul
20. U. naviformis, Lam.	U. *cy* ously there
21. U. glabrata, Lam.	A var ably.
22. U. nasuta, Lam.	Eithe *gibbo*
23. U. ovata, Lam.	The *c*
24. U. rotundata, Lam.	The *c*
25. U. littoralis, described by Drapa	the *margaritifera*, b
26. U. semirugata, Lam.	Canno
27. U. nana, Lam.	Habit
28. U. alata, Lam.	*Alatus* *alata*,
29. U. delodonta, Lam.	Descri
30. U. sulcidens, Lam.	A vari
31. U. rostrata, Lam.	The sp Europ *pictor*
32. U. pictorum, Lam.	Mya p
33. U. batava, Lam.	The sp Europ ties of

13. U. radiata, Lam. — Lamarck gives the *Mya radiata* of Gmelin and U. *ochraceus* of Say as synonyms to this species. But, these are perfectly distinct. The *radiatus* of Barnes after Lam. is distinct from Say's *ochraceus*, and there is no doubt but that the M. *radiata*, G. differs from both.

14. U. brevialis, Lam. — Resembles the *circulus* of Ohio, but is larger, less round and radiated. It is, no doubt, a distinct species.

15. U. rhombula, Lam.
16. U. carinifera, Lam.
17. U. georgina, Lam. — Varieties of the *complanatus*.

18. U. clava, Lam. — Cannot be identified with any of our shells.

19. U. recta, Lam. — The same as Barnes's *prælongus*. The *recta* being described first, should be retained.

20. U. naviformis, Lam. — U. *cylindricus* of Say, and previously described: the *naviformis*, therefore, cannot stand.

21. U. glabrata, Lam. — A variety of the *cariosus* most probably.

22. U. nasuta, Lam. — Either the *recta* of Lam. or the *gibbosus* of Barnes.

23. U. ovata, Lam. — The *ovatus* of Say.

24. U. rotundata, Lam. — The *circulus* of Lea.

25. U. littoralis, described by Draparnaud, who says it resembles the *margaritifera*, but is much smaller.

26. U. semirugata, Lam. — Cannot be identified.

27. U. nana, Lam. — Habitat is Franche Comté.

28. U. alata, Lam. — *Alatus* of Say and *Symphynota alata*, of Lea.

29. U. delodonta, Lam. — Description too short.

30. U. sulcidens, Lam. — A variety of *complanatus*.

31. U. rostrata, Lam. — The specimens sent Mr. Lea from Europe, are only varieties of the *pictorum*.

32. U. pictorum, Lam. — Mya pictorum, Lin.

33. U. batava, Lam. — The specimens sent Mr. Lea from Europe, appear to be only varieties of the *pictorum*.

34. U. corrugata, Lam.	Undoubtedly distinct.
35. U. nodulosa, Lam.	Possibly the young *Alasmodonta undulata* of Say.
36. U. varicosa, Lam.	Resembles the *A. undulata*, Say.
37. U. granosa, Lam.	A distinct species.
38. U. depressa, Lam.	" Do.
39. U. virginiana, Lam.	*radiatus* of Barnes.
40. U. luteola, Lam.	A variety of Say's *cariosus*.
41. U. marginalis, Lam.	Distinct.
42. U. angusta, Lam.	A variety of *pictorum*.
43. U. manca, Lam.	It may be a distinct species, but resembles a variety of *pictorum*.
44. U. cariosa, Lam.	The *cariosus* of Say.
45. U. spuria, Lam.	Cannot be identified with any of ours.
46. U. australis, Lam.	Cannot be identified with any American shell.
47. U. anodontina, Lam.	Probably the *Anodonta undulata* of Say.
48. U. suborbiculata, Lam.	Cannot be identified.

Mr. Lea concludes his review of Lamarck's genus with the following candid remarks respecting the reputation of that conchologist.

"In passing criticisms upon the species of the genus Unio, of this great naturalist, I do not in the least wish to detract from his great and merited fame. My object is expressly to endeavor to facilitate the study of this interesting genus, and to remove as far as I have it in my power, the confusion which has crept into it. My observations, I wish to pass only for what they may prove to be worth."

With respect to Mr. Lea's observations on the structure and habits of the animals which construct these shells, we find his remarks upon the anatomy of the Unio irroratus (Lea,) the most deserving of attention. He has been the first observer of any anatomical difference among the Naïades. The peculiarity relates to the form and position of the oviducts; and is one which is obviously indispensable to suit the construction of the shell. It is an adaptation of the utmost felicity; and would seem to be the result only, of a most intricate geometrical calculation.

In relation to the food of the Naïades he remarks in his last paper as follows:

"I have in vain attempted to satisfy m
food. Dissatisfied with the results of th
volume third, I procured, among other s
the valves of which were much more g
specimens of various species were place
tom of which was placed clean white sa
might be somewhat imitated. In this ve
ral position by pushing the sand behind t
thus forming a pit into which the base o
ligament taking the most elevated situ
soon began to travel round the vessel, a
for some days, when it ceased entirely.

"Their extreme timidity or apprehen
ger was very evident. At first, the slig
of the vessel caused them to close th
almost daily disturbed, this alarm after a
my fine *cariosus*, which now suffered e
without closing the valves, stretching
tentacula from the borders of its mantle
of its edges, two openings, one below th

"From the superior of these opening
could be plainly perceived for two inch
surface. Being very anxious to ascertai
necessary to supply this stream was ear
ed it, after many experiments, to pass in
it passed out by the superior one had al
eration was unremitted while the wa
changed for some days, this current inv
correctness of my former idea, as to th
on animalcula, from the circumstance
water to exist only while fresh, and nev
ble even with a microscope of great po
ments by passing pieces of bread, ver
between the tentacula. Several of ther
some minutes within the mantle, and s
but they were in every case in a very
rapid and sudden jet of water to the op

"These experiments were frequently
a year upon the same specimen, and the
No food introduced into the shell could
ed; it may therefore be pretty safely c
cula, nor food in a more solid state are
of the *Naiades*. What then are we to

n. Undoubtedly distinct.
Possibly the young *Alasmodonta undulata* of Say.
Resembles the *A. undulata*, Say.
A distinct species.
" Do.
n. *radiatus* of Barnes.
A variety of Say's *cariosus*.
m. Distinct.
A variety of *pictorum*.
It may be a distinct species, but resembles a variety of *pictorum*.
The *cariosus* of Say.
Cannot be identified with any of ours.
Cannot be identified with any American shell.
um. Probably the *Anodonta undulata* of Say.
Lam. Cannot be identified.

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"I have in vain attempted to satisfy myself as to the nature of their food. Dissatisfied with the results of the observations mentioned in volume third, I procured, among other species, a fine *Unio cariosus*, the valves of which were much more gaping than usual. Selected specimens of various species were placed in a glass vase, in the bottom of which was placed clean white sand, so that their natural beds might be somewhat imitated. In this vessel they assumed their natural position by pushing the sand behind them with the protruded foot, thus forming a pit into which the base of the shell gradually fell, the ligament taking the most elevated situation. In this position, they soon began to travel round the vessel, and this locomotion continued for some days, when it ceased entirely.

"Their extreme timidity or apprehension on the approach of danger was very evident. At first, the slightest agitation, or movement of the vessel caused them to close their valves instantly. Being almost daily disturbed, this alarm after a time ceased, particularly with my fine *cariosus*, which now suffered even the agitation of the water without closing the valves, stretching out its fine dark and beautiful tentacula from the borders of its mantle, and forming by the contact of its edges, two openings, one below the other.

"From the superior of these openings, the constant stream ejected could be plainly perceived for two inches, elevating the water at its surface. Being very anxious to ascertain through what part the water necessary to supply this stream was carried into the shell, I discovered it, after many experiments, to pass in by the inferior opening; that it passed out by the superior one had always been evident. This operation was unremitted while the water was fresh; when left unchanged for some days, this current invariably ceased. Doubting the correctness of my former idea, as to the probability of their feeding on animalcula, from the circumstance of finding the passage of the water to exist only while fresh, and never when animalcula were visible even with a microscope of great power, I instituted some experiments by passing pieces of bread, very small pieces of worms, &c. between the tentacula. Several of them would sometimes remain for some minutes within the mantle, and so far within as to be invisible, but they were in every case in a very short time thrown out with a rapid and sudden jet of water to the opposite side of the vessel.

"These experiments were frequently repeated during the course of a year upon the same specimen, and the result was uniformly the same. No food introduced into the shell could be ascertained to have remained; it may therefore be pretty safely concluded, that neither animalcula, nor food in a more solid state are necessary to the nourishment of the *Naïades*. What then are we to conclude it to be? would the

decomposition of water serve the purpose of nourishment as well as breathing? Certain it is, that during the many years I have been in the habit of almost constantly having them alive for examination, dissection, &c. I have never in any instance given them food, unless it was conveyed invisibly to them in the pure water with which our city is supplied, through our works from the river, and which was given them every few days."—Vol. IV, p. 75.

We have not yet remarked upon the descriptions of the species, and the manner in which they are figured. Here, if we are not much deceived, Mr. Lea will be acknowledged to have succeeded in the happiest manner. His language enables the conchologist to form a definite idea of what he would include within his species; and the remarks which are appended to the general descriptions are well adapted to enlighten the student in the determination of difficult individuals; while his figures may be said to be executed *à merveilles*. They certainly surpass every thing of the kind yet done in the United States, and fairly rival similar works of foreign production. And we have only to say in conclusion, we know not which, the society whose transactions they adorn, have most reason to congratulate themselves upon,—the science, or the taste of Mr. Lea's contributions.

10. *A Manual of the Ornithology of the United States and Canada. By Thomas Nuttall, A. M. F. L. S. Cambridge. Hilliard & Brown. pp.* 682.—"After so many excellent works have appeared," says the author, "on the birds of the United States, it may almost appear presumptuous, at present, to attempt any addition to the list. A compendious and scientific treatise on the subject, at a price so reasonable as to permit it to find a place in the hands of general readers, seemed, however, still a desideratum; and to supply this defect, has been a principal object with the author of the present publication."

We rejoice once more to hear from the accomplished naturalist whose name appears in connexion with the above mentioned work. Mr. Nuttall is well known to have been an ardent admirer of the feathered tribes for these twenty years; the greater part of which period he may be said, literally, to have passed in their society. His habits of observation, as well as powers of description, were well suited to the task he has performed, as all will readily acknowledge who peruse the work. And appearing as it has, before the arrival of our native birds from their winter retreats, we venture to predict

for them a heartier welcome the present
experienced before among the hills and v

His introductory chapter, which consi
pages, describes the anatomy of birds—
obtaining it—their senses and instincts—
imitating sounds—their conjugal affect
graphical limits; and is rich with instruc
eral reader. We cannot refrain from q
of this essay.

"Of all the classes of animals by whic
ample field of nature, there are none m
pearance and habits than the feathered i
play around us like fairy spirits, elude ap
defies our pursuit, soar out of sight in the
our heads in marshalled ranks, dart like
summer, or seeking the solitary recesses
they glide before us like beings of fanc
landscape with the most lively motion and
come and go with the change of the seas
directed by an uncontrollable instinct of
be considered as concomitant with the
scene. With what grateful sensations d
arrival of these faithful messengers of sp
lapse of the dreary winter, which compel
more favored climes. Their songs now hea
shadowy forests, inspire delight, or recoll
in every breast. How volatile, how play
cal and happy, are these roving sylphs of
earth, and the waters, are almost alike
spent in boundless action; and nature, w
lence, has assisted and formed them for thi
petual life and vigor, in an element almost

The descriptions of the birds are reple
tion, conveyed in the most animating an
work is illustrated by a large number of
We think that it will prove to be a favorit
isfied that it possesses strong claims to pul

11. *Statistics of Iron in the United S*
article Iron in the Encyclopædia Americ
statement therein made, respecting the a