JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

VOL. V....PART I.

PHILADELPHIA:
PRINTED FOR THE SOCIETY,
BY J. HARDING.

1825

CONTENTS OF VOLUME V. PART I.

JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

LIST OF OFFICERS FOR THE YEAR 1825.

President.

William Maclure.

Vice Presidents.

Zaccheus Collins, George Ord.

Corresponding Secretary.

Reuben Haines.

Recording Secretary.

William H. Keating.

Treasurer.

Jacob Gilliams.

Librarian.

Jacob Peirce.

Curators.

Thomas Say, C. A. Lesueur, John P. Wetherill, Isaac Hays, M. D.

Auditors.

John M. Brewer, Samuel G. Morton, M. D. Judah Dobson.

Committee of Publication.

Thomas Say.
Isaac Hays, M. D.
Isaac Lea.
R. E. Griffith, M. D.
William H. Keating.

Description of a number of new American Species of SPHÆRIÆ. *By Lewis D. de Schweinitz. Read February* 15, 1825.

The following pages include the description of a number of new American species of SPHÆRIÆ, a genus of the order PYRENOMYCETES, of the class GASTEROMYCETES, of Fungi, arranged according to the system of Dr. Elias Fries, and is supplementary to my Synopsis of Carolinian Fungi, published in the Commentaries of the society of Naturalists at Leipzig, by Dr. Schwægrichen.

Of 528 species of this most comprehensive genus described in Fries' abridgment, 330 have been observed by me in America, and a large proportion of the residue will yet, doubtless, be found. The new species, exclusive of what Fries has incorporated, amounts to 112. The whole number of American Fungi which I have hitherto observed, falls little short of 2000, and I am fully persuaded as many more remain undiscovered. Our immense forests, humid climate, and variety of higher ranking vegetable productions, may well warrant this conclusion.

It is also worthy of remark that, of the number of truly geogenous Fungi, or those not usually deemed parasitic, because they proceed directly from the soil, (for no Fungus has ever been found on rocks, or perhaps on soil wholly free from vegetable matter,) very few comparatively are met with *peculiar* to America; as for instance, in the genera AGARICUS, BOLETUS.

HYDNUM, &c. and the same as far as we know, applies even to tropical climates, regarding their fungous productions, amounting indeed to little more than the fact that the parasitic fungous forms are commensurate with the immense variety of species of higher grades.

Considering this as a supplement to the Synopsis of North Carolina *Fungi*, I shall enumerate the European species I have here met with *since*, with such observations as may be necessary, besides describing the new species; and propose to continue this catalogue through the whole genus at a future time.

SPHÆRIA.

§ I. *Cordyceps.*

a. Series. Hypocrea.

1. S. *geoglossum*. L. V. S. Of a fleshy substance, very much like that of GEOGLOSSUM, whitish internally, very black externally: *capitulum* or *clavula*, tongue-shaped, compressed and canaliculate in the middle, with an obtuse subfalcate apex, and densely covered by very small, oblong, crowded sphærulæ, immersed in the substance, but prominent to a perceptible degree on the black surface, with small, and scarcely prominent ostiola: *stipes* nearly thrice the length of the clavula, somewhat squamulose and hirsute, of the same colour with the clavula, fleshy, fibrously dividing, and white within; the whole plant about one inch long, and very slender. It differs materially from S. *ophioglossoides*, by its tender and

brittle substance, slender shape, and total absence of yellow colour inside.

Pl. I, fig. 4, *a*, with magnified analysis of *b*, and *c*, section.

Found at New York, and communicated to me by Dr. Torrey. It almost exactly resembles a GEOGLOSSUM, (especially G. *hirsutum*) but the capitulum is manifestly sphæriferous.

2. S. *capitata*. Fries, p. ii. p. 324. I found this rare fungus at Salem, on vegetable earth, and more certainly without a tuber, much less growing on the SCLERODERMA *cervinum*, hitherto vainly sought by me in America.

3. S. *mucronata*, L. V. S. Synops. Fung. Carol. p. 2. Fries, p. 326. I insert this species, found by me very rarely on Liriodendron roots in Carolina, although sufficiently described in the Synopsis, in order to give a good figure, because I have not met with it since, and have communicated my only good specimen to Dr. Schwægrichen, merely preserving the drawing.

Pl. I, fig. 1, natural size; *a*, with analysis; *b*. magnified piece of clavula; *c*, section magnified.

b. Series. Hypoxylon.

4. S. *subterranea*, L. V. S. pl. I, fig. 3, nat. size. analyzed. Caulescent, suberose, undivided and very long, with lengthened, gray, pulverulent, entire apex; colour of the rest, blackish. These stems, of half a foot or more in length, rise from a hirsute, suberose

base, and are very often variously bent, of a suberose texture, and clothed half way up from the base by a thin, brownish-black tomentum; the perithecia are dispersed here and there in the pulverulent part of the stem, and appear rarely. The species is considerably allied to S. *carpophila*, from which its size and place of nativity however easily distinguish it.

In mines and wells, New Jersey. Communicated by Dr. Torrey, often considerably more than six inches in length.

5. S. *flabelliformis*, L. V. S. MERISMA *nigripes*, p. 85, Synops. F. C. ed. Schwægr. Having now completely ascertained that the Fungus described under the above name, is really a SPHÆRIA of the present family, I correct it here, and communicate a figure, pl. I, *f.* 5, *a*, nat. size; *b*, *c*, magnified specimens; *d*, section; *e*, magnified surface of fertile ones. The perithecia are produced in the fertile specimens on the palmately expanded fimbriate summits, of a vivid incarnate colour, which colour remains when in fructification. Fertile specimens, however, have, as is usual in the family, their summits less expanded, sometimes nearly cylindrical, and cease to be pulverulent; the bulb or tuber at base is often proportionably very large, and the stems constantly very thick, in proportion to their length. I have never met with a specimen exceeding half an inch in length.

This species exclusively inhabits decayed branches of very soft kinds of wood, e. g. SALIX, VIBURNUM, &c. in moist woods, Salem, N. C.

§ II. *Poronia.*

6. S. *pocula*, L. V. S. Resembling an inverted PEZIZA, bursting fasciculately from beneath the epidermis, showing 2—4 pedicillate, pendulous cupulas in a bunch, the margin of the cupula bent in and thick, the disk flat and pruinose; colour of the whole fungus white, tinged with brown; size of each cupula about one or two lines. The perithecia are small, oblong, lutescent, crowded in a single tier (monosticha,) totally immersed in the pulverulently pruinose disk, with black and scarcely prominent ostiola; substance internally suberose, albescent; externally, the cupulæ and proportionably thick stipes into which each is contracted, are somewhat squamose or furfuraceous.

Pl. II, fig. 6, *a*, nat. size; *b*, and *c*, magnified bunches; *d*, section magnified.

A most remarkable species, communicated to me by Dr. Torrey, bursting from beneath the epidermis of *Fraxinus;* it is strictly of this section, and the only one besides the European PORONIA, which I consider genuine. Notwithstanding indefatigable attention, I have never been able to find the S. *punctata* (PORONIA, PEZIZA *punctata, auctor. veter.*) in America. It is not very rare on horse dung in Europe.

The S. *candida*, L. V. S. (Synops. Carol. page 3, n. 20.) is located by Fries as another species of this family. But I am not satisfied that it is correctly arranged, though certainly that species, as well as

S. *intermedia*, L. V. S. to be described below, make an approach towards it. These two forms are evidently intermediate between the present tribe and the next, but may, perhaps, be as well placed here. Still S. *pocula* is undoubtedly genuine.

7. S. *intermedia*, L. V. S. In a younger state, nearly pulvinate, when mature, substipitate and forming a kind of repandly undulate, free cupula, fixed to the inner bark by a very short, thick stipes, plicate on the under side, and grayish black; the upper side or disk forms a pulvinate but flattened and unequal surface, thickly covered with various sized, more or less prominent sphærulæ, of an incarnate brown, and covered with a gray furfuraceous substance, surrounding the perforate ostiola, so as to make these appear impressed. The numerous apothecia, are immersed in the interior brownish-black substance, entirely analogous to that of the next family, the upper brown cortex of which forms the sphærulæ, conspicuous on the upper surface; they are ovate, crowded and communicate with the surface, by short, very thin apertures or ostiola, and form, frequently, more than one tier. This SPHÆRIA grows on the inner bark, surrounded by the stellately bursting epidermis, singly, or in clusters, sometimes assuming an unusual square shape, sometimes more or less rounded, about three lines in diameter, and always free in the margin, only attached by its peculiar stipe. It is a very distinct species.

As before observed, this new species found at Bethlehem on decayed branches of the common wild

plum, is referred to this section with considerable doubt. It is, nevertheless, a good species, and nearly related to S. *candida*, L. V. S.

§ III. *Pulvinatæ.*

8. S. *vernicosa*, L. V. S. Largest of the tribe, being upwards of one inch in height, turbinate towards the top, and suddenly attenuated into a thick stipes, much like the variety *obovata* of S. *concentrica;* outer cortex of the most splendid black colour, and beautifully varnished; the surface of the upper turbinate part is somewhat uneven, as from the subjacent sphærulæ; I have, however, been unable to discover, with a powerful lens, any aperture of the ostiola, which nevertheless must exist, as in proper time, the black pulverulent mass which fills the apothecia, is shed through them most copiously, after the manner of S. *concentrica*, *rubiformis*, and other kindred species; internally, not only the upper turbinate part, but likewise the large stipes is filled by numerous concentric layers of large, densely stipate, narrow apothecia, which appear to be entirely composed of the clear white sacculus, met with in other SPHÆRIAS, but altogether destitute of cortex; they remain undestroyed after the internal powder is shed, when the fungus is entirely white inside; the breadth of the turbinately rounded top is about half an inch.

First called S. *enteroleuca*, by me, which name I now find pre-occupied. A very rare, but unusually large, and extremely distinct species, nearest allied

to S. *concentrica*. On posts of garden fences, near the ground, at Salem, N. C.

Pl. I, fig. 2, and analysis; *a*, nat. size; *b*, section; *c*, the same magn.

9. S. *enteromela*, L. V. S. Ovate, oblongly pulvinate, longitudinally confluent, rubiginosely brown; the outer cortex, which is subsquamose, is not perceptibly granulated by the subjacent sphærulæ, and easily detached so as to lay bare the inner black, but not shining substance, otherwise resembling that of S. *fragiformis*, in which the very small apothecia are immersed, of an almost globular shape, and without prominent ostiola. This SPHÆRIA is about $\frac{1}{4}$ of an inch in its shortest diameter, and often much more in its longer one, and numbers have been found confluent in the rimose bark to the length of one foot; for the rest it is superficially attached, and by no means immersed.

Bursting from the rimose bark of FRAXINUS, in long, confluent series. Rarely found on the Lehigh mountains near Bethlehem, and allied to S. *fragiformis*, but much larger.

10. S. *teres*, L. V. S. Teretely cylindrical, with an obtusely rounded apex, growing singly and entirely superficial; the outer cortex rubiginose, and elevated into not very prominent, but large tuberculose inequalities; the internal substance fuliginously black, somewhat stratified; the apothecia large, not crowded, and protuberant on all sides, immersed in the interior substance. The whole SPHÆRIA about three lines in height, and one in breadth.

Pl. II, fig. 7, *a*, nat. size; *b*, section magn.; *c*, magn. specimen.

Communicated by Z. Collins, Esq. on an indeterminable piece of bark. Though I am in possession of but a single specimen, (besides the one destroyed in the examination) the present appears so distinct, that I cannot hesitate in considering it a good species, nearest related to *rubiginosa*; this latter is rather rare in America, and always inclined to spread widely in the varieties here observed. But even in the European more elevated varieties, I have never seen an individual really pulvinate, much less making an approach towards the unusual cylindric shape of the one under consideration. It is one of the most common species in Lusatia.

11. S. *annulata*, L. V. S. Growing superficially, widely spreading, confluent to an unusual degree, but occasionally single, and then neatly pulvinate, orbiculate; the orbicular, pulvinately elevated shape is at the same time very perceptible in the single cæspitulæ or heaps of confluent SPHÆRIÆS. In the junior state, the colour is ochroleucous, and darkens gradually, until the outer cortex becomes perfectly black, but not shining; it is densely and regularly granulated by the peripherical apothecia prominent in the surface; when come to maturity, each thus elevated perithecium appears horizontally truncate, with a ring-shaped elevation on the margin of the truncature, the centre rises to a somewhat elevated, but still much flattened conical ostiolum perfectly smooth and shining, while the rest of the elevated

sphærula is rather roughened; the internal stroma, in which the numerous peripherical perithecia are immersed in a single tier, of a subglobose shape, and provided with the white internal sacculus or velum, is perfectly black.

The confluent pulvinulæ often occupy 4—6 inches in length and breadth on the bark, each about $\frac{1}{4}$ of an inch in diameter.

Pl. II, fig. 8, *a*, nat. size; *b*, one cæspes magnified; *c*, and *f*, sections; *d*, a single sphærula magn. from above; *e*, in profile.

This species considerably resembles S. *multiformis*, Fr. (S. *rubiformis*, Pers.) but is decidedly distinct; the latter I never found in North Carolina, and here it is not near as frequent as the present species. The remarkable and constant structure of the parts around the ostiola, distinguishes it well, although both species are nearly of the same size, (ours however, the larger) and have the ochroleucous or argillaceous colour of the junior specimens in common; constituting in that state the S. *argillacea* of Persoon. It is found sometimes in very large assemblages on the outer bark of oak, and other logs, and sheds a bluish-black seminal powder in great quantities. The S. *multiformis* more frequently prefer fence rails, posts, &c. deprived of bark.

12. S. *gelatinosa*, Fries I. p. 336. This species I have lately found on Sambucus canadensis, Bethlehem. It is rather too near S. *rufa*.

13. S. *stereorum*, L. V. S. Variously shaped, undulately spreading and somewhat lobed in the

periphery, evidently plicate on the upper surface, and but slightly pulvinate; colour of the upper surface, light brown. In a youthful state it is surrounded by a white evanescent tomentum at base, and of a more elevated but very irregular form; it occurs singly, but generally is longitudinally confluent, and principally attached to the narrow folds into which the Thelephora, on which it grows, is compressed by extraneous impediments, from which it spreads something like a pulpy Collema, over the hymenium chiefly, but sometimes appears in the Pileus likewise. Its texture is not gelatinose, but still softer than that of the rest of the family, except *rufa* and *gelatinosa*. The ostiola of the apothecia are conspicuously prominent on the upper surface, and of a dark brown colour minutely and densely granulating it; the interior substance is perfectly white, suberosely pulverulent; the apothecia are not immersed in this, but only in the proportionably thick outer cortex, and of a globular form; confluent patches sometimes exceed one inch in length and three lines in breadth. Singly growing specimens approach an orbicular form, and are about 1—2 lines in diameter. The species is superficially attached, but rather free in the margin, especially the larger lobed specimens. The powder shed by the apothecia is of a white colour, and pretty abundant.

A very beautiful species nearly related to S. *rufa* and *gelatinosa;* growing on the Hymenium of THELEPHORA, (STEREUM) *fasciata*, L. V. S. and some others. Bethlehem, late in the fall. It is only on account of

its evident affinity to the above two SPHÆRIÆ, that I arrange it in this division; the habit would otherwise induce me to place it among the S. *glebosæ*.

§ IV. *Connatæ*.

14. S. *lactea*, Fries I. p. 337. This species I have found spreading widely on the inner side of decayed bark, surrounding stumps near the ground, and in part on the earth at Bethlehem.

15. S. *coprophila*, Fries I. p. 342. A most beautiful species, found rarely in North Carolina, on wood lying in moist places, and partially covered with cow dung.

16. S. *confluens*, Fries I. p. 342. Not rare at Bethlehem.

17. S. *atramentosa*, Fries I. p. 344. Found at Salem, N. C. and communicated to some friends by the name of S. *cohortina*, L. V. S. It is clearly the species described by Fries; the colour is, however, variable, sometimes very black, and again of an olive brown.

18. S. *hydnicola*, L. V. S. Undulately effigurate, thick, short, and proportionably much elevated, occasionally confluent; external cortex deep black, unequally granulose and elevated into tubercules, as from the subjacent sphærulæ, which are large and distant, immersed in a white stroma, provided with an internal velum or sacculus, of a brown colour; the ostiola are perceptibly prominent; at times where it grows on the larger subuli, these grow together with

the SPHÆRIA into the resemblance of a thick, misshapen pedicel.

Pl. II, fig. 9, *a*, nat. size; *b*, *c*, and *d*, magnified; *e*, section.

Rarely found growing on the long subuli of decayed hydnums, and often so as to penetrate the substance. Nearest related to S. *confluens* and *uda*. Single heaps are about $\frac{1}{8}$ of an inch in diameter.

19. S. *callostroma*, L. V. S. Diffusely spreading in patches of very irregular shapes, some inches in length, consisting at first sight of a great number of contiguously crowded large sphaerulæ, of the size of small shot, which, however, on transverse section, appear evidently connected by a common cortex, thus strongly granulated black, rugose and uneven; each sphaerula is irregularly truncate at summit, and there provided with a slightly elevated, conic, obtuse ostiolum; beneath the outer black cortex, a stroma, coarsely pulverulent and of a bright red ochre colour on all sides, sparingly surrounds the large apothecia, crowded irregularly into more than one tier; their shape is generally oval, with a shining black velum, and they connect with the external ostiola by a very palpable neck or duct.

The species would serve as a fine type of the family.

Pl. II, fig. 10, *a*, nat. size; *b*, *c*, *d*, magn. heaps; *e*, section.

A handsome and distinct species lately found on decayed Corylus in very moist and shady places; it is apt to deceive the observer at first, as if belonging to those simple SPHÆRIÆ which grow gregariously.

Close examination has, however, led me to discover the stroma, even where but two or three sphærulas form the cæspes. Bethlehem.

20. S. *fusco-purpurea*, L. V. S. Widely spreading in variously effigurate fanciful patches, tending, however, always to extend *longitudinally*, mostly with a sterile margin; the outer cortex appears black on transverse section, but its upper surface is of a handsome brownish purple colour, somewhat byssaceously tomentose, on bark very uneven and elevated into variously sized tubercules, all greatly granulated by the subjacent sphærulæ; stroma very scant but shining black, in which the numerous apothecia are crowded into one or more tiers; they are pretty regularly oblong-ovate, and shining black, with a whitish internal velum. The whole SPHÆRIA is proportionably not much elevated, and tinges the subjacent wood or bark, on which it grows perfectly superficially, although inseparable, black.

Pl. II, fig. 11, *a*, nat. size; *b*, nat. size on bark; *c*, magnified, showing the barren margin; *d*, section.

Likewise a very handsome new species, which is more nearly related to S. *rubiginosa*, than S. *atro-purpurea*, with which I confounded it formerly. Not rare both at Salem and here, on soft decaying wood, and on the bark of similar kinds; when on bark it assumes a somewhat different appearance, the sterile margin spreads into more irregular shapes, and the upper surface is much more tuberculous; on wood it is often to a great extent very even and very regularly granulated.

Experiments on Anthracite, Plumbago, &c. *By* Lardner Vanuxem. *Read March* 15, 1825.

These experiments were undertaken with a view to determine whether the globules obtained by Professor Silliman, from the above substances, were owing to a fusion of their carbon, or merely to the impurities or foreign matter contained within them. They were long delayed by my waiting for some sheet zinc necessary to repair a Deflagrator intended to be used for the purpose of obtaining the globules; but this not arriving, I resolved to avail myself of the suggestion of Professor Silliman, namely, that of using the compound blowpipe, which answered perfectly well. In the experiments with the blowpipe, the substances were placed upon platina foil, spread upon a lump of magnesia; the size of the pieces subjected to its action, was about $\frac{1}{2}$ an inch in diameter, and $\frac{1}{4}$ of an inch in thickness. The light in the greater number of instances, was so intense, that I found it necessary to use double green glasses.

The mode pursued in the analysis of Anthracite and Plumbago was as follows. The presence of water was ascertained by heating a few small pieces of the substance in a glass tube, closed at one end; and the quantity of water by heating a given portion in a covered platina crucible. Another portion was pulverized in an agate mortar; then a given weight of it was put into a platina crucible, and kept without

its cover at a red heat in a small French furnace, until the whole of the carbon was consumed; the residue was then boiled in water for an alkali; after which operation it was heated with caustic potash in a silver crucible: when the fusion of the mass was completed, water was added, and the whole then dissolved with nitro-muriatic acid. By evaporating the liquor to dryness, and adding acidulated water and filtering, the silex was obtained. To the liquor from this operation, ammonia in excess was added, and by this agent, the iron, manganese, and alumine contained in the liquor, were precipitated; the latter was separated from the two former by caustic potash. No attempt was made to ascertain the relative proportions of iron and manganese; this knowledge not being considered important. The presence of manganese was evidenced by the green colour of the alkaline fusion; and a rose colour, when acid was added to the liquor. No allowance was made for the difference in the degree of oxidation of the iron and manganese in the substances used, and the products obtained, as the amount was less than one per cent. where most abundant.

The first experiments made with the globules, were with potash, and with carbonate of soda on silver, and on platina foil; with these agents I could not produce much effect, but by using a small quantity of carbonate of lime, carbonate of soda and borax, on platina foil; their fusion, whether they were coloured or colourless, opaque or transparent, was effected in a few minutes.

Experiment 1st. A piece of the purest Anthracite of Lehigh, subjected to the blowpipe, presented numerous small white globules; few were tinged with violet, and two or three were blackish; the globules did not readily unite with one another; however, by long continued heat, some of the globules were obtained of the size of the head of a small pin; the greater number of them were but feebly translucent, and could be broken by a moderate force; others, though few in number, were transparent, hard, and not so brittle. The white globules were not magnetic, except when dark spots were present; the blackish ones were magnetic, and like the whole of them could be fractured by pressure. The surface of the mass whitened, as observed in the ordinary combustion of this coal, and presented veins or layers of the matter of the white globules; showing that the impurities of the coal were not regularly intermixed with its carbon, or, upon the supposition of its being fused carbon, that its production was extremely irregular.

With the flux before mentioned, the different kinds of globules were melted without difficulty. By heating a centigramme and a half of the globules in powder, for a long time, with caustic potash, about $\frac{3}{4}$ of a centigramme of silex was obtained. It manifested itself by its gelatinous appearance before the water was driven off.

The result of the analysis of this Anthracite, was

Carbon,			90.1
Water,*			6.6
Residue by incineration, of a dirty white colour,	3.3 consisting of	Silex,	1.2
		Alumine,	1.1
		Oxides of iron and manganese,	.2
		Loss,	0.8
			100.0

Experiment 2nd. The Anthracite of Rhode Island, by the action of the blowpipe, presented a brownish appearance after cooling, (owing to manganese.) The surface exhibited numerous globules, larger than those of the Lehigh; some of them were transparent, colourless, and very brilliant by reflected light; others, and the most abundant, were black and opaque, and were strongly attracted by the magnet; a few were coloured white and black in spots; the white spots resembling enamel. The surface of the mass presented minute veins similar to those of the Lehigh.

Some of the black globules were heated for a long time on platina foil, with carbonate of soda; the mass was yellowish, but became black when immersed in water. By heating and dipping into water several times, the globules whitened; I could not effect their fusion in this way, but with the compound flux they readily fused. With this flux the different kinds were tried, and with the same effect.

* It is rather singular that so great a quantity of water as is contained in Anthracite, should heretofore have escaped notice. It is my intention to examine all the different kinds of coal, to ascertain if this fact be general.

The analysis of this Anthracite from Rhode Island, gave,

Carbon,			90.03
Water,			4.90
Residue by incineration, which was of a light brick red,	5.07 consisting of	Silex,	2.14
		Oxides of iron and manganese,	2.50
		Loss.	.43
			100.00

Another specimen from the same locality, whose colour was a little different, being of a deeper black, and which was not tried with the blowpipe, gave

Carbon,			77.70
Water,			6.70
Residue by incineration, colour the same as the former.	15.60 consisting of	Silex,	8.50
		Oxides of iron and manganese,	7.10
		Alumine a trace,	
			100.00

Experiment 3d. A specimen of Plumbago from Borrowdale, of great purity, as judged by its external characters and mechanical properties, was subjected to the blowpipe; the globules began to form immediately and in great number, attended occasionally by scintillations, owing to the combustion of iron; the globules were small; the greater part of them were black, opaque, and of great lustre; others were dull, of a brownish colour, and feebly translucent; almost all of them were attracted by the magnet. The surface of the heated part of the Plumbago was brownish.

The globules, though acted upon with great difficulty by soda, and by potash, readily yielded to the compound flux, and formed a limpid yellowish glass.

A large globule, by repeatedly heating it with carbonate of soda, and plunging it into water, became rough, and finally opened in the centre; it then dissolved in nitro-muriatic acid. By evaporating the liquor to dryness, the yellow colour of the iron was very manifest; acidulated water took it up, leaving a white substance like silex, floating in the liquor.

The analysis of this Plumbago gave

Carbon,			88.37
Water,			1.23
Residue by incineration, colour, yellowish brick red,	10.4	consisting of Silex,	5.10
		Alumine,	1.00
		Oxides of iron and manganese,	3.60
		Loss,	70
			100.00

Experiment 4th. An impure specimen of Plumbago from the same locality, gave numerous and large globules; some of the size of small shot; they readily formed; the majority of them were translucent, shining, and of a light greenish-yellow, others were dark coloured; and some of them were dull externally. The dark globules, as well as the surface of the mass of Plumbago exposed to the flame, was attracted by the magnet; some of the light coloured ones were affected by the magnet, but only at the point where they had been attached to their support, owing to particles of the support adhering to them. During the combustion of the Plumbago, there were occasionally, scintillations; the heated surface of the mass was brownish.

A large globule of the lightest colour and magnetic only at one point, melted with ease when the

compound flux was used; it formed a transparent mass when hot, and opaque and milky when cold. The black ones with the same flux were also fused; they were brownish when hot, and greenish when cold. They were acted upon with great difficulty by caustic potash, and by carbonate of soda.

The analysis of this Plumbago gave

Carbon,			61.27
Water,			5.33
Residue by incineration, colour of a dirty yellowish-red.	33.4 consisting of	Silex,	10.10
		Alumine,	3.20
		Oxide of iron and manganese,	20.00
		Loss,	.10
			100.00

Experiment 5th. A specimen of Plumbago remarkably pure, from near Bustletown, Penn. was tried with the blowpipe. The globules were formed with difficulty, probably owing to its foliated texture, the fused parts spreading over the surface. The colour in places was white and translucent, in others so dark as to be almost black.

With the flux before mentioned, the fused matter was reduced to a transparent glass.

The analysis of this Plumbago gave

Carbon,			94.40
Water,			0.60
Residue by incineration, colour light brick red,	5.0 consisting of	Silex,	2.60
		Oxides of iron and manganese,	1.40
		Loss,	1.00
			100.00

Similar experiments were made with Plumbago from several other localities; the results of which

were no wise different, and therefore need no further mention.

Experiment 6th. A piece of charred mahogany, during its combustion by the compound blowpipe, presented numerous small, imperfect globules, owing to the force of the flame, which dissipated their support before they had time to form or to accumulate to any considerable size; many of them adhered together, ramifying like flos feri, which they resembled; they were collected by placing a dish under their support. By the compound flux, they readily fused into a transparent glass.

Experiment 7th. A quantity of lampblack was pressed into a mould with great force, and made to assume the form of a cylinder of about $\frac{3}{4}$ of an inch in diameter, and $\frac{1}{2}$ an inch in thickness; it weighed seven grammes. This cylinder of lampblack was subjected to the blowpipe. It wasted away gradually without forming any globules or fused matter, visible to the naked eye or to the microscope. The heat was equally as intense in this experiment as in all the other instances, and no condition was wanting to produce the same effects, except the difference of composition. After burning the lampblack for as long a time as was thought necessary to make the experiment a fair one, it was again weighed, and found to have lost four grammes, $\frac{42}{100}$, for it weighed but two grammes, $\frac{58}{100}$.

Five grammes of the same lampblack heated in an open platina crucible, left after its incineration, one

centigramme of white ashes, equal to $\frac{1}{300}$ of the mass.

From the analyses of the substances, used by Professor Silliman, from which the globules were obtained, it appears that they all contain foreign matter, as silex, iron, manganese, and some of them also alumine; that when lampblack was used which contained but $\frac{1}{300}$ of fixed impurities, no distinct globule or melted matter was formed; although the heat was sufficiently great, and the combustion slow enough to admit of the forming of globules, if their production was owing to the fusion of carbon, and not to extraneous matter. From my own experiments I always found that the more impure the substance was, the more numerous and the larger were the globules produced.

All the globules from the different kinds of substances used, were readily fused by the compound flux, and underwent little change when it was not used; although the heat was, in this case, of longer continuance. Matter similar to the impurities discovered in the substances used, was detected in them.

From these facts it would appear, that the globules produced from the combustible substances operated upon, did not arise from the fusion of their carbon, since they can otherwise be accounted for; particularly as no experiment has been made which unequivocally leads to that conclusion. The experiment upon which Professor Silliman relies, as a proof of the globules being fused carbon, is one which is not satisfactory to me; if it had been, it would have given

me great pleasure; for no one, I trust, feels more interested in the scientific prosperity of his country than I do; and if Professor Silliman were right, it would indeed be a triumph for America.

The experiment just alluded to, (see vol. vi. p. 347, Journal of Science,) is the heating some of the coloured globules in oxygen gas by the solar rays, with a lens. The following is an extract from the papers.

"To detach any portion of unmelted Plumbago which might adhere to them, I carefully rubbed them between my thumb and finger, in the palm of my hand. Although they were in the focus for nearly half an hour, they did not melt, disappear, or alter their form; it appeared, however, on examining the gas, that they had given up a part of their substance to the oxygen, for carbonic acid was formed which gave a decided precipitate with lime-water."

That this experiment is equivocal appears certain, as particles of the support might have been attached to the globules; for, from my own observations, I found that in a great number of instances, some of the white globules at the point of junction with their support, had small dark particles attached to them, and when the surface from which they were detached was magnetic, they were attracted by the magnet when it was presented to those parts; I could not disengage those particles by rubbing the globules with my fingers against one another. It is very evident that, as the globules underwent no change, (unless a reduction of volume, which is not mentioned) as the description clearly shows, the carbonic acid

obtained, might have been produced by the combustion of portions of the support adhering to them externally, and penetrating them to a certain extent.

In the experiment detailed in vol. v. p. 363, of the same Journal, the carbonic acid found, probably had a similar origin, and the disappearance of the globules may have been owing to their incorporating themselves with the piece of brick upon which they were placed, as the brick was vitrified at the point where they were placed.

Professor Silliman seems disposed to lay great stress on the loss in my examination of the globule, sent by Dr. Macneven. I thought I had well accounted for it, as the particle was small, action violent, and I merely wished to show chemically, the presence of iron. I could not, for one moment, entertain the idea that carbon existed in it, in any notable proportion; for I know of no combination of iron and carbon at common temperature, which could give a product possessed of the malleability and toughness which the globule possessed.

I was sorry to observe that Professor Silliman in his reply to my paper, seems offended that I did not notice his communications upon the subject of these globules, particularly as the discovery was his, and was justly entitled to such consideration. My silence certainly appeared uncourtly, but it was not owing to ignorance of his labours, or a want of regard to him personally, or as a chemist; Professor Silliman's merit is too well known to be affected by me.

Additions to the Ornithology of the United States.

By CHARLES BONAPARTE. *Read May* 10, 1825.

Mr. Titian Peale's expedition to Florida has enriched the Fauna of the United States, in several of its departments, with many interesting species. Of the birds, which will be introduced into the pages of my American Ornithology, the following are more particularly worthy of immediate notice.

FALCO.

Subgenus *Elanus*, Savigny.

F. *melanopterus*, Daud. Canus, subtus albus; tectricibus alarum nigris; cauda subæquali; unguibus subtus rotundatis.

Pale bluish-gray, beneath white; wing-coverts black; tail nearly even; nails rounded beneath.

This beautiful hawk is certainly an important acquisition to the Ornithology of this country. Of all birds it is one of the most extensive in its range, being found in almost every part of the globe. Together with the F. *furcatus*, and a few others, it forms a very natural and strongly marked subgenus, which, with Savigny, Leach, and others, we have called *Elanus*, notwithstanding Vieillot has changed that name to *Elanoides*. Though of comparatively recent discovery, this bird is already superabundantly supplied with names; it is the F. *melanopterus*, and F. *sonninensis*, Latham; the *Elanus cœsius*, of Sa-

vigny and Vieillot, the *Elanus melanopterus* of Leach, &c. It was first accurately described and figured by Levaillant, under the name of *Blac*.

We readily recognize this species in the excellent description that d'Azara has given of his ALCON *blanco*, which, Vieillot, pursuing his improper plan of giving names to species he had never seen, called MILVUS *leucurus*. He afterwards perceived that it was an *Elanus*, (and on that account changed this generic name to that of *Elanoides*) but he placed it in a different section from that to which he referred African specimens of the same species!

I take this opportunity to give a specific phrase to distinguish the other North American species of this subgenus.

F. *furcatus*, Linn. Albus; dorso, alis, caudaque valde forficata nigris; unguibus subtus canaliculatis.

White; back, wings, and deeply forked tail, glossy black; nails beneath, canaliculate.

The latter character shows the impropriety of attributing rounded nails to all the *Elani*.

SYLVIA.

S. *palmarum*, Lath. Fusco-olivacea, vertice rufescenti-subtus; flavo; albida, pectore striato, crisso flavo; rectricibus extimis duabus intus apice macula alba.

Brown-olive; vertex rufous; beneath, yellowish-white; breast striated; under tail-coverts pure yel-

low; two exterior tail-feathers white on the inner web at tip.

This species has hitherto been known as a West Indian only. The adult male seems to have been unknown.

Columba.

Subgenus *Columba.*

C. *leucocephala,* Linn. This well known species will now have a place amongst the birds inhabiting the United States, as Mr. Peale has brought specimens from the southern part of Florida, where they resort to breed, in company with an undescribed Dove, that may be distinguished from the C. *carolinensis,* which it closely resembles, by the following characters.

C. *zenaida,* Nob. Rufo-cinerea, subtus vinacea; orbitis cæruleis; macula pone aures amethystina; cauda brevi, æquali, fascia nigra, rectricibus duodecim, tribus extimis apice griseis.

Brownish-ash; beneath vinaceous; orbits pale blue; an amethystine spot under the ear; tail of twelve feathers, short, even, with a black band; three outer feathers pearl gray at tip.

Rallus, Linn.

Subgenus *Rallus.*

One of the most important proceeds of Mr. Peale's mission, is a new species of Rail, of an extraordinary stature, being by far the largest known of the genus.

R. *giganteus*, Nob. Fusco-virens, pennis medio longitudinaliter albis; uropygio, remigibus rectricibusque immaculatis; remigum prima falciformi.

Blackish, glossed with green; feathers longitudinally white in the middle; rump, quills, and tail feathers immaculate; first primary falciform.

Length 2 feet 1 inch; bill nearly 5 inches.

On a late visit to New York, I observed two specimens of this bird in the well kept museum of that city. They are labelled as undescribed Rails. I am informed that one was brought alive from South America, whilst the other was shot at Long Branch, N. J. where it had undoubtedly strayed.

Sterna.

S. *cayana*, Lath. Alba; occipite nigro; dorso alisque canis; remigum scapis albis; rostro elongato, ex flavicante rubello.

White; occiput black; back and wing, pale bluish-gray; quill-shafts white; bill elongated, pale yellowish-red.

Perfect winter plumage; in the summer the whole top of the head is black.

Total length $17\frac{1}{2}$ inches; bill $3\frac{1}{2}$; tarsus $1\frac{1}{4}$.

Descriptions of new species of HISTER *and* HOLOLEPTA, *inhabiting the United States. By* T. SAY. *Read May* 10, 1825.

HISTER.

Family 1. Head with a transverse stria; thorax with one or two stria; tibiæ dentated.

A. Thorax with two lateral striæ, entire or one abbreviated.

† Elytra with the marginal stria.

1. H. *memnonius*. Inner thoracic stria abbreviated a little beyond the middle; elytra, each with a basal puncture.

Body black, somewhat polished: *head* slightly convex, arcuated line very distinct: *mandibles* a little prominent: *antennæ* dull piceous: *thorax* with the inner stria abbreviated at about $\frac{2}{3}$ the length of the thorax, a very short impressed line on the middle of the base: *elytra* with the marginal and four dorsal striæ entire; the fourth hardly reaching the base; fifth less than half the length of the elytrum; sutural stria more than half the length of the elytrum; an obvious impressed puncture at base equidistant from the fourth stria and the scutel: *feet* piceous: *anterior* tibiæ quadridentate.

Length nearly $\frac{1}{4}$ of an inch.

I received this species from Dr. J. F. Melsheimer, under the name I have adopted. The punctures of

the elytra are much nearer to the base than those of the *senegalensis* as represented by Paykull.

2. H. *depurator*. Inner thoracic stria longer; elytra, marginal stria obsolete; dorsal striæ three.

H. *unicolor*, Melsh. Catal.

Body black, polished; *head* slightly convex, arcuated line very distinct: *mandibles* a little prominent: *antennæ* piceous: *thorax* with the exterior stria a little shorter than the inner one, which extends to the basal margin: *elytra*, marginal stria obsolete, consisting only of a series of punctures which extend no further than the middle; dorsal striæ three, entire; fourth stria consisting of from nine to twelve impressed points, not extending beyond the middle; fifth stria very short, obsolete, and consisting of two or three impressed points; sutural stria abbreviated at the middle, generally interrupted at the posterior tip into a short series of punctures: *anterior tibiæ* tridentate; terminal tooth slightly emarginate; superior tooth often obsolete.

Length rather more than $\frac{1}{4}$ of an inch.

Var. a. Marginal line obsoletely continued by the humerus in punctures.

Var. b. Ferruginous.

Altogether distinct from the *unicolor* of Fabr. which has the exterior marginal and abbreviated striæ very distinct, and the anterior tibiæ six toothed. Dr. J. F. Melsheimer has since given it the name which I adopt. It is a very common species, inhabiting throughout the union. I obtained a speci-

men in Arkansa. It differs from H. *thoracicus*, Payk. by having the sutural stria.

3. H. *arcuatus*. Elytra with a large rufous lunate vitta; anterior tibiæ with two entire teeth.

Body black, polished: *head* with the transverse line very distinct: *antennæ* tipped with fulvous: *thorax* ciliated each side with yellowish hairs; striæ entire, reaching the base and not undulated near the tip: *elytra* with a broad rufous vitta, commencing at the middle of the base, where it is dilated, and curving, so as to reach the sutural stria near the tip; marginal stria very distinct, entire; three dorsal striæ entire; fourth and fifth abbreviated, not reaching the middle; sutural striæ extending rather beyond the middle; a slight transverse indentation near the tip: *thighs* bright rufous: *anterior tibiæ* with two very prominent entire teeth.

Length $\frac{1}{4}$ of an inch.

Var. a. Transverse line of the head not very obvious; fifth stria of the elytra obsolete.

This species is rather rare. In its general appearance as respects colour, it resembles the *sinuatus*, Panz. which, however, is destitute of the marginal stria. The variety occurred in Arkansa.

4. H. *bifidus*. Thoracic striæ entire; marginal and four dorsal striæ entire; an oblique abbreviated stria at base.

Body black, immaculate: *head* with the transverse line very distinct; an obsolete, longitudinal line visible in a particular insidence of light: *antennæ* with

the tip of the clavum pale: *thorax*, striæ entire, not approaching at tip: *elytra*, marginal stria entire, near the base exterior to the humerus, bifid and divaricated; an abbreviated, very oblique stria from the humeral angle, inwards towards the first dorsal stria; dorsal striæ four, entire; fifth not reaching the middle; sutural stria extending beyond the middle; an abbreviated, very oblique stria at base, being the origin of the very widely interrupted fifth stria: *anterior tarsi* three toothed, the intermediate tooth largest, three smaller teeth above.

Length less than $\frac{1}{3}$ of an inch.

From the character of the fifth stria this species might be mistaken for the *interruptus* of Beauvois, but it is a much smaller insect, and the *interruptus* has two abbreviated striæ at the base of the elytra.

It is an inhabitant of Missouri; I obtained two specimens when with Major Long's party in that region.

††. Elytra destitute of the marginal striæ.

5. H. *indistinctus*. Thoracic striæ entire; dorsal striæ four, entire; fifth stria abbreviated, obsolete; sutural stria slight.

Body black, immaculate: *head* with the transverse line very distinct: *thorax* with an indentation on the middle of the posterior submargin; lateral striæ entire and not approaching at their tips: *elytra* with four entire dorsal striæ; fifth abbreviated, more or less obsolete, generally consisting of five or six punctures; sutural stria not deeply impressed, extending

rather beyond the middle, and not reaching the tip: *anterior tibiæ* tridentate, terminal tooth largest, emarginate.

Length less than $\frac{1}{3}$ of an inch.

B. Thoracic stria single.

6. H. *sedecimstriatus*. Dorsal striæ entire; fifth connected to the sutural at base.

Body black, immaculate: *head* with the transverse line distinct: *antennæ* ferruginous, paler at tip: *thorax* with the stria entire and well impressed: *elytra* with the dorsal and sutural striæ entire, the latter uninterruptedly connected with the fifth at base; marginal striæ two, exterior one entire, inner one abbreviated at the termination of the small oblique line; terminal margin with small profound punctures: *feet* piceous: *anterior tibiæ* tridentate.

Length more than $\frac{3}{20}$ of an inch.

This species is not uncommon, and seems to extend to many remote parts of the Union, as I obtained a specimen in Missouri. The fifth and sutural striæ of the elytra unite at base as obviously as those of the 12-*striatus* of Europe and Africa; it is therefore, somewhat similar to the *americanus* of Paykull, which, however, differs by being altogether destitute of the marginal striæ of the elytra, and by having two thoracic striæ, though one of them is much abbreviated. It may be useful to state in this place, that Paykull has represented his *americanus* as having the sutural striæ widely interrupted at base from the basal termination of the fifth stria; in this char-

acter he is, perhaps, correct, as respects a few specimens, but in most individuals the connexion can be traced, with the exception of a very short interval of absolute interruption.

7. H. *obliquus*. Elytra with an oblique rufous spot at tip; lateral thoracic stria interrupted from the anterior one.

Body black: *head* with the transverse line angulated in the middle: *antennæ* rufous: *thorax*, an orbicular indentation at the angle formed by the anterior and lateral striæ, which do not join: *elytra* with a large oblique spot on the exterior tip, extending from the sutural angle to the humerus, where it is obsolete; four dorsal stria, entire; fifth somewhat abbreviated, being obviously shorter than the others; sutural stria extending to the middle: *feet* with a large, prominent, slightly emarginate tooth at tip, and three smaller ones.

Length more than $\frac{3}{20}$ of an inch.

This is so much like the *bimaculatus*, Linn. of Europe, that I have long hesitated to describe it, being inclined to consider it a mere variety of that species. Paykull represents the frontal stria of the *bimaculatus* of the usual form, excepting that it is more obtuse than others, whereas that of our insect is precisely similar to the same part of the *senegalensis*, Payk. this character, for which I rely on the accuracy of Paykull, combined with those of the interrupted thoracic striæ, and the somewhat abbreviated fifth dorsal stria, justify the separation of this insect as an independent species.

Family 2. Frontal stria obsolete or none; lateral thoracic stria none; elytra with entire striæ; anterior tibiæ entire.

8. H. *nigrellus*. Striæ of the elytra equidistant, equal, rectilinear; front convex.

H. *flavicornis*, Melsh. Catal.

Body oval, black: *front* convex, more prominent in the middle, a slight angle over the insertion of the antennæ: *antennæ* piceous, clavum oval, pale fulvous: *thorax* densely and equally punctured: *elytra* with all the striæ rectilinear, entire and equidistant, excepting the marginal one, which is very obsolete, hardly perceptible and generally abbreviated: stria on the lateral edge of the superior surface as distinct as the dorsal ones: *feet* piceous: *anterior tibiæ* ciliated with short spines.

Length $\frac{1}{15}$ of an inch.

Var. a. Body piceous.

This species is altogether different from the *flavicornis*, Herbst, in which are but three abbreviated striæ at the base of the elytra. I therefore adopt a name given by Dr. J. F. Melsheimer. It is certainly very closely allied to the *fulvicornis*, Fabr. and may possibly prove to be a variety of that insect.

9. H. *conjunctus*. Fifth dorsal stria abbreviated; fourth united with the sutural stria at base.

Body oval, black: *head* minutely punctured, slightly concave before, and somewhat angulated over the insertion of the antennæ: *antennæ* and *mandibles* piceous, the former with a dull fulvous capitulum:

thorax more obviously punctured each side: *elytra* piceous at the terminal margin; marginal stria obsolete, more distinct behind; four dorsal striæ entire, the fourth very obtusely incurved at base, so as almost to join the sutural stria; fifth stria abbreviated, extending a little beyond the middle: *anterior tibiæ* narrower at tip, and very obtusely and slightly crenate on the edge.

Length rather less than $\frac{1}{10}$ of an inch.

A very distinct species, remarkable for the connexion of the fourth and sutural striæ.

10. H. *subrotundus*. Front concave; elytra with the sutural stria abbreviated.

H. *subrotundus*, Melsh. Catal.

Body rounded, black: *front* concave, transverse line obsolete: *mandibles* piceous: *thorax* more obviously punctured on the sides: *elytra* each side and at tip rufo-piceous; marginal stria hardly reaching the middle; five dorsal striæ entire; sutural stria abbreviated beyond the middle; terminal submargin transversely indented: *beneath* blackish-piceous: *feet* rufo-piceous: *anterior tibiæ* not wider at tip than in the middle, ciliated with distant spines.

Length much less than $\frac{1}{10}$ of an inch.

Var. a. Fifth dorsal stria abbreviated, (rare.)

Var. b. Entirely black.

This seems to be closely allied to the *troglodytes*, Payk. of the East Indies; but in that species the form is more oval, and the anterior tibiæ are bidentated. It is a common species and varies in size.

11. H. *vernus*. Front concave; elytra with two abbreviated striæ.

Body black: *head* minutely punctured: *front* concave: *antennæ* with the capitulum piceous: *mandibles* dark piceous: *thorax* with rather large, distant punctures each side; a much abbreviated impressed line on the posterior margin: *elytra* with the marginal striæ abbreviated, not extending beyond the middle; dorsal striæ four, entire, well impressed; fifth and sutural striæ abbreviated rather before the middle: *feet* piceous: *anterior tarsi* crenate, with three larger, subequal, spinous teeth.

Length $\frac{1}{10}$ of an inch.

Family 3. Front convex, punctured; thorax without striæ, punctured each side; elytra striate and punctured.

12. H. *fraternus*. A transverse impunctured space on the thorax, and a common one on the elytra; first dorsal stria reaching the tip; head with impressed lines.

Body brassy-black: *head* somewhat rugous before: *antennæ* with a dull rufous capitulum: *thorax* densely punctured, excepting a transverse space behind the middle: *elytra* densely punctured, excepting an oval common space near the base and the lateral margin; marginal striæ obvious, not reaching the humerus; first dorsal slightly undulated near the base, entire, much incurved behind the middle; second, third, fourth, and sutural striæ abbreviated at the middle, the two latter connected at base: *beneath* black: *feet*

piceous-black: *anterior tarsi* quadridentate, penultimate tooth largest, and two or three smaller ones at base.

Length rather more than $\frac{3}{20}$ of an inch.

Var. a. Cupreous dull.

Length less than $\frac{3}{20}$ of an inch.

Inhabits Missouri.

Very closely allied to the 4-*striatus*, Payk. of Europe, but the impunctured space of the thorax is much smaller, and that of the elytra is shorter, transversely oval. Not uncommon. It occurs numerous on the sea beach under Fuci, and other decaying vegetable and animal substances. I obtained a specimen also in East Florida.

13. H. *mancus*. Thoracic punctures smaller on the disk; a common space on the elytra, impunctured; dorsal striæ all abbreviated; head without impressed lines.

Body black: *head* punctured, compressed before and destitute of rugæ: *thorax* densely punctured; punctures smaller on the disk, and particularly behind the middle: *elytra* densely punctured, transverse common space near the base, and humerus, impunctured; marginal stria entire; dorsal striæ abbreviated rather behind the middle; fourth and sutural striæ connected at base: *feet* piceous-black: *anterior tibiæ* not dentated, but with remote short thick spines.

Length rather less than $\frac{3}{20}$ of an inch.

I obtained it in the North West Territory during Major Long's second Expedition. It resembles the

preceding, but the abbreviated first dorsal stria, and the entire anterior tarsi, amply distinguish it.

14. H. *palmatus.* Thorax, excepting on the posterior margin, impunctured; anterior tibiæ profoundly dentated.

Body black: *head* with a transverse line and a longitudinal bifarious one: *antennæ,* small joints rufous: *thorax* without any appearance of punctures, except on the narrow basal margin, where they are rather large: *elytra* punctured on the terminal half, but not exterior to the line of the third stria; marginal stria abbreviated; four dorsal striæ abbreviated, the fourth united to the sutural stria at base: *feet* blackish-piceous: *anterior tibiæ* with two or three prominent teeth, and four or five smaller ones.

Length less than $\frac{1}{5}$ of an inch.

Family 4. Body oblong or elongated, flattened; clypeus concave; thorax marginated, punctured each side; elytra striated; anterior tarsi denticulated; posterior pairs with but a single series of spines.

15. H. *parallelus.* Elytra with entire striæ; anterior tarsi quadridentate; frontal line distinct.

Body somewhat elongated, a little depressed, black: *head* punctured, with a distinct transverse, impressed line, anterior to which the surface is a little concave: *antennæ* pale rufous: *mandibles* piceous: *thorax* punctured, those of the disk a little smaller: *elytra* slightly punctured each side and at tip; all the striæ entire: *beneath* piceous-black: *feet* pale piceous:

anterior tarsi four toothed, two terminal teeth nearly equal.

Length from more than $\frac{1}{10}$ to less than $\frac{3}{20}$ of an inch.

Var. a. Sutural stria obsolete at base.

Rather common. I have also found it in East Florida.

16. H. *frontalis*. Head a little depressed; nasus very short, transverse line indistinct; elytra with entire striæ.

Body oblong, somewhat depressed, black: *head* depressed, the clypeus terminating before in a rather prominent line between the antennæ; transverse line obsolete; nasus very short, transverse linear, not concave: *labrum* and *mandibles* piceous: *antennæ* piceous, with a yellow capitulum: *thorax* subequally punctured: *elytra* slightly punctured on the lateral margin and tip; striæ entire; fifth obsolete at base, or continued only by punctures: *anterior tarsi* with four small teeth.

Length less than $\frac{1}{10}$ of an inch.

Very similar to the preceding, but much smaller, and distinguished by the peculiar form of that part of the head to which the labrum is attached: this part is transverse linear. I obtained a specimen on the eastern shore of Virginia.

Family 5. Body flattened, oval; intermediate and posterior pairs of tibiæ with but a single series of spines.

17. H. *sordidus*. Thorax impunctured; marginal striæ of the elytra none; inner striæ abbreviated.

Body polished: *head* concave in front; transverse line very obvious: *thorax* impunctured, marginal line single: *elytra* destitute of a marginal line; first, second, and third striæ entire; fourth, fifth, and sutural striæ anteriorly abbreviated at the middle, subequal; the sutural one often rather longest: *anterior* and intermediate pairs of tibiæ, five toothed, of which the superior tooth is very small, and with the appearance of a still smaller one above: *posterior tibiæ* with several spines.

Length less than $\frac{3}{20}$ of an inch.

This is very similar to H. *depressus*, of Europe, but there is no appearance of punctures on the thorax.

18. H. *æqualis*. Elytra destitute of obvious striæ, minutely punctured.

HISTER *æqualis*, Melsh. Catal.

Body much flattened, black: *head* slightly convex, very minutely punctured; transverse line marginal, much arcuated: *antennæ*, capitulum rufous: *thorax* with very minute lateral punctures, lateral line narrow: *elytra* punctured, punctures small, numerous; a very slight appearance of a marginal stria, and of one or two oblique abbreviated ones at base: *anterior tibiæ* somewhat dilated, teeth four, obsolete: *posterior tibiæ* unarmed.

Length $\frac{3}{20}$ of an inch.

To the unassisted eye, the elytra appear perfectly smooth, and it is only on a close examination, aided

by a particular insidence of light, that the striæ we have described, are at all visible. In some specimens, the anterior tibiæ are hardly crenate, in others they appear armed with four very short spine-like teeth.

Family 6. Punctured, convex; sutural striæ none.

19. H. *punctulatus*. Dorsal striæ four, the inner ones abbreviated near the tip.

Hister *punctulatus*, Melsh. Catal.

Body rounded, subovate, black: *head* with small numerous punctures: *antennæ* piceous, capitulum pale fulvous: *thorax* with small numerous punctures, less distinct on the disk: *elytra* irregularly punctured; first and second dorsal striæ entire, well impressed; third and fourth striæ less deeply impressed, extending from the base to near the tip, where they are abbreviated, the latter shorter: *feet* piceous: *tibiæ* dilated in the middle, much smaller at tip.

Length nearly $\frac{3}{20}$ of an inch.

Allied to the *punctatus*, Payk. but sufficiently distinct. Rare.

20. H. *transversus*. Thorax with two grooves and a transverse impressed line.

Body oblong, brownish-black, with large numerous punctures: *head* somewhat concave above the antennæ, and before the antennæ elongated: *thorax* with a large deep groove on each side, and a transverse, impressed, very distinct line rather before the middle: *elytra* with large, dense, longitudinal punc-

tures, giving a somewhat rugose appearance to the surface.

Length rather more than $\frac{1}{20}$ of an inch.

About equal in size to the *cæsus*, Fabr. of Europe, to which it is very closely allied.

Family 7. With elevated lines.

21. H. *alternatus*. Thorax with six elevated lines; lines of the elytra with intervening smaller ones.

HISTER *sulcatus*, Melsh. Catal.

Body oval-orbicular, convex, brownish-black: *thorax* with six prominent lines, the two middle approximate on the anterior margin; the exterior line abbreviated before; lateral edges prominent; intervening grooves punctured: *elytra* with about four elevated lines, and a common one; intervening spaces with smaller elevated lines: *anal segment* with three elevated lines: *beneath* with large punctures: *feet* piceous.

Length less than $\frac{1}{10}$ of an inch.

Certainly not the *sulcatus*, Fabr. to which, however, it is somewhat similar as regards the sculpture of the elytra, but in the position and number of the thoracic lines it is somewhat like the *striatus*, Fabr. Rare. It belongs to the genus ONTHOPHILUS of Leach.

Hololepta.

1. H. *æqualis.* Polished; mandibles as long as the head, simple.

Body polished, suboval: *head* with an obtuse spine above each antenna: *antennæ* dark ferruginous: *mandibles* simple, as long as the head: *elytra* obliquely truncated at tip, sutural shorter than the external edge; three much abbreviated striæ at base, the inner one indistinct, marginal stria very obvious: *anterior tibiæ* three toothed, the anterior one dilated and emarginate.

Length $\frac{2}{5}$ of an inch, nearly.

Common under bark of decaying trees. I formerly considered it identical with the 4-*dentatus*, Fabr. of South America, but on comparison, I agree with Dejean that it is a new species.

2. H. *fossularis.* Anterior angles of the thorax with an excavated spot.

Body highly polished, suboval: *head* with an obtuse spine above each antenna: *antennæ* dark ferruginous: *mandibles* simple, rather longer than the head: *thorax* with a profoundly impressed, longitudinally-oval spot on each anterior angle: *elytra* obliquely truncated at tip, the sutural shorter than the external edge, three much abbreviated striæ at base, the inner one obsolete; marginal stria very obvious: *anterior tibiæ* three-toothed, the anterior tooth dilated and emarginate.

Size of the preceding, which it very much resembles, and of which it may possibly prove to be the male.

Description of a new Fish of the genus SALMO. *By* C. A. LESUEUR. *Read January* 11, 1825.

SALMO.

S. *microps*. Pl. iii. Teeth in the superior and inferior jaws, long, hooked, armed with one or two barbs at their extremities; those of the inferior jaw much longer and projecting outwardly.

Body, including the caudal fin, four inches in length; depth, six lines; thickness, four lines, near the pectoral region; form elongate, thicker anteriorly, thin and slender towards the tail, slightly compressed upon the sides: *back*, *nuca* and *head*, describing a pretty uniform curve, rather more elevated towards the back: *abdomen* long, straight: *anus* behind the middle of the body: *head* subcompressed: *front* slightly arcuated: *snout* very short, a little longer than the diameter of the eye: *eyes* small, much approximated to the jaws, to the summit of the head, and extremity of the snout, where they scarcely leave room for the nostrils, which are small and indistinct: *branchiæ* with their apertures very large, open from the junction of the inferior jaws to near the nuca, after having described a semioval curve, behind the angle of the jaws; this disposition renders the opercular pieces very oblique; these pieces are, as all the rest of the fish, soft and rather membranaceous than osseus, they are weak and indistinct, and the form of each piece is scarcely determinable,

and as though pushed from their place by the profound opening of the mouth, which is the seventh part of the whole length of the body, or six lines in length: *branchiostegous membrane* narrow, sustained by ten or twelve weak approximate rays: *branchial arcs* much geniculated, furnished with very short branchial filaments: *mouth* spacious, horizontal, deeply cleft, having its angle about five lines behind the eyes: *tongue* scarcely perceptible, sustained at its extremity by a membrane, and at the junction of the inferior mandible by two small, moveable, lateral bones; its teeth are slender, long, curved, in many ranges, continued as far as the pharynx: *vomer* armed on each side with two rows of teeth, rather shorter than the preceding; wings of the palate with two rows of slender hooked teeth, of moderate size: *intermaxillaries* small, furnished with teeth: *maxillaries* straight, long, each with two rows of hooked teeth; those of the interior row longer, more curved, and sometimes terminated by two small barbs: *inferior jaw* equal to the superior, straight, armed with two rows of teeth, which are slender, curved, and hooked, terminated by barbs; those in the exterior row much longer than those of the superior jaw; they are moveable and projected outwardly; at the extremity of the lower jaw on each side, are three or four teeth of a line in length, longer, more arcuated, and more moveable than the others, terminated by very distinct barbs; teeth of the interior row smaller, and appear to be placed between the first like secondary teeth: *scales* small, with concen-

tric lines, rounded, pellucid, and very soft: *lateral line* almost straight, in the middle of the body: *fins*, first dorsal short, subtriangular, higher than long, elevated anteriorly; second dorsal adipose, placed above the posterior part of the anal fin; *ventrals* large at their base, and terminating in a point, which is prolonged towards the middle of the anal fin, one inch four lines long, placed at the third of the length of the body, under the origin of the dorsal and towards the head; *pectorals* falciform, about one inch and two lines in length, their points reach the posterior base of the dorsal fin; they are placed upon the sides about the middle of the height and near the branchial opening; *anal fin* middle sized, as long at the base as the height of its anterior part, emarginate posteriorly, placed nearly midway between the ventral and caudal fins: *tail* long and narrow, terminated by a fin small in proportion to the others, slightly emarginate, the superior lobe largest and longest: *colour* reddish; *back* marked with numerous brownish points, (the spirits appeared to have changed its colour.)

B. 10—12. P. 15. 1st D. 14. 2d D. 0. V. 9. A. 16. C. 20.

Inhabits the East Indian seas.

Communicated to me by Dr. Hays.

Observations. In the form of the body, the deeply cleft mouth, the head, and number of branchiostegous rays, this fish is closely related to the subgenus *Saurus*, of Cuvier, but it is distinguished by the teeth of the vomer. It does not appear possi-

ble to place it in the subgenus *Salmo*, of Cuvier, in consequence of its large pectoral and ventral fins, and particularly of the teeth, which are moveable, and barbed. We think proper, therefore, to make it the type of a new subgenus near to *Saurus*, under the name of *Harpadon*, with the following characters.

Jaws, tongue, pharynx, wings of the palate and vomer, armed with moveable, slender, curved teeth, those of the jaws barbed.

Description of a new crystalline form of APOPHYLLITE, LAUMONITE, *and* AMPHIBOLE, *and of a variety of* PEARLSTONE. *By* GERARD TROOST, M. D. *Read May* 17, 1825.

The geode from which the following description of Apophyllite has been drawn up, was presented to me by Dr. Bigsby, who found it imbedded in the amygdaloid of Point Marmoaze, (*Memince of the Voyageurs*,) on Lake Superior, 44 miles N. W. from the straits of St. Mary. It is composed of white calcareous spar, with a little fibrous Prehnite interspersed, and is lined with crystals of quartz, and of the new form of APOPHYLLITE.

The last mentioned mineral, now discovered for the first time in North America, has a beautiful opalescent play of colours; it is translucent, passing into transparent, exfoliates like the European variety before the blowpipe, and melts into a white

enamel, which, by a prolonged application of heat, changes into a semi-transparent glass. It does not require so much heat for its fusion as the variety just mentioned, but coincides with it in its other characters.

One of the crystals of the Apophyllite lining the sides of this geode, rather exceeds $\frac{1}{2}$ an inch in length; it has the appearance of an elongated octaedron, with the angles of the base truncated and its edges emarginated.

Adopting the primitive form as given by Haüy, *Traité de Mineralogie*, tom. iii. p. 191, 2d ed. we have primitive form, fig. 1.

Fig. 1.

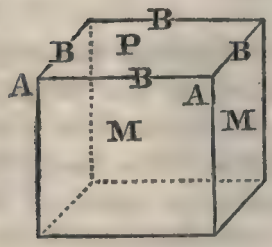
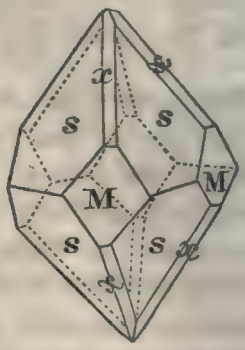


Fig. 2



Apophyllite mixtunitaire $M \overset{1}{A} B$ fig. 2.

$$M\ s\ x^{\frac{2}{3}}$$

M upon M		90°
M ——	*s*	127° 59′
M ——	*x*	149° 29′ 30″

Laumonite. The same gentleman has also furnished me with a specimen of a crystallized substance which has proved to be a new form of Laumonite.

It is of a red colour, passing from rose into brick red; it is brittle and sometimes even friable; it melts before the blowpipe, accompanied by ebullition, giving out a fine blue phosphorescent light, into a whitish enamel. The form which the Laumonite, in the present instance, assumes, is a rhomboidal prism, acuminated with a diedral summit, and is, in fact, the primitive form, having its summits separated by a rhomboidal prism; it is the most simple form at present known of that mineral.

Fig. 1, *Primitive.* *Fig.* 2, *Prismatic.*

Fig. 1.

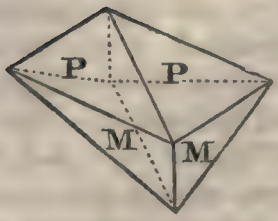
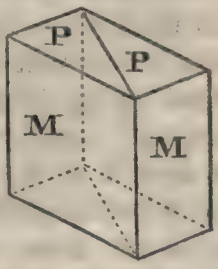


Fig. 2.



My friend Dr. Bigsby, discovered this mineral at three different places, and in different geological situations. The crystallized variety was discovered in a small vein of white calcareous spar and red feldspar, which passes, with occasional ramifications, nearly lengthwise along the centre of a trappose

dyke, in quadrilateral columns, 9 miles north-west of the Otter's Head, a conspicuous head-land on the north shore of lake Superior. This dyke traverses a fine grained white granite, containing but a little hornblende, and that little almost altogether vanishing northwards along the shore.

It occurs also in a reddish feldspar 29 miles south-east from the Otter's Head. A granular and crystallized Laumonite, of a brownish orange colour, mixed with calcareous spar, forms numerous highly inclined veins, sometimes 6 inches thick, in the amygdaloid of Point Marmoaze, with temporary divergencies, running nearly parallel to its obscure northly direction; the same vein being now and then traced for 200 yards, sending off from time to time capricious ramifications, which subdivide until they disappear in threads.

Amphibole. The specimen now under consideration, was at first very enigmatical; I was entirely misled by its crystalline form, so widely deviating from those usually presented by Amphibole. In all the crystals of this mineral hitherto described, the faces M of the primitive form compose the greatest part of the prism, and the summits have generally two and more faces; I was therefore very much surprised to find the characters and composition which distinguish the Amphibole, combined with the crystalline form now to be described.

It is a rectangular prism, terminated, in some of the crystals, by an inclined plane, and in a few others by a diedral summit. These crystals, which have a

greenish and sometimes a black colour, with a rough surface, are divisible parallel to the four edges of the prism, forming the rhomboidal prism of the Amphibole, the inclined planes forming an angle with one of the sides of 105° 11′, and must, of course, be the face *l*, (see *Haüy, Traité de Min. Atlas*, pl. 64,) so that we have $^{1}_{x}G^{11}_{s}H^{1}_{l}\dot{E}$, approaching therefore, to the *Triunitaire* of Haüy, the faces M having entirely disappeared, the decrement with forms *l*, has place sometimes on the two angles forming the diedral summits, but the greater part of the crystals on our specimen having but one inclined plane are the results of the decrement on one of the angles.

These crystals, in combination with a granular yellowish-brown garnet, cover a mixture of Quartz and Amphibole. Dr. Bigsby discovered this mineral among the rejections of the diggings at the bottom of Foster's bed of magnetic iron ore, $4\frac{1}{2}$ miles east from the Marmora iron works, which are situated 30 miles north from Lake Ontario, on Marmora river, one of the branches of the Trent, a large river tributary to that Lake. The rock containing this ore is a sienite; the feldspar gray and predominating. It is on the confines of the secondary limestones of the great Lakes.

Pearlstone. Another substance was brought by Dr. Bigsby from the north shore of Lake Superior, and was suspected to be a variety of Pitchstone. Its action before the blowpipe, however, induced me to subject it to a closer examination.

It is opaque, and has a perfectly black colour, and

a small conchoidal fracture, approaching to rough, with a resinous lustre; its hardness is sufficient to scratch glass; before the blowpipe, it foams up at once, becomes brown, and by a continued heat is brought to the state of a black opaque scoria; its specific gravity is 2.41.

Its constituents are,

Silex,	78. 25.
Alumine,	12. 75.
Iron Oxide,	1
Alkali,	3
Water,	5
Loss,	5
	100

We see from these data that this mineral is closely allied to the Pearlstone, but differs from it in colour, the latter having generally a tint resembling that of the substance, the name of which it bears, whilst ours is perfectly black.

It was discovered by Lieutenant Bayfield, employed by the British government in a minute survey of the great lakes of Canada. He met with it on an islet on the north shore of Lake Superior, near the island of St. Ignatius, in the mouth of Nipigon bay, and 56 miles north-east from Thunder mountain point. It was adhering to the side of one of the quadrilateral columns of the trappose dykes, which traverse in great numbers the Amphibolic granites, chloritic greenstones, limestone and sandstone, of the part of this coast between Michipicoton bay and the head-land above mentioned.

Observations on the Nomenclature of Wilson's Ornithology. *By* Charles Bonaparte. *Read May* 31, 1825. (Continued.)

Water Birds.

Having concluded my observations on the land birds, described by Wilson, I now proceed to his series of water birds, guided by the index inserted by the editor, Mr. Ord, in the 9th volume of that work. Since commencing my remarks on this celebrated work, that gentleman has published a new edition of the 7th and 8th volumes, and promised that of the 9th, containing the water birds,* and as he has introduced the greater number of the changes and corrections which I intended to propose, I should have thought it unnecessary to proceed in this arduous task, but for the sake of those who possess the original edition only, and chiefly because the editor and myself may, in some instances, disagree in opinion. I shall therefore proceed to review the nomenclature of both editions.

As none of the following birds are comprised in the two published volumes of Vieillot's *Oiseaux de l'Am. Sept.* I shall quote the abbreviated name of that author in reference to his articles in the *Nouv. Dict. d'Hist. Nat.*

* The first six, devoted to the land birds, were merely reprinted.

PLATALEA.

This restricted and well characterized genus is admitted by all authors; it is common to both continents.

185. P. *ajaja*, vol. 7, p. 123, Ord's ed. p. 129. A beautiful and well known species peculiar to this continent, inhabiting the warm parts of both hemispheres; it is represented by our author in its young plumage, (2 years old;) the adult is much more brilliant.

SYNONYMES.

PLATALEA *ajaja*, LINN. GMEL. LATH. VIEILL.
PLATEA *coccinea*, BRISS. (adult.)
PLATEA *rosea*, BRISS. (young.)
Spatule couleur de rose, de Cayenne, BUFF. *Pl. Enl.* 165. (young, 2 years old.)

ARDEA.

This cosmopolite and numerous genus has been divided by modern writers more or less judiciously, and several genera have been formed of the separated species. The eleven species of Wilson still belong to it, with the exception of the largest, which is a GRUS.

186. A. *minor*. Vol. 8, p. 35. As Wilson observed, this bird given by naturalists as a variety of A. *stellaris*, is, in reality, a distinct species. Brisson had, with propriety, considered it as such; it has already received four different names.

SYNONYMES.

Ardea *stellaris*, var. β. Gmel. Lath.
Ardea *Botaurus Freti Hudsonis*, Briss.
Ardea *mokoho*, Vieill.
Ardea *lentiginosa*, Sabine.

187. A. *cærulea*. Vol. vii. p. 117. Ord's ed. p. 122. This American bird is well described by our author, who correctly notices the impropriety of considering a distinct species, (A. *jugularis*, Forst.) from New Zealand, as a variety, whilst the A. *cærulea* is thrice nominally included in the systems. The fact escaped our author, that the young birds of the year before their first moult, are altogether pure white, and are therefore apt to be confounded with the young of A. *candidissima*.

SYNONYMES.

Ardea *cærulea*, Linn. Gmel. Lath. Vieill. (adult.)
Ardea *cærulescens*, Lath. Vieill. (adult.)
Ardea *cyanopus*, Gmel. Lath. (young.)
Ardea *Cancrofagus cæruleus*, Briss. (adult.)
Ardea *americana cinerea*, Briss. (young.)
Héron bleuâtre de Cayenne, Buff. *Pl. Enl.* 349, (adult.)

188. A. *herodias*. Vol. viii. p. 28. This stately bird is closely allied to the European A. *cinerea*, but it is easily distinguished by its superior size, and ferruginous thighs. Like in almost all the species of this difficult genus, a nominal species has been made of the young.

SYNONYMES.

Ardea *herodias*, Linn. Gmel. Lath. Vieill. (adult.)

Ardea *hudsonias*, Linn. Gmel. Lath. Vieill. (young.)
Ardea *virginiana cristata*, Briss. (ad.)
Ardea *Freti Hudsonis*, Briss. (young.)

189. *A. *egretta*. Vol. vii. p. 106, Ord's ed. p. 111. It is spread almost all over the globe, but does not frequent the western shores of the old continent. It furnishes the beautiful feathers known by the name of *Heron-plumes*. The bird is common in some districts, and we may account for the rarity and high price of the feathers, by recollecting that the adult only is decorated by them during but a portion of the year, and that it is very shy and difficult to be obtained. The adult was not observed in Europe until lately, and the young only, considered as a distinct species, had been arranged amongst the European birds, under the name of Ardea *alba*; the adult, A. *egretta*, being assigned to America.

SYNONYMES.

Ardea *egretta*, Gmel. Lath. Vieill. (adult.) Temm. not of Brisson which is A. *garzetta*, Linn.
Ardea *alba*, Linn. Gmel. Lath. Vieill. (young and moulting.)
Ardea *candida*, Briss. (young.)
La Grande Aigrette, Buff. *Pl. Enl.* 925, (adult.)
Héron blanc, Buff. *Pl. Enl.* 886. (young or moulting ad.)

Notwithstanding the unanimity of Ornithologists, the name of Ardea *alba* ought to be exclusively retained, as it is the only one given by Linné, although applied to the young bird. Mr. Ord doubts the

identity of the American and European species; his doubts are unfounded.

190. A. *virescens*. Vol. vii. p. 97. Ord's ed. p. 102. A well known and accurately described species.

SYNONYMES.

ARDEA *virescens*, LINN. GMEL. LATH. VIEILL. but not all the varieties given by Linnè and Latham.

ARDEA *ludoviciana*, GMEL. LATH. VIEILL.

ARDEA *Cancrofagus viridis*, BRISS. (adult.)

ARDEA *Cancrofagus viridis nævius*, BRISS. (young.)

Crabier de la Louisiane, BUFF. *Pl. Enl.* 909, (adult.)

Crabier tacheté de la Martinique, BUFF. *Pl. Enl.* 912. (It is generally thought to be the female, but like all other species of this genus which I have had occasion to examine, the sexes are perfectly similar in colour: the spots represented on the wings must be owing to bad colouring.)

Crabier de Cayenne? BUFF. *Pl. Enl.* 908. (It is with much doubt that I quote, agreeably to others, this plate; if intended for our bird, it is very incorrect, principally in colouring.)

191. A. *exilis*. Vol. viii. p. 37. The smallest American species, considerably smaller than the European A. *minuta*, and peculiar to this continent. Like its European analogue, it is distinguished from all other water birds, excepting those of the subgenus *Rusticola*, by having the thighs entirely feathered as in the land birds; for this reason they might be considered as constituting a subgenus under the name of *Ardeola*.

SYNONYMES.

ARDEA *exilis*, GMEL. LATH. VIEILL.

We know of no other figure than that of Wilson, which, it is the more to be regretted, is too much reduced.

192. A. *ludoviciana.* Ord's ed. A. *leucogaster.* Vol. viii. p. 13. This beautiful bird has been given by our author as new, but under a name pre-occupied by a species since ascertained to be nominal. He, however, expressed a doubt of its being the A. *leucogaster,* (Demi-Egret) and Mr. Ord, without giving any additional reason, substituted this name for that of *ludoviciana*, in his edition, though he has, probably through inadvertence, permitted the second paragraph of the article to remain, in which Wilson states the resemblance of his bird to the *Demi-Egret.* Neither Wilson, Mr. Ord, nor myself, have seen the A. *leucogaster;* the respective descriptions and plates do not agree; therefore, to state the resemblance is all that Wilson could do and has done. We shall hold him to be perfectly correct in considering this bird as a new species, until some naturalist prove, by facts and observations on nature, that it must be referred to an old species, which, however, will probably never be done ; and although the name of *ludoviciana* was pre-occupied, as that species is merely nominal, being nothing but a repetition of ARDEA *virescens,* I propose that, in compliment to Wilson, the name he selected be exclusively adopted for the present species.

193. *A. *nycticorax*. Vol. vii. p. 101. Ord's ed. p. 106. A circumstance very creditable to the discernment of Wilson is connected with this bird, of which many nominal species had been made, since it is common to both continents, very widely extended, and consequently observed for a long series of years by various naturalists, all of whom mistook the young for the female, which, as in other ARDEÆ, is perfectly similar to the male, when adult. Wilson, whose invaluable observations were too early terminated, was the first, as far as I know, to detect the error by examining *American* specimens, thus, as in other instances, making additions and corrections even to European Ornithology. He is, however, in error, in stating that the young acquires the plumage of the adult before the first spring; they do not obtain it until the third.

SYNONYMES.

ARDEA *nycticorax*, LINN. BRISS. (ad.) GMEL. LATH. VIEILL. TEMM.

ARDEA *grisea*, LINN. BRISS. (young, quoted by Gmel. Lath., &c. as the female.)

ARDEA *maculata*, GMEL. (not of Lath. nor of Vieillot, which are two different birds,) young.

ARDEA *Botaurus nævius*, BRISS. (young.)

Le Bihoreau, BUFF. *Pl. Enl.* 758, (ad.)

Femelle du Bihoreau, BUFF. *Pl. Enl.* 759, (young.)

Some of the synonymes inserted by the editor, are very doubtful. Such are,

ARDEA *gardeni*, GMEL. LATH. *Le Pouacre de Cayenne*, BUFF. *Pl. Enl.* 939, which seems to me rather the young of A. *violacea*, (see hereafter the remarks on that species.)

Wilson's figure of the young is a very correct representation of the first state; the difference from the questionable plate of Buffon is obvious.

194. A. *candidissima.* Vol. vii. p. 120. Ord's ed. A. *carolinensis*, p. 125. Two closely allied species of small, white, crested Herons have much puzzled naturalists, who seem to have rivalled each other in confounding them, some by considering them as identical, others by making several nominal species, thus rendering their synonymy almost inextricable; the species are the A. *garzetta* of Europe, and the subject of the present remarks; the latter does not inhabit Europe, but is said to be found in Asia, (which we are inclined to doubt) as frequently as on this continent, where it is widely extended. Wilson is free from all the above mentioned errors, having as usual, admirably established the species. He was, moreover, judicious in his selection both of the English and Latin names, and it was, doubtless, after a careful investigation that he selected the name of *candidissima*, which Mr. Ord has changed to A. *carolinensis*.

In fact the A. *candidissima* of Gmelin is certainly our bird, notwithstanding the opinion of some naturalists. Latham rejected that species, and united it to A. *nivea*, thus misleading subsequent authors; he ought to have abolished *nivea* by uniting it to *garzetta;* his *nivea* is therefore a compound of both species, as is obvious from his synonymes; however, as Latham's phrase indicates the present species,

those who wish it may arrange all the synonymes of the Asiatic *nivea*, which is exclusively that of Gmelin, under the *garzetta*, and give to our bird the name of A. *nivea*, Lath. excluding his synonymes.

This is the course that may be pursued with an appearance of propriety by those who object to Wilson's choice, which, however, I shall select as having been previously appropriated by Jacquin, and adopted by Gmelin. Even if both these names were to be rejected, we ought to look amongst other nominal species, which, at least in part, relate to our bird, before we impose a new name on a bird already overloaded with them. Notwithstanding, therefore, all the illegitimate names which this bird has received and is about to receive, that of Gmelin and Wilson must exclusively be adopted. The synonymy being more or less erroneously compiled in all authors without exception, and that of Wilson and of Mr. Ord not being complete, we shall here give all the synonymes that we can warrant correct.

SYNONYMES.

Ardea *candidissima*, Gmel.

Ardea *niveâ*, Lath. (Although the greatest part of his synonymes do not belong to it, but to A. *garzetta*,) not of Gmelin, which is the *garzetta*.

Ardea *garzetta*, (the variety from America) Vieill. who states that with all naturalists he believes the American and European specifically the same. He ought to have excepted at least Wilson!

Héron panaché Temm. (in the article of A. *garzetta*.)

Snowy Héron, Lath. *Syn.* first suppl. In the body of the work he seems to have reference rather to the *garzetta*.

L'Aigrette, Buffon, *Pl. Enl.* 901.
Ardea *alba minor*, Bartram.

The young of this species has probably also its part in the confusion that exists under the head of A. *æquinoctialis* of authors, and A. *zilatat* of Vieillot; and of course we might here quote with doubt, the indications of authors whence these two nominal species are compiled.

195. A. *americana*, Ord's ed. Grus *americana*. Vol. viii. p. 20. The only species in Wilson that is no longer an Ardea; it belongs to the very natural and restricted genus Grus, of Pallas, (included by Brisson in his genus Ciconia) species of which are found in every part of the globe, excepting New Holland and the neighbouring islands. The present gigantic bird is not found in Europe, but it seems probable that the Grus *gigantea* of Asia, is the same species. Although Wilson, who followed Latham, did not adopt the genus Grus, yet he admirably pointed out the differential characters. He was, however, led into error, in stating that A. *canadensis*, Linn. is probably nothing more than the young of this species; that bird certainly is, as Mr. Ord observes, a distinct and stately species. I shall give it a place in my American Ornithology.

SYNONYMES.

Grus *americana*, Vieill.
Ardea *americana*, Linn. Gmel. Lath.
Ardea *gigantea?* Gmel. Lath.
Grus *leucogeranos?* Pallas.

Ciconia *Grus americana*, Briss.
La Grue d'Amérique, Buff. *Pl. Enl.* 889.

196. A. *violacea*. Vol. viii. p. 26. A beautiful nocturnal species closely allied to A. *nycticorax*, but peculiar to the warm parts of both Americas. With a few others, these may constitute a subgenus under the name of *Nycticorax*. Our author has corrected several errors of former writers, originating from Catesby. No less than four nominal species have been made in the systems of this species. Not satisfied with the existing confusion, Vieillot has given a new name to the adult, and probably another to the young.

SYNONYMES.

Ardea *violacea*, Linn. Gmel. Lath. Vieill.* (adult,) incorrect description.

Ardea *cayennensis*, Gmel. (adult.)

Ardea *cayanensis*, Lath. (adult.)

Ardea *jamaicensis*, Gmel. Lath. (young.)

Ardea *gardeni?* Gmel. Lath. (very young, quoted by Temminck as the young of A. *nycticorax*.)

Ardea *sexsetacea*, Vieill. he could not resist the tempta-

* This ornithologist states, that the description of authors being made from the incorrect figure of Catesby, is very bad, as are almost all those made from the figures of that author, which, after the birds themselves have been described from nature, have often still been considered as representing different species. He then proceeds to describe the bird as he has seen it. His remarks are very proper, and it is therefore the more surprising, that he does not perceive that his A. *violacea* (as corrected) is no other than his A. *sexsetacea*.

tion of giving this excellent name, although he knew it to be the *cayanensis*.

Ardea *maculata?* Vieill. (young,) not of Latham, which is a bird from New Holland, to which, at all events, the name of *maculata* must be exclusively preserved; nor of Gmelin, which is, undoubtedly, the young of A. *nycticorax*, (European) incorrectly united (in our supposition) by Latham, to A. *gardeni*, which we think the young of this American species.

Ardea *Cancrofagus bahamensis*, Briss. (adult.)

Bihoreau de Cayenne, Buff. *Pl. Enl.* 899, (adult.)

Le Pouacre de Cayenne? Buff. *Pl. Enl.* 939. (young, quoted by Temm. under A. *nycticorax*.)

TANTALUS.

Three species of this Linnæan genus are given by our author, but as it has been very properly restricted by Lacépède, Illiger, Temminck, &c. only one of them belongs at present to it; the others being Ibis. Both genera are found in the two continents.

Tantalus, Linn.

Is composed of three species.

197. T. *loculator*. Vol. viii. p. 39. Peculiar to America, where it inhabits the hottest climates on both sides of the equator, but extending more in the southern hemisphere. It is stated to be also an inhabitant of New Holland, on the authority of Dampier, who informs us that he saw great flocks of them. But is it really the same species? the latter fact alone would induce me to doubt it, as the American is a solitary bird.

SYNONYMES.

Tantalus *loculator*, Linn. Gmel. Lath. Vieill.
Numenius *americanus major*, Briss.
Le Curicaca de Cayenne, Buff. *Pl. Enl.* 863.

Ibis, Lacépède.

Lacépède was the first to separate this natural genus from Tantalus, and he has been followed in this respect by all recent ornithologists. It is a singular fact that Vieillot endeavoured to appropriate this genus to himself.

198. T. *ruber*, Ord's ed. Ibis *ruber*, Vol. viii. p. 41. One of the most beautiful of the feathered tribe. In its young state it is dirty brown; it is said to change to a pure white afterwards; and finally becomes of the most vivid red. It must now be called Ibis *rubra*. It is peculiar to the hottest parts of this continent.

SYNONYMES.

Tantalus *ruber*, Linn. Gmel. Lath. (adult.)
Tantalus *fuscus*, Linn. Gmel. Lath. (young.)
Ibis *rubra*, Vieill. (adult.)
Ibis *fusca*, Vieill. (who wants it to be distinct,) (young.)
Numenius *brasiliensis coccineus*, Briss. (adult.)
Numenius *brasiliensis fuscus*, Briss. (young.)
Courly rouge du Brésil, de l'âge de trois ans, Buff. *Pl. Enl.* 81. (adult.)
Courly rouge du Brésil, de l'âge de deux ans, Buff. *Pl. Enl.* 80. (young adolesc.)

199. §T. *albus*, Ord's ed. Ibis *albus*. Vol. viii. p. 43. Whether or not this is a real or nominal species, or a particular state of plumage of the pre-

ceding, can only be determined by observations on the living bird. On this subject Wilson expressed his doubts, in which we heartily agree with him. Although fully persuaded of the species being nominal, Mr. Ord permitted the name of *albus* to remain; we shall also call this bird Ibis *alba*, but it is because we are not satisfied of its being nominal.

SYNONYMES.

Tantalus *albus*, Linn. Gmel. Lath.
Tantalus *coco?* Gmel. (var. of age?)
Numenius *brasiliensis candidus*, Briss.
Courly blanc d'Amérique, Buff. *Pl. Enl.* 915.
Ibis *alba*, Vieill.
Ibis *coco?* Vieill. (var. of age.)

Vieillot states that although the Ibis *alba* may be confounded with the younger Ibis *rubra*, in its white state of plumage, yet it is distinct, being somewhat larger, (this, however, is not the fact, they are equal in size.) Some Ibis seen by d'Ulloa near the island of Juan Fernandez, white, with the breast and wings rose colour, may possibly be the adult of this species, which we must not then think of rejecting.*

* Another species of Ibis, unknown to Wilson, has been added to the ornithology of this country by Mr. Ord, who has given a good account and minute description of it in the Journal of the Academy, Vol. i. p. 53, under the name of Tantalus *mexicanus?* From his description we recognized it for the European Ibis *falcinellus*, and were confirmed in our decision by the specimen itself, which is well preserved in the Philadelphia Museum. As our synonymes will show, this bird has given rise to many nominal species. It is known to inhabit

NUMENIUS.

This is one of the few genera of Brisson, that were rejected by Linnè, but which Latham restored. Brisson did not distinguish from it the birds which constitute the present genera, TANTALUS and IBIS; but as fixed by Latham and adopted by all modern ornithologists, it is now very natural. Linnè ar-

Europe, Asia, and Africa, where it is so much celebrated as having been held sacred by the Egyptians. No bird ranges more extensively over the globe; it will appear in the second volume of my American Ornithology.

SYNONYMES.

IBIS *falcinellus*, VIEILL. TEMM.

TANTALUS *falcinellus*, LINN. GMEL. LATH. (adult.)

TANTALUS *igneus*, GMEL. LATH. (very old and beautiful specimen.)

TANTALUS *viridis*, GMEL. LATH. (young.)

NUMENIUS *castaneus*, BRISS. (adult.)

NUMENIUS *viridis*, BRISS. (young.)

Courly d'Italie, BUFF. *Pl. Enl.* 819, (adult male.)

TANTALUS *cayanensis*, GMEL. LATH. *Courly verd de Cayenne*, BUFF. *Pl. Enl.* 820, is thought by Vieillot, to be the same with the I. *falcinellus*; though at the same time he gives it the name of I. *sylvatica*, thus changing the name even of a species which he believed merely nominal. As the discovery of the I. *falcinellus* in America might give weight to this erroneous supposition, we take this opportunity of stating, that this bird is a distinct species, peculiar to South America, which we lately had an opportunity of examining, and which must be called IBIS *cayanensis*.

ranged the species, with which he was acquainted, in his immense genus SCOLOPAX, which was rather a family than a genus, and to which, as Cuvier observes, he ought, agreeably to his principle, to have united several of his TRINGÆ, &c. Although but one species is thus named by our author, yet two are described in his work, one being placed under the old name of SCOLOPAX. The genus is cosmopolite.

200. N. *longirostris*. Vol. viii. p. 23. This bird is one of the numerous evidences of Wilson's perspicacity and correctness of judgment in the discrimination of species; having been confounded by all ornithologists with the European N. *arquatus*, he judiciously separated it and gave it the present very appropriate specific name, which must of course be adopted.

SYNONYMES.

SCOLOPAX *arquata*, var. β. GMEL.

NUMENIUS *arquata*, var. β. LATH.

NUMENIUS *melanopus*, VIEILL. (he gives an account of this bird, and separates it from the European, without noticing Wilson; probably he had not seen his volume. The specimen, however, which he described from personal observation, belongs to the *borealis* of Wilson.)

SCOLOPAX.

When Wilson wrote, the great genera SCOLOPAX and TRINGA were in much confusion, and it is extraordinary that those two luminaries Illiger and Cuvier, though they have certainly improved, have not succeeded in elucidating them satisfactorily. Other

recent ornithologists followed by Temminck and Vieillot, have been more successful. We agree entirely with Temminck both as respects the number and limits of the separated genera. Wilson's arrangement is not free from the old confusion; thus of his eight SCOLOPACES, one is a NUMENIUS, one a LIMOSA, three are TOTANI, and only three are true SCOLOPACES; we shall, consequently, thus divide them. Species of all those genera are found in both continents, and with the exception of the LIMOSÆ, which inhabit only cold and temperate regions, are found in all climates.

NUMENIUS, Briss.

201. S. *borealis*. Ord's ed. NUMENIUS *borealis*. Vol. vii. p. 22. By an unfortunate occurrence, our very extensive collection of European birds is deficient of the NUMENIUS *phæopus*, and we cannot, therefore, compare with that bird, but with Wilson we firmly believe that this species is not the *phæopus*, but is peculiar to this continent, notwithstanding the opinion of several of the best living ornithologists. This species differs as much from the *phæopus* as the *longirostris* does from the *arquata*. Both the American species differ respectively from their European analogues, by having a longer bill, and the rump, lower portion of the back, and the tail-coverts of the general colour, instead of having those parts white.

Vieillot and Temminck, however, affirm that they have received the true *phæopus* from North America,

but that bird was not noticed by Wilson, neither have I met with it. Although there is no doubt that this species, which is the N. *hudsonicus* of Latham, is distinct from the *phæopus*, yet it is not the N. *borealis*,* Lath. This I have ascertained to be a distinct species, and will figure it in my American Ornithology. If, therefore, the European N. *phæopus* be really an inhabitant of North America, this country will then possess four species of NUMENII, viz. *longirostris*, *phæopus*, *hudsonicus*, and *borealis*.

SYNONYMES.

SCOLOPAX *borealis*, GMEL.

NUMENIUS *hudsonicus*, LATH.

NUMENIUS *melanopus*, VIEILL. a very accurate description of the present bird given as that of the young of his *melanopus*, a name which he has applied to the preceding species. Thus whilst he attributes to North America several nominal species, he has strangely confounded the two real ones.

LIMOSA, Briss.

A much restricted and very natural genus, formed by Brisson, but since united with SCOLOPAX by Linnè and Latham, with ACTITIS by Illiger, with TOTANUS by others, &c. Leisler restored the genus to the limits prescribed by its founder, and has been followed by Temminck, Vieillot, and others. The

* We do not know why Mr. Ord who changed the English name, did not also change the Latin one that they might correspond.

latter author, however, has taken the liberty to change the name to LIMICULA! Although but a single species is described by our author, yet another, common in Europe, the LIMOSA *melanura* of Leisler and Temminck, is also found here and will appear in my American Ornithology. That bird has been stated by recent writers not to inhabit the United States, from the circumstance of being unnoticed by Wilson.

202. S. *fedoa*. Ord's ed. LIMOSA *fedoa*. Vol. vii. p. 30. This large species first figured by Edwards, is peculiar to America, and has given rise to several nominal species, owing to its varieties of sex and age. The name of LIMOSA *fedoa* must be adopted for them all.

SYNONYMES.

SCOLOPAX *fedoa*, LINN. GMEL. LATH.
SCOLOPAX *marmorata*, LATH.
SCOLOPAX *hudsonica*, LATH. (young.)
LIMOSA *americana rufa*, BRISS.
LIMICULA *fedoa*, VIEILL.
LIMICULA *marmorata*, VIEILL. (Although he makes a species of it to which he affixes his name, he acknowledges that it is nothing but the female, or the male in winter dress of his *fedoa!*)
LIMICULA *hudsonica*, VIEILL. (young.)

SCOLOPAX, Linn. (as now restricted.)

The true SCOLOPACES may be divided into three subgenera, each of which has a representative in the United States.

Subgenus *Rusticola*, Vieill.

Considered by Vieillot as a genus. It contains but two species, and is distinguished from almost all other water birds by the very remarkable character of the thigh being perfectly covered with feathers as in the land birds; this anomaly has contributed to induce me to change the foundation of the primary distribution of the feathered tribe, in my synopsis of North American birds, not yet published, in order to establish it on more constant characters.

203. S. *minor*. Vol. vi. p. 40. It is worthy of remark that this bird, which so completely replaces here the S. *rusticola* of Europe, is a summer visitant, whilst its analogue, which is spread completely over the old continent, is a winter resident in the temperate climates and breeds in the north. As has been remarked of the hare, partridge, and indeed of all kinds of game, with the exception of the grouse and canvass-back duck, this species is much inferior in bulk and flavour to its European analogue.

This bird is a striking example of the impropriety of giving comparative names to animals; when naturalists called it S. *minor*, they compared it with the S. *rusticola*, and they applied the name of S. *major* to an European species as a distinction from its near relative S. *gallinago*: thus is S. *minor* larger than S. *major*! This statement is not made with a view to countenance any change in the name, far from it; it is that future naturalists may be warned against so pernicious an example.

SYNONYMES.

Scolopax *minor*, Gmel. Lath.
Rusticola *minor*, Vieill.

Subgenus *Scolopax*.

In this subgenus Europe is richer than North America, having four species, whilst the latter has but one. According to Temminck and Vieillot, however, all the European species inhabit North America; if this be the fact, they must be exceedingly rare, and have escaped the researches both of Wilson and myself.

204.* S. *gallinago*. Vol. vi. p. 18. Commonly known by the absurd name of English Snipe. The first time I shot this bird I ascertained it to be a new species, intermediate to S. *gallinago* and S. *major*, being much more closely allied to the former, from which it is hardly distinguishable, but having the number of tail feathers (16) equal to that of the latter, of which bird it has also the voice, the more regular flight, and some of the habits. I therefore drew up a description of the bird and was about to communicate it to the Academy as a new species, when I observed in the *Bulletin des Sciences Naturelles* for February, 1824, a notice of a new Scolopax, described by Mr. Kaup in the Isis, under the name of S. *brehmii*. He states it to be found accidentally in cold winters in the north of Germany, and that it is intermediate to the *gallinago* and *major;* this would almost be a sufficient indication of

the present bird, since it is almost impossible that any other species should exist between those two, which are so closely allied; and the addition of the short, but excellent phrase, the record of the circumstances under which it was found, as well as a detailed description in the work of Mr. Brehm, on the birds of Europe, since received, has dissipated all doubts on this subject; the bird must therefore be called S. *brehmii*. It is not a little unfortunate for describers of American birds, that they should have left one of their most common species to be established by a young student of Heidelberg, from a specimen strayed in Europe. To Mr. Kaup the highest credit is due for his success in a separation which Wilson did not dare to attempt. The S. *brehmii* must now be arranged amongst those birds which, like the following species, the TOTANUS *bartramius*, &c. are natives of America, but occasionally visit the European continent, more or less regularly. For this reason the sign of common residence is affixed to it, and not from the circumstance of its being the *English Snipe*, since it might, with much more propriety, be called *American Snipe*.

SYNONYMES.

SCOLOPAX *brehmii*, KAUP, BREHM, *Europ. Vog.* p. 623.

Wilson evinces his good judgment by not quoting any synonyme, by expressing a doubt relative to its identity with the *gallinago*, and even stating that it is probably a distinct species; otherwise, he observes, it must be partially changed by difference of climate.

How could he express such an opinion since he strenuously opposed such observations when made by Buffon. Vieillot must probably retract his assertion that the *gallinago* is found in more countries than any other bird, inasmuch as it has never been found in this hemisphere. It is very remarkable that Temminck quotes Wilson under his *gallinago*, notwithstanding the essential difference of the number of tail feathers.

Subgenus *Macroramphus*, Leach.

This subgenus which shows the transition from the genus SCOLOPAX to TOTANUS, and corresponds to the third section of Temminck's SCOLOPAX (*Bécassines Chevaliers*) is more closely allied to the preceding than that subgenus is to *Rusticola*. Vieillot has not distinguished it even as a section, but has unconsciously shown its difference by making of the only species belonging to it several nominal TOTANI. We have adopted for this subgenus the name given by Leach to an indicated genus in the Catalogue of the British museum, although he has not assigned to it any character; a similar division has also been proposed by Say, in the first volume of Long's Expedition to the Rocky Mountains, p. 171, likewise considered as deserving of generic distinction, and we may say, that the present subgenus was established by him, since although he neglected to give it a name (which we should have adopted) yet he has given it positive characters. It is, however, proper to remark that this learned zoologist on referring the species to LIMOSA instead of SCOLOPAX, (he states it to be

intermediate between the two) has so laid down the characters as to make them the more strongly contrast with those of LIMOSA. The only character by which it aberrates from SCOLOPAX and approaches TOTANUS and LIMOSA, is that of having the exterior toe connected at base to the middle one by a small membrane; a character, the importance of which is diminished by the circumstance of some species of the subgenus *Scolopax*, having a very slight rudiment of this membrane. But the habits are widely distinct from those of its congeners, and are more allied to those of LIMOSA and TOTANUS.

205.* S. *noveboracensis*. Vol. vii. p. 45. Ord's ed. p. 49. S. *grisea*. This is one of those American species which accidentally stray to Europe; its appearance in that quarter of the globe must be exceedingly rare, since Temminck has ascertained but two instances, of which one was in England and the other in Sweden, affording Nilsson an opportunity of making a nominal species. The difference between the summer and winter plumage, and the anomalous appearance of this Snipe, have led naturalists to make several nominal species of it.

SYNONYMES.

SCOLOPAX *grisea*, GMEL. LATH. TEMM. (adult in winter plumage.)

SCOLOPAX *noveboracensis*, GMEL. LATH. (adult in summer dress.)

SCOLOPAX *leucophræa*, VIEILL. (not of Latham, whose species is the young of LIMOSA *rufa* of Europe,) (changing to the summer dress.) We cannot admit this to be a new

species; it is evidently the S. *grisea* in a different state of plumage.

Totanus *ferrugineicollis*, Vieill. (summer dress of the adult.)

Totanus *griseus*, Vieill. (adult in winter; he describes it also as a Scolopax, twice in one genus, and thrice in the other.)

Scolopax *paykulli*, Nilsson, *Orn. Suec.* (adult in winter dress.)

Macroramphus *griseus*, Leach.

Limosa *scolopacea*, Say, in Long's Expedition to the Rocky Mountains, (adult in winter plumage.)

Totanus *noveboracensis*, Sabine, in Franklin's Expedition, (adult in summer dress.)

The name of Scolopax *grisea* ought probably to be exclusively retained for this widely extended North American species, having been chosen by those who first perceived that *noveboracensis* and *grisea* were but one species. Wilson, however, was aware of it, since in a note he quotes the brown Snipe of Pennant as a synonyme of the female, and as he chooses the name of *noveboracensis*, the propriety of changing that name might be questioned. He describes only the summer vesture, which renders it necessary that we should represent the species in its widely different winter dress.

Totanus, Bechst.

Species of this genus were scattered in Scolopax and Tringa, and so erroneous was the distribution, that in some instances the same species was placed in both genera: but according to the characters they

ought to have been all placed in SCOLOPAX. In company with the LIMOSÆ and the legitimate TRINGÆ, they formed the genus ACTITIS of Illiger. Bechstein was the first to arrange them separately, choosing a name which had previously been made use of for some of the species; he was followed by Cuvier, Temminck, Vieillot, and others. Not only the genus, but many of the species also, are cosmopolites. The three that our author arranged under SCOLOPAX are not the only TOTANI that he described; some of his TRINGÆ belong also to this natural genus, thus incorrectly separated, whilst many distinct genera were strangely confounded together under the names of TRINGA and SCOLOPAX. We are surprised that Wilson should have pursued a course so erroneous and unnatural, as he was generally very happy in detecting natural affinities.

206.* S. *semipalmata*. Ord's ed. TOTANUS *semipalmatus*. Vol. vii. p. 27. This is one of the American species which occasionally stray to the shores of Northern Europe; it is therefore admitted by Temminck in his *Manuel* amongst the European birds. The great difference which exists between the summer and winter vesture, has induced Vieillot to make a nominal species of the latter, which I shall represent in my American Ornithology, inasmuch as the former only is included in Wilson's Work. The species is well distinguished by its semipalmated feet; a remarkable character, which has been considered by some as generic, and which would be properly estimated as subgeneric.

SYNONYMES.

Scolopax *semipalmata*, Gmel. Lath. (summer dress.)
Totanus *semipalmatus*, Temm. (Vieill. summer dress.)
Totanus *crassirostris*, Vieill. (winter plumage.)
Glottis *semipalmata*, Nilsson, *Orn. Suec.*

207. S. *vocifera*. Vol. vii. p. 57. Ord's ed. p. 61. Totanus *melanoleucos*. This bird is undoubtedly the S. *melanoleuca* of Gmelin and Latham, first made known by Pennant. Why Wilson, who was aware of it, should have changed the name, we are at a loss to conceive; Mr. Ord was therefore right in restoring the true specific name. The species is peculiar to this continent, and by double employment has been unaccountably considered as a variety of an European species; Vieillot made a nominal species of this supposed variety.

SYNONYMES.

Scolopax *melanoleuca*, Gmel. Lath.
Scolopax *totanus*, var. *β*. Gmel. Lath.
Totanus *melanoleucus*, Vieill.
Totanus *sasashew*, Vieill.
Totanus *vociferus*, Sabine, (not of Vieillot, at least agreeably to the description of this author, who is wrong in quoting as a synonyme Latham's Scolopax *melanoleuca*, which is our bird, and which he, in the same work, states to be his Totanus *melanoleucus*!)

208. S. *flavipes*. Vol. vii. p. 55. Ord's ed. p. 59. Totanus *flavipes*. This species is peculiar to America, although it resembles some species of the old continent.

SYNONYMES.

Scolopax *flavipes*, Gmel. Lath.

Totanus *flavipes*, Vieill. (Sabine, undescribed summer dress.)

TRINGA.

The remarks we made respecting the Scolopaces of Wilson, are applicable to his Tringæ. Authors comprised at least as many natural genera under this head as under that of Scolopax, whilst other natural genera were indiscriminately scattered in both; Wilson rather increased than diminished the confusion by considering a Plover as one of the Tringæ, whilst he arranged a four-toed bird as a Plover. Of his eleven Tringæ, three are Totani, one forms the genus Strepsilas, one is a Charadrius, and six only are Tringæ; from this number, however, we must reject two as being different states of others, and therefore merely nominal species.

Totanus, Bechst.

This genus, as it had been dismembered by Wilson, is already spoken of under Scolopax, where we found three species; in Tringa we find four others, making seven species of Totani described by our author. Temminck and Vieillot attribute several other species to North America, but none, besides those of Wilson, have fallen under our observation, and we have been able to refer several of Vieillot's numerous *new* species to Wilson's. Some other species of this author may be referred with

doubt, but we prefer to omit them with this notice only, that our firm conviction is, that the greater number of his new North American TOTANI are merely nominal.

209.* T. *bartramia*. Vol. vii. p. 63. TOTANUS *bartramius*, Ord's ed. p. 67. A new and beautiful species, which has recently been found in Europe, and is admitted by Temminck in his *Manuel* as one of those birds the appearance of which in that country is accidental. Say informs me that this bird, so rare in the Atlantic states, is very common in some districts of the extensive Missouri prairies; thus confirming the opinion of Wilson that its residence is in the interior, and not on the sea coast like most of its congeners.

SYNONYMES.

TOTANUS *bartramius*, TEMM.

TRINGA *longicauda*, BECHST.

TOTANUS *campestris*, VIEILL. (from d'Azara, whose description leaves no doubt as to the identity; thus is our bird a visitant of South America.)

TOTANUS *melanopygius?* VIEILL. (The size is, however, smaller, and the remarkable shape of the tail is not mentioned, nor the colour of the lateral tail-feathers. Was not the tail deficient in his specimen? if so, it may account for the attributed smaller size, as that part may have been estimated as of an ordinary length. Vieillot does not mention either TOTANUS *bartramius*, Wils. or T. *longicauda*, Bechst. under these names.)

210. T. *solitaria*. Vol. vii. p. 53. Ord's ed. p. 57. TOTANUS *glareolus*. This was rightly given by

Wilson as a new species peculiar to this continent; he did not perceive that it had been indicated by Latham as a variety of his TRINGA *ochropus*. Mr. Ord has rejected Wilson's species by referring it to TOTANUS *glareolus* of Europe, to which it has certainly much resemblance; but we cannot admit their identity, since several European species approach as near to each other as the present does to *glareolus*.* Wilson's species will therefore remain as TOTANUS *solitarius*, or rather, that name having been applied by Vieillot to another species, as TOTANUS *chloropygius*, a name which he gave to the present.

SYNONYMES.

TRINGA *ochropus*, var. *β*. LATH.
TOTANUS *chloropygius*, VIEILL.

211.* TRINGA *macularia*. Vol. vii. p. 60. Ord's ed. p. 64. TOTANUS *macularius*. This fine little

* It differs from the latter not only as respects the character of the tail feathers, but also in being more minutely speckled, the white spots being smaller; by its longer tarsus; by the lineation of all the tail feathers, but especially the lateral ones, the bands being broader, purer, and much more regular, whilst the lateral tail feathers of the European species are almost pure white on the inner webs; by having the shaft of the exterior primary black, whilst that of the *glareolus* is white; and by other minor characters. We should have been glad of an opportunity of examining the two specimens shot by Mr. Ord, all the tail feathers of which were barred, and which corresponded exactly with T. *glareolus;* agreeably to his statements we are led to believe that the latter species is also an inhabitant of these states.

species is common to both continents, but is much more abundant in America. It has long since been distinguished from other species, by the handsome manner in which the inferior surface is spotted, but it is, notwithstanding, closely allied to several species, and principally to T. *hypoleucos*.

SYNONYMES.

TRINGA *macularia*, LINN. GMEL. LATH.
TOTANUS *macularius*, TEMM. VIEILL.
TRINGA *turdus aquaticus*, BRISS.

TRINGA, Linn.

Although we join the name of Linnè to this genus, we do not estimate it exactly as he did, since, as has been often said, his genus TRINGA was very comprehensive and unnatural. It approaches more to the genus TRINGA of Brisson, but even that has been limited, by removing the TOTANI and a few others. The genus, as adopted by Temminck, Vieillot, and ourselves, may be subdivided into three subgenera; first, TRINGA, toes entirely separated; second, MACHETES, outer toe connected at base with the middle one; this was constituted by Cuvier for the TRINGA *pugnax* of Europe; it has no representative in America: third, a new subgenus which I propose to institute under the name of *Hemipalama*, for the TRINGA *semipalmata* of Wilson, the characters of which will be, *toes semipalmated*.

Subgenus *Hemipalama.*

This new subgenus will connect still more intimately than MACHETES does the closely allied genera TRINGA and TOTANUS: it may almost be arranged in either, and may perhaps induce some naturalists to unite them agreeably to Brisson, and to add to them LIMOSA, after the example of Illiger; the great genus thus formed, ought to be called TRINGA, and not ACTITIS. At all events the characters of the genus TRINGA, even those of Temminck and of Vieillot must be altered, in order to comprehend the present subgenus.

212. TRINGA *semipalmata.* Vol. vii. p. 131. Ord's ed. p. 137. This was given by Wilson as a new species, or as one that had always been confounded with the following. We, however, think that it is clearly indicated by Brisson in the description and figure of his TRINGA *cinclus dominicensis minor,* on which *exclusively,* Linnè has established his TRINGA *pusilla.* The latter was unaccountably confused by Gmelin and Latham, who added synonymes and details that do not relate to it, but to an European species, the little Sandpiper of Latham. The semipalmated feet noticed by Brisson, clearly prove our assertion. It is, therefore, not correct to state that this species has been confounded with TRINGA *pusilla,* from which it is easily distinguishable by the character of its feet, since it is the real TRINGA *pusilla,* and the other an intruder.

We should, therefore, propose to restore its legi-

timate name, were it not for the following reasons: 1st, several species have been confounded together under the name of T. *pusilla;* and although the present is the real species, it would be adding to the existing confusion to change the most appropriate name of *semipalmata,* given by the author who first separated the species, in order to apply a name generally given to another, to which we ought, in that case, to give a new name. 2nd, Though pretty well satisfied that this is the *pusilla* of Linnè, from the circumstance of his quoting Brisson only, yet we cannot help observing that the under parts are indicated in the description as being more rufescent, and that it may therefore be a distinct bird. These reasons induce us to adopt the appropriate name given by Wilson, who certainly had, at all events, the merit of distinguishing two species out of the compound T. *pusilla,* both of which are peculiar to America.

SYNONYMES.

TRINGA *cinclus dominicensis minor*, BRISS. (Unaccountably quoted by Vieillot under his TOTANUS *pusillus*, a bird which he states to be spread over all North America, but which we have never seen; he further says that it has improperly been referred to TRINGA *pusilla.* We do not know what it is; probably not a real species.)

TRINGA *pusilla?* LINN. not of Gmel. and Lath. (although they have preserved the Linnæan phrase. So little can we rely on these TRINGA phrases!)

TRINGA *semipalmata*, VIEILL. (from Wilson.)

Subgenus *Tringa.*

Five species of this subgenus are described by our author, but his T. *cinclus* being no other than his T. *alpina*, in winter plumage, and his *cinerea* being the young of his *rufa*, the real number is reduced to three. Temminck and Vieillot mention several others as inhabitants of the United States; and we have no doubt of the existence of several in this country, not recorded by Wilson. Thus Say, in his valuable notes to Long's Expedition, has enriched the ornithology of his country with a beautiful species, which seems to us to be TRINGA *cinclus dominicensis* of Brisson, a bird accurately described and figured by that author, but since unnoticed; it is closely allied to T. *alpina*, and hardly distinguishable from it but by its larger size and shorter bill. Say's T. *cinclus* var. may also prove to be an addition to the American Ornithology; we believe it to be the new European species hitherto confounded with T. *alpina*, and lately separated by Brehm, in his work on the birds of Europe, under the name of T. *schinzii*, in winter plumage. Both will appear in my American Ornithology.

213. T. *pusilla.* Vol. v. p. 32. This species is peculiar to America, notwithstanding Wilson's statements, and although Sabine has referred it to T. *minuta* of Europe. The size of the tarsus, which is remarkably long in *minuta*, whilst it is short (less than $\frac{3}{4}$ of an inch) in *pusilla*, if no other character, proves it entirely distinct; though it is certainly

closely allied both to that species and to T. *temminckii*.

Although it is not the T. *pusilla* of Linnè, as we have proved, yet as that species will probably be abolished according to what we have stated under the preceding species, we shall permit Wilson's name to remain. It is much to be regretted that Wilson's first impression relative to this bird being a variety of some other species, probably of his *semipalmata*, induced him to reduce the size of his figure so much as to render it absolutely useless.

SYNONYMES.

T. *pusilla*, (not of Linnè.) GMEL.? LATH.? VIEILL. It is strange to see this author, who quotes Wilson's plate, state that it is TRINGA *cinclus dominicensis minor* of Brisson, which he has correctly represented, on another occasion, to be erroneously placed under T. *pusilla*. The toe membranes of that bird will always prevent naturalists from referring it to the present species with any appearance of good reason; neither can it be Vieillot's TOTANUS *pusillus*, (a doubtful species) as is proved by the orange feet, white lateral tail feathers, &c.; not one of the characters he attributes to his bird corresponds with the present. Brisson's bird is, therefore, either an independent species, (at all events the TRINGA *pusilla* of Linnè) which cannot be our bird, or, as we have stated, it is the TRINGA *semipalmata* of Wilson; we must confess, however, that the under parts are indicated as rufescent in that bird; and, as we read in Temminck's *Manuel* (in a note) that an extra European species is really so, we must hesitate to permit Wilson's name to remain, and should the true *pusilla* be a distinct species, we must give a new name to the present bird, or apply to it the fol-

lowing synonyme of Vieillot, if we are right in our supposition that it belongs to it.

SYNONYME.

TRINGA *minutilla?* VIEILL.

214.* T. *alpina.* Vol. vii. p. 25. This bird is widely spread over both continents, but the American specimens are, on an average, larger than those of Europe. Its changes are very considerable, and with other authors Wilson described the summer plumage as belonging to a different species from that of the winter. The species is now generally known as T. *variabilis*, but, in addition to the fact that this name would be equally applicable to other Sandpipers, we cannot admit any excuse for changing specific names, and shall, therefore, retain the somewhat inappropriate name of T. *alpina*, which could only be changed with any appearance of propriety, for that of T. *cinclus*, which is also a Linnæan name for the same species in a different state of plumage.

SYNONYMES.

TRINGA *alpina*, LINN. GMEL. LATH. (summer dress,) VIEILL.? (he states the size to be only six French inches.) He corrects an error (*which he creates*) of Temminck, by saying the latter is right in quoting TRINGA *cinclus* of Briss. but evidently wrong in quoting T. *cinclus minor* of the same author, as synonymes of this species. The latter, says he, is my TRINGA *pusilla*. He means to say, that his TRINGA *pusilla* is TRINGA *cinclus dominicensis minor* of Brisson; but even in this he is mistaken; and Temminck quotes the var. a. *minor* of Brisson's TRINGA *cinclus!* That bird may be different from the present, and it may possibly be T. *schinzii* of

Brehm, but it is certainly Vieillot's *alpina* which is six inches long.

Tringa *cinclus*, Linn. Briss. Gmel. Lath. (winter plumage.)

Tringa *ruficollis*, Gmel. Lath. (spring moulting.)

Scolopax *pusilla?* Gmel. (moulting.) Is it not rather T. *schinzii*, Brehm?

Tringa *cinclus torquatus*, Briss. (moulting.)

Scolopax *gallinago anglicana?* Briss. (moulting.) Is it not rather T. *schinzii?*

Tringa *variabilis*, Meyer, Temm. Sabine.

Le Cincle, Buff. *Pl. Enl.* 852, (moulting.)

L'Alouette de mer? Buff. *Pl. Enl.* 851, (moulting.) With Vieillot we do not think this plate intended for Tringa *subarquata*, Temm. as it is thought by Meyer and Temminck.

215.*† T. *cinclus*. Ord's ed. T. *alpina*. Vol. vii. p. 39. This being no other than the winter vesture of the preceding, it must be altogether erased from the list of species. In this case Wilson followed European authors, who all committed the same error, as may be ascertained by the synonymes which have been of course quoted under the preceding. Wilson's figure and description do not relate to the perfect winter dress, which is more uniformly cinereous; some vestiges of the summer dress are still to be observed in it. The two specimens, male and female, shot by Mr. Ord below Philadelphia, and which he thought young, belonged probably to T. *schinzii*, Brehm, (T. *cinclus*, var. Say.)

216.* T. *rufa*. Vol. vii. p. 43. Ord's ed. p. 47.

This was given by Wilson as a new species; but he perceived a close alliance to the species to which it really belongs. The editor permitted the specific name to remain, but gave the synonymes with doubt. He enquires, Is this bird T. *islandica?* Even in that case is T. *islandica* the perfect adult plumage of T. *cinerea?* We are gratified to be able to state from minute observations and comparisons, that T. *rufa* is no other than T. *islandica in the same state of plumage.* T. *cinerea* is the same bird in winter dress. Thus has Wilson added a new name to a species that had already seven, whilst he described it under two different heads. The first error is excusable from the want of opportunities of comparison, whilst the other is common to all other authors, who have moreover described the same changeable species, not only twice, as Wilson did, but *seven times.* The name of T. *islandica* must be exclusively applied to them all, both in America and Europe.

SYNONYMES.

Tringa *islandica*, Linn. Gmel. Lath. (This author is wrong to quote a species which is Tringa *subarquata*, Temm. easily distinguished by its curved bill, &c.) (summer dress.) Brehm.

Tringa *cinerea*, Gmel. Lath. (winter plumage.) Temm.

Tringa *grisea*, Gmel. Lath. (winter plumage.)

Tringa *canutus?* Linn. Briss. Gmel. Lath. (winter plumage.) If this synonyme were not a little doubtful and proper to an anomalous state, it ought, as prior, to be applied to the species.

Tringa *nævia*, Gmel. Lath. (young.)

Tringa *australis*, Gmel. Lath. (young.)

Tringa *calidris ?* Linn. Gmel. Lath. (moulting.) If it does not relate to this species it does to the preceding, (T. *alpina*) and must at all events be rejected from the list of beings.

Tringa *calidris*, Briss. (young in spring.)

Tringa *calidris nævia*, Briss. (young, changing;) the figure only, not the description.

Tringa *calidris grisea*, Briss. (winter plumage.)

Maubèche grise, Buff. *Pl. Enl.* 366. (winter plumage.)

Maubèche tachetée, Buff. *Pl. Enl.* 365. (young in the first spring.)

Tringa *ferruginea*, Meyer, Vieill.

Totanus *ferrugineus*, Vieill. (summer dress.)

217.*† T. *cinerea*. Vol. vii. p. 36. This species must be eliminated, as it is no other than a different state of the very changeable T. *islandica*, of which so many nominal species have been made. Wilson's description and figure are those of a very young specimen before the first moult.

Strepsilas, Illig.

Consists of but one species, which is spread all over the globe. Brisson had correctly established the genus, which Linnè afterwards abolished, under the name of Arenaria, and Vieillot has adopted that name notwithstanding that it is pre-occupied in Botany.

218. T. *interpres*. Ord's ed. Strepsilas *interpres*. Vol. vii. p. 32. A well known species, sub-

ject to many variations of plumage, owing entirely to age, the sexes being nearly similar. Wilson figures a perfect adult male, and gives an excellent history of the species. It must now be called STREPSILAS *interpres*.

SYNONYMES.

TRINGA *interpres*, LINN. GMEL. LATH.
TRINGA *morinella*, LINN. (young.)
TRINGA *interpres* β. *morinella*, GMEL. LATH. (young.)
STREPSILAS *collaris*, TEMM. BREHM.
ARENARIA *interpres*, VIEILL.
ARENARIA, BRISS. (adult.)
ARENARIA *cinerea*, BRISS. (young.)
Coulond-chaud, BUFF. *Pl. Enl.* 856. (adult.)
Coulond-chaud gris, BUFF. *Pl. Enl.* 857. (very young.)
Coulond-chaud de Cayenne, BUFF. *Pl. Enl.* 340, (very young, stretched beyond measure in the stuffing.)

Cuvier is wrong to consider these plates as belonging to a distinct species peculiar to South America.

CHARADRIUS.

It is so unaccountable that Wilson should have referred the following Plover to TRINGA, that we feel no hesitation in stating that the word TRINGA placed before *hiaticula*, is undoubtedly a typographical error, which, however, appears also in the index. In this assertion we are corroborated by the very definite characters of the genus, and by the fact that Wilson calls his bird a Plover and not a Sandpiper. He further considered his CHARADRIUS *hiaticula* as

a variety of his TRINGA *hiaticula*, (he called both Ring-plovers) and, even since, was not so well satisfied of their being distinct species as to apply a name to his supposed variety; how then can we admit that he considered them as belonging to different genera? We must therefore conclude that he considered this bird, as in justice he ought, a CHARADRIUS.

219. TRINGA (a typographical error, it ought to be CHARADRIUS) *hiaticula*. Vol. vii. p. 65, Ord's ed. CHARADRIUS *hiaticula*, p. 69. Is accurately described and figured by our author, but some of the synonymes belong to an allied European species of a smaller size. The remark made by Mr. Ord relative to the difference between the union of the toes in American and European specimens, is no less extraordinary than correct; I have verified it on the specimens in my collection. This character would seem to show in the most positive manner that they are distinct, but allied species, differing from each other as TRINGA *semipalmata* of Wilson differs from his TRINGA *pusilla*. I have been endeavouring to discover some other markings on my stuffed specimens, that might enable me to establish the species on a more solid basis; but though certain small differences are discernible, such as the somewhat smaller size, and the black narrower collar of the American, &c. yet we are aware that such trifling differences occur between individuals of the same species; we shall therefore not rely on them until our observations shall have been repeated on numerous recent or living specimens. In the mean time should the spe-

cies prove to be distinct, of which we have no doubt, it may be distinguished by the appropriate name of CHARADRIUS *semipalmatus*.

The synonymes of the European C. *hiaticula*, are the following:

CHARADRIUS *hiaticula*, LINN. GMEL. LATH. TEMM. VIEILL.
PLUVIALIS *torquata minor*, BRISS.
Le Pluvier à collier, BUFF. *Pl. Enl.* 920.

CHARADRIUS.

This genus formerly contained almost all the three-toed GRALLÆ, but as now restricted by the separation of the genera HIMANTOPUS, ŒDICNEMUS, CALIDRIS, &c. it is very natural. The genus PLUVIALIS of Brisson approached nearer to the present arrangement than any other, as it contained only the illegitimate ŒDICNEMUS. In the index are seven species given as Plovers; but of these, two belong to the genus CALIDRIS, and are in reality but different states of one species; one is a four-toed bird belonging to the genus VANELLUS of Brisson, which had never been arranged with the Plovers, but was a Linnæan TRINGA. Wilson, however, was more judicious in arranging it with CHARADRIUS, since it is certainly more closely allied to that genus than to TRINGA. Thus but four true CHARADRII are described as such by Wilson, and if we add the above mentioned bird erroneously called a TRINGA, we shall have five CHARADRII described by our author, and they are, probably, all the species except one, inhabiting these states.

220. C. *hiaticula*. Vol. v. p. 30. Was at first given by Wilson as a variety, of which he intended to describe the type in a future volume, but when he did so in the seventh volume, he clearly and positively pointed out the differences in markings, habits, migrations, voice, &c. between the two, which he then considered as distinct species; he thus, in reality, established the species, but without applying a new name, and we have no doubt that if he had made out the index himself he would then have supplied the deficiency, as he had before done in respect to some land birds. However, Mr. Ord has supplied this void by calling it C. *melodus*. We cannot help expressing our regret that this name of Wilson, repeatedly objected to, in these observations, as being ungrammatical, should be again brought forward. Bad as it is, it must still be preserved; and Mr. Ord informs us that it would have been Wilson's choice. The words *musicus*, *canorus*, and others, would have correctly conveyed the same appropriate meaning.

I have carefully examined and compared the species, and have no doubt of its being distinct and new; this may account for the unjust censure of Wilson's figure by Temminck, who thought it intended for the C. *hiaticula*, a censure which has been repeated and aggravated by Sabine; Wilson had stated the bird to be a variety, and the figure would of course be somewhat different. We can see no other fault in the figure than its extremely diminished size, which renders it almost useless. On this account, as the bird is now admitted to the rank of a new

species, I shall give a figure of it of the natural size in the second volume of my American Ornithology. As Mr. Ord very properly observes, the inner toe is separated to the base; by which character it approaches more closely to C. *hiaticula* of Europe than to C. *semipalmatus* of America. Being a new species, the synonymes quoted by our author do not belong to it, and they do not, moreover, relate to one and the same species.

221. C. *wilsonius*. Vol. ix. p. 77. A very rare species established by the editor and dedicated to Wilson. It is the first homage of the kind paid to the memory of this great and lamented self-taught naturalist. The descriptions of several species in the works of former authors, come more or less near to it, but after a careful investigation we are satisfied that it is new.

SYNONYME.

Charadrius *wilsonius*, Vieill. (from Wilson's work.)

222. C. *vociferus*. Vol. vii. p. 73. Ord's ed. p. 77. A beautiful and well known American species, described several times by former authors.

SYNONYMES.

Charadrius *vociferus*, Linn. Gmel. Lath. Vieill.
Charadrius *torquatus*, Linn.
Charadrius *jamaicensis?* Gmel. Lath. Vieill.
Pluvialis *virginiana torquata*, Briss.
Pluvialis *dominicensis torquata*, Briss.
Pluvialis *jamaicensis torquata?* Briss.
Pluvier à collier de St. Domingue, Buff. *Pl. Enl.* 286.

223.* C. *pluvialis*. Vol. vii. p. 71. VANELLUS *helveticus*, Ord's ed. p. 75, (a different bird from that of Wilson.) The editor has rejected from Wilson's work this beautiful species, so widely spread over the globe. That Wilson confounded the young of VANELLUS *helveticus* with it, is obvious, and every naturalist knows how readily they may be mistaken for each other. But as he had very properly introduced this species into his ornithology, all that was afterwards required was to correct the error by separating the two species, and placing all that had relation to VANELLUS *helveticus* in its article. That Wilson had the real Golden Plover in view, is proved by his statement, that the feet are "*three-toed*, with *generally* the slight rudiments of a heel." This shows beyond the possibility of a doubt, that those with the slight rudiment were VANELLI, and that those without any were CHARADRII, and that the greater number of individuals observed by Wilson, were of the former genus. There can be no doubt that Wilson's figure is taken from the genuine C. *pluvialis*, as is proved by a greater brilliancy of colouring than is ever exhibited by the young of VANELLUS *helveticus*, and especially by the slenderness and general shape of the bill, though on a close inspection the plate exhibits a doubtful indication of the rudimental toe, (a deviation from nature that may be explained by the circumstance that Wilson did not believe that appendage to be specific;) and as the text must be intended to elucidate the plate, the editor ought to have made a new article referring exclusively to the

CHARADRIUS *pluvialis*. No notice being now taken of that interesting and delicious bird, we shall supply this omission in our American Ornithology. The editor appears to be of opinion that the C. *pluvialis* is altogether foreign to America, and states that all the American birds hitherto referred to that species, were young of VANELLUS *helveticus*. But we can assert from our own observation that they are common even in the Philadelphia market.

SYNONYMES.

CHARADRIUS *pluvialis*, LINN. GMEL. LATH. (winter dress.) TEMM. VIEILL.

CHARADRIUS *apricarius*, LINN. GMEL. LATH. (summer dress,) (not of Wilson, which is a four-toed bird, VANELLUS *helveticus*.)

PLUVIALIS *aurea*, BRISS. (winter dress.)

PLUVIALIS *aurea minor*, BRISS. (winter dress.)

PLUVIALIS *dominicensis aurea*, BRISS. (winter dress.)

PLUVIALIS *aurea Freti Hudsonis*, BRISS. (summer dress.)

Le Pluvier doré, BUFF. *Pl. Enl.* 904, (winter dress.)

VANELLUS, Briss.

This genus contains those Linnæan TRINGÆ and PARRÆ which have a Plover bill, and are therefore much more intimately allied to CHARADRIUS than to TRINGA. Indeed we consider them as so closely related that we doubt the propriety of considering VANELLUS as a genus; at any rate we are strongly inclined to unite the subgenus *Squatarola* of Cuvier (Vanneaux-Pluviers of Temminck) with the genus

CHARADRIUS, the only difference being the slight rudiment of a hind toe; and it is certainly rather injudicious to separate generically, two species that are so much alike as to be generally mistaken for one another, even by Ornithologists. The genus VANELLUS ought to consist of the V. *cristatus* of Europe, the V. *cayanensis*, *senegalus*, &c. it would then have no representative in North America.

Subgenus *Squatarola*, Cuv.

224.* CHARADRIUS *apricarius*. Vol. vii. p. 41. Ord's ed. VANELLUS *helveticus*, p. 42. Wilson evinced his good judgment by arranging this species with the Plovers rather than with the TRINGÆ; but he committed an error by applying to it the name of C. *apricarius*, a name which belongs to a three-toed species, the preceding in its summer dress. His not considering the want of a hind toe as a constant character, was probably the cause of his error, which Mr. Ord has corrected. The bird is common to both continents, and is generally known by the name of VANELLUS *melanogaster*. Mr. Ord, however, with Vieillot, judiciously called it V. *helveticus*, as being the first name given. Owing to its remarkable changes several nominal species have been made of it. Agreeably to my view of the affinity of this bird I shall call it CHARADRIUS *helveticus*.

SYNONYMES.

VANELLUS *helveticus*, BRISS. (summer dress.) VIEILL.
VANELLUS *griseus*, BRISS. (winter dress.)

Vanellus *varius*, Briss. (young.)
Vanellus *melanogaster*, Bechst. Temm.
Tringa *squatarola*, Linn. Gmel. Lath. (winter plumage.)
Tringa *varia*, Linn. (young.)
Tringa *squatarola* β *varia*, Gmel. Lath. (young.)
Tringa *helvetica*, Linn. Gmel. Lath. (summer dress of the adult.)
Le vanneau varié, Buff. *Pl. Enl.* 923, (winter dress.)
Le vanneau gris, Buff. *Pl. Enl.* 854, (young.)
Le vanneau suisse, Buff. *Pl. Enl.* 853, (summer dress of the adult.)

Wilson states that this bird, when young, may be easily confounded with the C. *pluvialis*, but that it may be readily distinguished by the larger size, and proportionally larger head and bill; in this he is perfectly right. But "the *greater number* of those which I have examined," says he, "have the rudiments of a hind toe." We would remark that all those destitute of a hind toe were Golden Plovers in summer dress, and had therefore small heads and bills.

Calidris, Illig.

Was first established by the German Ornithologists under the name of Arenaria (but we must not confound this with the Arenaria of Brisson and Vieillot, which is our Strepsilas) but as this was preoccupied in Botany it was changed by Illiger to the present name, and has been adopted by all modern writers.

It consists of the following species only, which is found in almost all parts of the globe, and has been

described thrice by Gmelin, and twice by our author. The circumstance relative to the classification of this genus is analogous to that of the genus VANELLUS; though much more closely allied to TRINGA, (of which perhaps it ought to form a subgenus) it had been arranged with the CHARADRII on account of their three-toed feet, as the VANELLI had been placed under TRINGA because of their four-toed feet. We are surprised that Wilson did not make this change, as he did, though inadvertently, in the case of the preceding species. The species had also been placed in TRINGA. Wilson was fully aware of the impropriety of arranging this bird with CHARADRIUS, although he did not venture a change.

225.* C. *calidris*. Vol. vii. p. 68. Ord's ed. p. 72, CALIDRIS *arenaria*. Must be known by the name of CALIDRIS *arenaria*; the figure represents the bird in its winter dress. Wilson positively states that the Ruddy Plover is the same bird in summer plumage, generally mistaken for a distinct species. He moreover promises a figure of that state; but he afterwards considered it as distinct.

SYNONYMES.

CALIDRIS *arenaria*, ILLIG. TEMM.
CALIDRIS *rubidus*, VIEILL.
TRINGA *arenaria*, LINN. GMEL. (winter dress.)
CHARADRIUS *rubidus*, GMEL. LATH. (summer dress.)
CHARADRIUS *calidris*, LINN. GMEL. LATH. (young.)
TRINGA *calidris grisea minor?* BRISS. (winter dress.)

226.*† CHARADRIUS *rubidus*. Vol. vii. p. 129.

Ord's ed. CALIDRIS *arenaria*, p. 135. The preceding species in perfect summer plumage.

HÆMATOPUS.

A well marked genus, spread over the globe, and composed of but three well ascertained species, one only of which inhabits the United States, though another is vaguely stated to be found on the north-west coast of America.

227.* H. *ostralegus*. Vol. viii. p. 15. Common to Europe and North America. The South American species is distinct. Wilson's figure represents the summer plumage. Mr. Ord makes a remark by which he would seem to doubt the propriety of considering the North American the same as the European species. The tail of the latter, says he, "is black, whilst that of the former is white, largely tipped with black." We have before us specimens from both countries, and find them perfectly similar. both having the tail white at base and black at tip.

SYNONYMES.

HÆMATOPUS *ostralegus*, LINN. GMEL. LATH. TEMM. VIEILL.
OSTRALEGUS *pica marina. vulgo dicta*, BRISS.
L'Huitrier, BUFF. *Pl. Enl.* 929, (winter plumage.)

(TO BE CONTINUED.)

Descriptions of four new species of MURÆNOPHIS. *By* C. A. LESUEUR. *Read July* 19, 1825.

1. M. *macularia*. Pl. iv. fig. 1. Head long; gape very wide; spots of a dirty white on the back, forming a kind of chain; other smaller spots on the sides; colour pretty deep brown.

Body nearly cylindrical anteriorly, compressed towards the tail: *dorsal fins* commencing on the nuchæ, very narrow and united to the anal: *head* and *body* covered with whitish spots, which form upon the back a kind of chain; head narrow, snout pretty long: *mouth* deeply cleft, armed with long and fine teeth: *eyes* small, placed between the angles of the jaws and the extremity of the snout: *nostrils* tubulous, prominent: *operculæ*, or rather the skin which supplies their place, very dilatable: branchial opening very small: *lateral line* indistinct.

Inhabits among the rocks and madrepores of Barbadoes; very active, and slides so swiftly between them that it is very difficult to take. The figure is of the natural size.

2. M. *zebra*. Pl. iv. fig. 2. Body much compressed, bright yellow, with spots and irregular bands of deep black, which give it a resemblance to the disposition of colours in the *zebra;* jaws equal; teeth short, conic, pointed.

This species, whose body is very much compressed, is distinguished by the opposition of the yellow and

black colours, and by the black spots and vertical bands which cover the body.

Head small: *gape* moderate: *snout* obtuse, rounded: *fins*, although appearing confounded with the body, tolerably large: *dorsal* united with the anal, and commencing near the nucha: *lateral line* indistinct.

The rocks and madrepores afford it shelter, where it glides with agility, and is, like the preceding, difficult to catch.

The figure represents the animal of the natural size.

3. M. *ocellata*. Pl. iv. fig. 3. *Body* slender, cylindrical, serpentiform, of a rufous colour, ornamented with round and distant spots of orange, edged with blue; dorsal fin pale, edged with blue, united to the anal: *head* short, covered with small round orange spots: *jaws* unequal: *teeth* conic, obtuse.

This exceeds the preceding in length, and is also more agile; its cylindric and attenuated body enables it to pass readily between the rocks and corals of the shores of Barbadoes, where I discovered it and the preceding species during my stay in this island in 1815, in company with Mr. Maclure.

4. M. *bengalensis*. From sixteen to seventeen elongated spots on the dorsal, and a straight band of black on the anal fin; eyes large; body covered with numerous round spots.

Body 14 inches long, $1\frac{1}{2}$ inches in depth upon the nucha; elevated anteriorly and gradually diminishing

in depth towards the tail, giving it an elongated lanciform appearance: *head* straight, compressed: *snout* short, with mucous pores on the sides: *jaws* unequal, armed with conic, sharp teeth: *lips* small: *gape* one inch in length: *inferior jaw*, as in the preceding species, susceptible of considerable extension, to facilitate the entrance of the food; numerous plaits of skin on the sides to permit the throat and branchiæ to dilate: *branchial opening* very small: *teeth* in the throat: *eyes* very large: *dorsal fin* commencing over the branchial opening: *colour* blackish-brown, with numerous yellowish spots over the body.

This beautiful species does not appear to me to have been described; it was brought from the coast of Bengal.

Note on the genus CONDYLURA *of Illiger. By* J. D. GODMAN, M. D. *Read July* 19, 1825.

As several very interesting external characters peculiar to the CONDYLURA *cristata* have been entirely overlooked by those who have heretofore written on this subject, the object of this note is to supply the deficiency as far as possible, especially as these characters may be very serviceable in enabling us to compare the present genus with some others.

The CONDYLURA *cristata* is destitute of an auricle projecting above the level of the skin, but is, never-

theless, provided with an extremely large external ear, as we may properly consider all that part which is entirely exterior to the tympanum and skull. The meatus externus is $\frac{1}{2}$ an inch long, having a distinctly marked tragus and anti-tragus, and is situated at a short distance from the shoulder, in the broad triangular fold of integument connecting the fore-arm and head, and may be very easily missed by those who merely examine stuffed skins, or specimens preserved in spirits. From the meatus, the course of the cartilaginous tube is obliquely downwards, forwards, and inwards, until it terminates in a delicate bony tube, previous to reaching the tympanum, which is large and composed of a very delicate membrane.

The scales on the anterior and posterior extremities have been mentioned in general terms by several writers, especially by *Desmarest*, who has given the best description of the animal that has yet appeared. But these scales are so peculiar and uniform in their position, that I cannot understand how a naturalist could pass over the particulars of their arrangement in silence.

On the anterior extremities the superior or ulnar edge of the hand has on its anterior surface, (regarding the position of the animal) a row of corneous scales, about nine in number, which are broadest midway from the carpus to the first phalanx of the fifth finger. Another row of scales commences on the inferior part of the back of the little finger, becoming broader and of a semilunar figure as they extend towards the metacarpus, between these two a much

smaller row is placed. The fourth finger has a single row of small scales on its upper posterior side, and a large one extending along the back of the finger to the metacarpus; the middle finger has a small central row, which is distinguishable; that on the fore finger is still more feint; the thumb has none but very small ones on its central posterior part, but on its inferior posterior part, or radial edge, it has one scale of considerable size on the phalanx, and four or five between this part and the carpus; the two nearest the scale on the phalanx are largest.

The surface of the palm of the hand is covered with small circular scales, extending most numerously, and of a darker colour from opposite the root of the thumb obliquely outward to the basis of the little finger.

On the inferior extremities, the whole of the superior surface of the foot is covered with minute, blackish, circular scales, which increase slightly in size as they approach the toes. On the anterior part of the fourth toe is a large central row of black scales, and on the fifth a rather smaller one; hence these toes have a very considerable resemblance to the toes of a bird. The other toes of the hind foot being applied with their anterior surfaces to the ground, have the scales very minute and almost colourless.

The colour of the scales varies on different parts of the hand. On so much of the back of the hand as is formed by the fourth and little fingers, the scales are very dark blue, approaching a black, in the living animal; thence to the large scales of the

thumb the colour changes to a feint purplish blue, which is little more than distinguishable.

Two other excellent characters belonging to the palm of the hand have been neglected; the first is the enlargement of the carpal edge of the palm by an elongation of the integuments; this, in addition to the row of bristles that margins all the rest of the palm, has two distinct bristly hairs at its superior and inferior edge, more than $\frac{1}{8}$ of an inch long. The second character is still more striking; it is a process of the palmar cuticle on the superior edge of the thumb and three succeeding fingers. These processes are serrated and directed obliquely upwards and outwards; the serrations on the thumb being two, and on the three succeeding fingers three in number.

On the soles of the (posterior) feet another character is found, which consists of five circular, distinct spots, so arranged that the two nearest the body are parallel with each other, opposite the commencement of the first toe, counting as in the human subject, from the one nearest the median line of the body; the superior spot is nearly in a line with the fourth toe, and larger and darker coloured than the inferior; the two succeeding spots (nearer the extremity of the toes) are also parallel with each other; the exterior one is largest of all these plantar scales, and placed nearly over the extremity of the metatarsal of the fourth toe; the inferior spot is nearly over the root of the second toe; the fifth or single scale is placed in advance of all the rest, and is situated im-

mediately over the centre and behind the separation of the third and fourth toes.

A very analagous arrangement may be observed in the sole of the feet of the SIGMODON *hispidum* of Ord.

By comparing the CONDYLURA with the SCALOPS, we are led to several interesting observations. We have seen that the CONDYLURA has a remarkable and large external ear, though it is destitute of a projecting auricle. The Scalops has neither auricle nor meatus externus opening on the side of the head, as the skin of the head extends over the cartilaginous tube, which is small, and a simple funnel. The situation of the ear is to be discovered externally only by a very small spot, not larger than the circumference of an ordinary pin head.

The hand of the Scalops is peculiar for its great breadth and strength: the extraordinary breadth is produced by an additional metacarpal bone, inferior or external to the thumb, articulated with the carpus, and having a tendon for moving it from the common flexor of the fingers.* On the superior or ulnar edge of the hand there is a cartilaginous additament, connected with the little finger by a tendon. The CONDYLURA has the additional metacarpal bone, but rather like a rudiment, and has not the cartilaginous additament at the superior edge of the hand; hence the very great difference in breadth in the

* This structure resembles that of the TALPA *europæa*, but as that species does not exist in this country, I have not been able to obtain a recent specimen for comparison.

hands of the two genera. The Scalops has a slight process or elongation, not at the carpal extremity of the palm, but on the inferior or outer edge of the supplementary bone.

If we compare the Scalops and CONDYLURA with the description of TALPA *europea*, the resemblance will be found greater between the CONDYLURA and TALPA in regard to the ears and eyes. If we compare the hands and nose we shall find that the Scalops approximates more closely to the European genus; nevertheless, the affinity of neither is so strong as to endanger their being confounded with TALPA, if we were to judge from external characters alone.*

Of the genus CONDYLURA I believe after a patient examination, and obtaining specimens from various localities, that most probably there is no other species in this country than the *cristata*.† The only evidence of the existence of a *longicaudata* is that given by Pennant, who describes it without refer-

* I am happy to state from actual and repeated observation, that it is the SCALOPS which in this country forms the "*mole-hills*," similar to those thrown up by the TALPA *europea*. As far as I can ascertain, no such circumstance has yet been remarked relative to the burrowing of the CONDYLURA. In a forthcoming work on American Natural History, a full account will be given of my observations on the habits of the SCALOPS and CONDYLURA.

† A late number of the United States Literary Gazette contained an annunciation of a newly discovered species of this genus, by Dr. Harris, of Milton. From a description given by this gentleman in a letter to a distinguished naturalist of Philadelphia, we are satisfied that the supposed new animal is the well known CONDYLURA *cristata*.

ence to the nasal rays. It is on this indication that Gmelin, Illiger, and Desmarest have allowed of the species, the latter author with very strong doubts, which Ranzani repeats. From Pennant's figure I feel convinced that his *longicaudata* was a stuffed and dried specimen of the CONDYLURA *cristata*, having the nasal radii shrunk and distorted. A specimen in this condition I have now in my possession, and it might readily be taken for the *longicaudata*, figured by Pennant.

The CONDYLURA *cristata* is subject at certain seasons to a very remarkable enlargement of the tail, varying from the smallest or most ordinary size to the thickness of the little finger. This circumstance was long since made known to many of his friends by Mr. Titian Peale, who found one of the largest size: since then I have found one, and examined several others, and both Messrs. Say and Bonaparte confirm this observation by other examinations: all the specimens yet examined having the tail thus enlarged, were *males;* and it is most probable that the enlargement occurs only during the rutting season. Messrs. Say and Peale both suggested to me a long time since, that the differences heretofore serving for the establishment of the *longicaudata* as a distinct species, were merely sexual. In all other respects the species of CONDYLURA found are invariable in their external characters, if we except a single specimen obtained by my friend, Titian Peale, which may prove to be a new species, should he find other specimens with the same character, for which purpose he defers his observations. It is certainly an extremely de-

sirable circumstance that we should rid the American Fauna of a great number of merely nominal species, which never had existence unless in the imagination of their authors: to this end the labours of American naturalists should be directed, as it is a great advance towards true knowledge to disencumber ourselves of error.

It is well known that the appearance from which Illiger named the genus, was an extravagant exaggeration of *Delafaille*, who represented it in his plate as having numerous knots or strangulations on the tail. Desmarest's figure is also incorrect in relation to the tail; he having figured it from a dried specimen; in the recent state, the knotted appearance is not distinguishable: he has also drawn it with the palms turned nearly to the earth, instead of placing them with the thumbs to the ground and the palms presenting backwards. In the recent English translation of Baron *Cuvier's* Régne Animal, Desmarest's figure is copied, but is rendered vastly more incorrect and unnatural than it is in the original.

Description of a new species of SALAMANDER. *By* JACOB GREEN. *Read July* 19, 1825.

SALAMANDRA.

S. *tigrina.* Cauda longiuscula: corpore, supra nigricante cum maculis flavis, subtus cinereo et luteolo.

Length eight inches: *tail* rather longer than the body, tapering, compressed, and rounded at tip: *head* large: *snout* obtuse: *mouth* large, extending further to it than the eyes: *lower jaw* projecting beyond the upper: *eyes* protuberant and remote: *iris* beautifully coloured with gold and brown: *pupil* circular and contracting horizontally, though but little affected by the light: *colour* on the *upper parts* and *sides*, blackish, with numerous large, irregular spots of pale ochre, which are the largest on the upper part of the tail: *beneath* cinereous, and very irregularly marked with patches of an ochraceous colour, which are more numerous and less confused along the sides: *throat* of a uniformly pale ochre: *under part* of the tail without spots, and presenting a remarkably granulated appearance: *under part* of the *legs* and *feet* reddish; this, however, is not perhaps a permanent character: *skin* smooth, and secretes but a very little of that glutinous fluid so common in Salamanders; interior feet four-toed; posterior feet five-toed.

This animal was found near Moore's town in New Jersey. It has been kept alive for some time by Mr. Titian Peale, to whose kindness I am indebted for the use of it in this description.

The S. *tigrina* is so nearly allied to the S. *subviolacea* of the late Professor Barton, that after some hesitation I have concluded to consider it a distinct species. The colour and markings are certainly very different, and these, though they are very variable in this tribe of animals, yet I think in this instance,

they are sufficiently remarkable to constitute a different species, when taken in connexion with other peculiarities. I have seen a number of the S. *subviolacea*, and they all corresponded in their markings with the figure Professor Barton has given in the 6th volume of the Transactions of the Amer. Philos. Soc.

The S. *tigrina* has also some resemblance to the S. *terrestris* of Europe, which has been so much the subject of fables; it wants, however, the tubercles on the skin.

Mr. Titian Peale has made a very accurate drawing of the S. *tigrina*.

Description of a new species of the genus SAURUS, (Cuvier.) *By* C. A. LESUEUR. *Read July* 26, 1825.

SAURUS.

S. *minutus*. Pl. v. *Snout* twice the length of the diameter of the eye, pointed: *mouth* deeply cleft: *head* tolerably large, a little depressed above: *first dorsal fin* short and elevated, and placed rather posterior of the ventrals: *second dorsal* with a single divided ray, truncated above, supplying the place of the small adipose fin and situated above the anterior portion of the anal: *pectorals* rounded and sufficiently long to reach the ventrals: *anal* elongated, narrow

and straight: *tail* elongated and terminated by a forked fin: *scales* on the body, head, and opercula, corresponding to the size of the fish: *opercula* moderate: *lateral line* straight.

Length about two inches; breadth, two lines.

P. 12. V. 9. D. 10. 2d D. 1. A. 10. C. 12.

Isle of France.

Although the snout of this fish is rather longer than that of the S. *fasciatus*, Risso, and OSMERUS SAURUS, (Lacep. page 235) and the second dorsal fin is truncated, it nevertheless appears to me that it appertains to the genus SAURUS, Cuvier.

Descriptions of some new species of FRESH WATER *and* LAND SHELLS *of the United States. By* THOMAS SAY. *Read May* 3, 1825.

HELIX.

H. *fallax*. Spire convex; volutions five, with elevated lines forming grooves between them: *labrum* reflected, contracting the aperture, bidentate; teeth separated by a profound sinus; superior tooth inflected into the mouth; inferior tooth situated near the base: *labrum* with a large, prominent, oblique, lamelliform tooth, curving downwards so as nearly to reach the termination of the labrum: *umbilicus* open, exhibiting the volutions.

Greatest transverse diameter $\frac{9}{20}$ of an inch.

This resembles the *tridentata*, Nob. but the upper tooth of the labrum is much inflected, the spire is more elevated, and the size is less considerable; in the former character it coincides with H. *inflecta*, Nob. but that shell has the umbilicus closed.

Presented to the Academy by Messrs. Hyde and Mason, who found it in the vicinity of Philadelphia, where they are not uncommon.

Since the above was written I have received a specimen from Mr. Stephen Elliott, of South Carolina, fully equal in size to the *tridentata*.

2. H. *egena*. *Shell* convex, polished: *whorls* five, not distinctly wrinkled, rounded: *aperture* rather narrow, transverse: *labrum* simple, at its inferior extremity terminating at the centre of the base of the shell: *umbilicus* none, but the umbilical region deeply indented.

Breadth more than $\frac{1}{10}$ of an inch.

This shell was found by Mr. John S. Phillips, on the bank of the Delaware river, about ten miles from Philadelphia. It is much more elevated and not so broad as the H. *arborea*, Nob. the aperture also is of a different shape. It is much broader than the H. *chersina*, Nob.

Bulimus.

B. *multilineatus*. *Shell* conic, not very obviously wrinkled: *whorls* not very convex, yellowish-white, with transverse entire reddish-brown lines; a black-

ish subsutural revolving line: *suture* not deeply indented, lineolar: *apex* blackish: *umbilicus* small, surrounded by a broad blackish line: *columella* whitish: *labrum* simple, blackish.

Length less than $\frac{7}{10}$ of an inch; greatest breadth less than $\frac{7}{20}$ of an inch.

This species was found by Mr. Titian Peale on the southern part of East Florida.

Pupa.

P. *fallax*. *Shell* turreted, pale horn colour; wrinkles rather obtuse, hardly prominent: *suture* rather deeply impressed: *volutions* nearly seven, a little convex: *apex* somewhat obtuse: *aperture* unarmed, suboval, truncated above by the penultimate whorl, less than $\frac{1}{3}$ the whole length of the shell: *labium* nearly transverse, colour of the exterior part of the shell: *columella* reflected, rectilinear, longitudinal, forming an obvious though a rounded angle, with the labrum and labium: *labrum* hardly reflected: *umbilicus* narrow.

Length more than $\frac{3}{10}$ of an inch.

For this species I am indebted to Dr. T. W. Harris of Milton, Massachusetts.

It closely resembles P. *marginata*, Nob. but is much larger, and the labrum is not widely reflected; when viewed in front it has a reflected appearance, but the opposite view presents only a very limited excurvature.

Achatina.

A. *solida*. *Shell* conic, rather elongated, nearly smooth, or with distant wrinkles, polished, yellowish, paler towards the apex, which is white, rather ponderous: *whorls* about seven: *spire* prominent: *mouth* rather small: *labrum* on its inner submargin thickened: *columella* hardly truncated, with a somewhat prominent ridge on the inner side near the base.

Length $2\frac{1}{4}$ inches.

This species was found by Mr. Titian Peale in the southern part of East Florida, where he also obtained the A. *flammigera*, Ferruss. and *vexillum*, Humph. or their analogues, in plenty. In outline it bears some resemblance to Lister's figure 9 of plate 14, but is much smaller. It appears to be rare, but one specimen having been brought home by Mr. Peale.

Lymneus.

1. L. *modicellus*. *Shell* blackish, not elongated: *whorls* rather more than four, convex: *suture* deeply impressed: *apex* acute: *aperture* very regular, the labium and labrum being subequally curved; the fold of the columella rather slight.

Total length $\frac{7}{20}$ of an inch; breadth $\frac{1}{5}$; length of the aperture $\frac{1}{5}$.

Smaller than any of the species I have hitherto described. It was found by Dr. M'Euen at Owego.

on the Susquehanna river near the state of New York.

2. L. *obrussus*. *Shell* oblong, rather slender, pale yellowish testaceous: *whorls* five, slightly rounded: *apex* acute: *suture* deeply impressed: *aperture* not dilated, within pure white: *columella* with the sinus of the fold very obvious.

Lister, pl. 114, fig. 8.?

Total length $\frac{9}{20}$ of an inch; aperture $\frac{1}{4}$; breadth nearly $\frac{1}{5}$.

All the individuals that have occurred were covered with an earthy slime. They inhabit a small rivulet below the fish-ponds at Harrowgate, the seat of my friend Mr. J. Gilliams.

3. L. *pinguis*. *Shell* oval, rather ventricose, pale dirty yellowish: *whorls* nearly four, rapidly diminishing to the apex, which is dull fulvous: *suture* moderate: *spire* rather more than half the length of the aperture: *aperture* large: *labrum* with the inner submargin a little thickened.

Total length $\frac{11}{20}$ of an inch; aperture rather more than $\frac{7}{20}$; breadth $\frac{7}{20}$.

Proportionally shorter and much more dilated than other species of the country, with the exception of L. *macrostomos*, Nob. from which it is readily distinguished. It inhabits the Delaware and Schuylkill rivers near Philadelphia, in company with L. *catascopium*, Nob.

4. L. *galbanus*. *Shell* subovate: *whorls* nearly five, very convex: *suture* very deeply impressed:

apex acute: *body whorl* a little flattened in the middle: *aperture* not dilated: *columella* with the sinus of the fold very obvious.

Length $\frac{3}{10}$ of an inch; aperture rather more than half the whole length.

For this shell I am indebted to Mr. Nuttall, who obtained it in a marl pit near Franklin, New Jersey. He considers it fossil, as well as numerous specimens of PLANORBIS *campanulatus*, VALVATA *tricarinata*, and PHYSA *heterostropha*, found with it. I have never seen a recent specimen, but the present corresponds with some individuals belonging to the Philadelphia Museum, also said to be fossil.

PHYSA.

P. *ancillaria*. *Shell* heterostrophe, subglobose, pale yellowish: *whorls* rather more than four, very rapidly attenuated: *spire* truncated, hardly elevated beyond the general curve of the surface: *suture* not impressed: *aperture* but little shorter than the shell, dilated: *labrum* a little thickened on the inner margin.

Length more than $\frac{1}{2}$ an inch.

The spire of this species is unusually short, truncated at tip like the PALUDINA *decisa*, Nob.; and the suture is so inconspicuous as to give rise to the name which I have chosen for it. My brother, B. Say, obtained it in the Delaware river near Easton, and Mr. Jessup collected numerous specimens in the Connecticut river, above Hartford. It may be distin-

guished from P. *heterostropha*, Nob. by the shorter and truncated spire, inconspicuous suture, as well as by the more obtusely rounded junction of the labrum with the base, and by the general form.

Cyclostoma.

C. *dentata*. *Shell* conic, cylindric, truncate at tip: *whorls* three or four, slightly convex, cancellate with fine, regular, subequal, longitudinal, and transverse elevated lines; superior edge fimbriated with prominences extending over the suture; one or more rufous revolving lines, sometimes obsolete: *labrum* somewhat reflected, white: *umbilicus* distinct.

Length less than $\frac{1}{2}$ an inch.

For this species we are indebted to the researches of Mr. T. Peale in Florida. It is the only true species of Cyclostoma yet found within the limits of the Union. This species is probably somewhat like the Turbo *crenatus*, Linn. but that shell is not said to be truncated at tip, and has a keeled base.

Paludina.

P. *subglobosa*. *Shell* subglobose: *whorls* three and a half, much rounded, rapidly enlarging: *suture* profoundly impressed: *aperture* subovate: *umbilicus* very narrow, nearly closed by the labrum: *spire* very short, convex.

Inhabits the north-western Territory.

Length less than $\frac{3}{16}$ of an inch.

I obtained this shell when traversing the north-western part of the Union. It is much larger than the *porata*, Nob. which it resembles considerably, but its whorls are much more rapidly enlarged, and the umbilicus is much narrower.

Melania.

1. M. *simplex*. *Shell* conic, blackish, rather rapidly attenuated to an acute apex: *suture* not deeply impressed: *volutions* about eight, but little rounded: *aperture* longitudinal; within dull reddish: *labrum* with the edge not undulated, or but very slightly and obtusely so near the superior termination.

Length $\frac{3}{5}$ of an inch; greatest breadth $\frac{3}{10}$.

For this species we are indebted to Professor Vanuxem, who presented several specimens to the Academy. He informs me that he obtained them in Virginia, in a stream running from Abingdon to the Salt Works, and from the stream on which General Preston's grist-mill is situated, near the Salt works, as well as in a brook running through the salt water valley, and discharging into the Holstein river. Near the summit the whorls are marked by an elevated line near their bases.

It cannot be mistaken for the *conica*, Nob. for in that species the aperture is obviously oblique.

2. M. *proxima*. *Shell* conic, rather slender, black, gradually attenuated to the truncated apex: *suture* moderately impressed: *aperture* longitudinal, within milk white: *labrum* with the edge not undu-

lated, or but very slightly, and obtusely so near the superior termination.

Length to the truncated apex, nearly $\frac{3}{5}$; greatest breadth less than $\frac{1}{4}$ of an inch.

Professor Vanuxem obtained this species in a small brook which discharges into the Catawba river, near Landsford, Chester district, South Carolina, and also in the warm springs, Buncombe county, North Carolina, and in the French Broad river, of the same county. It resembles the preceding very closely, but is decidedly more slender, and like that shell it has two elevated lines on the inferior margin of the terminal whorls. The interior of the aperture in many specimens is of a dull reddish colour, and in some the same part exhibits the appearance of two or three obsolete bands. Another variety, which Mr. Vanuxem obtained from a limestone spring near Broad river, Spartanburg district, South Carolina, is of a pale horn colour. In a stream of the Saluda range of mountains near Mill Gap, in Rutherford county, he found another variety of a somewhat smaller size, tinged with reddish-brown, and generally distinctly banded within the aperture; one of these specimens is very remarkably truncated, presenting only about one whorl and a quarter. The same variety also inhabits a brook near the Table rock. A variety which seems to differ from the latter only in size, was found by Mr. Vanuxem near Douthard's gap, of the Saluda mountains; the largest specimen he sent from that locality is only about $\frac{3}{10}$ of an inch long.

3. M. *subglobosa*. *Shell* subglobose, brownish horn colour: *spire* but little elevated, not half the length of the aperture: *volutions* about four: *aperture* rounded, nearly as broad as long; within more or less tinged with dull red: *labium* a little flattened.

Length $\frac{3}{5}$ of an inch; greatest breadth $\frac{11}{20}$ of an inch.

Professor Vanuxem found this curious shell in the north fork of the Holstein river, Virginia, where they are extremely abundant. In the old shells the surface, and particularly that of the spire, is considerably corroded, presenting the appearance of having received a fortuitous deposition of calcareous matter. This corrosion, however, does not extend to the destruction of any of the whorls, as is the case with many shells, but its effects seem to be confined to the exterior. It is a second species of my proposed genus ANCULOTUS.

All the striæ of the operculum are concentric to the superior angle.

PIRENA.

P. *scalariformis*. *Shell* turreted, gradually tapering to the apex, which is acute: *whorls* rounded, crossed by numerous elevated, regular lines, which, on the body whorl, are terminated near the base by five or six more or less profound revolving grooves; *suture* pretty deeply impressed, with generally one of the grooves above it, so as to appear double: *colour* pale, with several revolving reddish-brown lines;

aperture rounded: *labrum* thickened, somewhat recurved; a slight but very obvious sinus at base, and another very slight, more obtuse one near the junction with the preceding whorl: *umbilicus* none.

Length $\frac{9}{10}$ of an inch.

Mr. Titian Peale found this handsome and curious shell in great abundance in the fresh water lakes of the Florida Keys. It is most certainly a fresh water shell, yet it is destitute of an epidermis. The labrum thickens with age; the operculum is orbicular, and so small as to admit of the animal retiring one half the length of the shell. It differs from MELANIA, MELANOPSIS, and PIRENA, in the rotundity of the aperture, the thickened labrum, and comparative smallness of the operculum.

The tentacula of the animal are two in number, and the eyes are placed a little above their exterior base.

FUSUS.

F. *fluvialis*. *Shell* fusiform, olive-green or brownish: *spire* much elevated, gradually tapering: *volutions* nearly six, wrinkled across, and with a series of elevated undulations on the middle: *suture* consisting only of an impressed line: *aperture* somewhat fusiform; within whitish, more or less with dull reddish, and with several lines of that colour, sometimes confluent: *labrum* on the inner margin immaculate, edge undulated: *canal* rounded at tip: *columella* very concave.

Length 1 $\frac{8}{10}$ inches; aperture $\frac{19}{20}$ of an inch; greatest breadth $\frac{19}{20}$ of an inch.

Professor Vanuxem found this curious and highly interesting shell on the north fork of the Holstein river, near the confluence of a brook of salt water. From the name of the genus it might reasonably be supposed to be a marine shell, but it has never been discovered on the coast, and seems to be limited to a very small district of the Holstein river, in company with UNIO *cariosus*, *subtentus*, nobis, MELANIA *subglobosa*, nobis, and no doubt other fluviatile shells. When the inhabitant becomes known it may authorize the formation of a new genus, but there appears no characters in the conformation of the shell that would readily distinguish it from FUSUS.

UNIO.

U. *subtentus*. Oblong-oval, subcompressed, slightly contracted at the middle of the base, dull yellowish brown: *beaks* not prominent, decorticated; dorsal edge regularly arcuated, without any appearance of an angle; anterior margin with numerous slightly reflected ribs.

Breadth 3 $\frac{1}{8}$ inches; length more than 1 $\frac{1}{2}$ inches.

This species was found by Professor Vanuxem in the north fork of the Holstein river, in company with U. *cariosus*, nobis, MELANIA *subglobosa*, nobis, and FUSUS *fluvialis*, nobis.

In consequence of the ribbed appearance of the anterior margin of the shell, it has much similarity

to an ALASMODON, but the lamelliform teeth are prominent and distinct.

ALASMODONTA.

A. *ambigua*. *Shell* transversely oblong-oval; somewhat inflated, rather thin, dusky, wrinkled; anterior and posterior margins almost equally rounded: *hinge margin* parallel with the base; basal margin a little compressed in the middle: *beaks* not prominent, approximate, their surface slightly undulated; a very obtuse, hardly elevated undulation extends from the beaks to the junction of the basal and anterior margins: *hinge* with very small, obsolete primary teeth: *within* somewhat iridescent; posterior and basal portion milk-white; hinge cavity brownish.

Breadth 1 $\frac{4}{5}$ inches; length $\frac{4}{5}$ nearly.

This is one of the many fine shells which I obtained in the north-western territory, when travelling with major Long's party. It forms a link between the genera ALASMODONTA and ANODONTA. When young the primary teeth are obvious, but when the shell arrives at the full growth the teeth are obsolete, and in some instances, not at all visible.

Description of two new genera of the natural order CRUCIFERÆ. *By* THOMAS NUTTALL. *Read October* 4, 1825.

*SELENIA.†

Calyx basi æqualis coloratus patens: *silicula* magna polysperma elliptica compresso-plana marginata subsessilis, valvulis dissepimento minoribus parallelis: *glandulæ* decem per paria intra calycis foliola et solitariæ emarginatæ inter stamina breviora et pistillum.

Herbacea annua, caule angulato triquetro, foliis pinnatifidis, flores aurei axillares: *Brassicæ* habitus sed fructus *Lunariæ*.

SELENIA, *aurea*.

DESCRIPTION. *Root* fibrous, annual: *stem* simply subdivided from the base, acutely triquetrous! glabrous, 4 to 6 inches high, nearly erect: *leaves* smooth, and somewhat succulent; the radical and lower ones subbipinnatifid, sessile, 2 to 4 inches long, primary segments partly runcinate, acute, ultimate segments or denticulations inclined upwards: *peduncles* axillary, angular, 1 to 1½ inches long, sometimes commencing nearly from the root: *flowers* fragrant: *calyx* yellow, spreading, the leaves oblong-ovate, and concave, about the length of the claws of the

† From σελήνη, the moon, in allusion to its apparent affinity to *Lunaria*.

petals: *petals* bright golden yellow, cuneate-oblong; claws connivent, erect, laminæ spreading: *glands* 10! 8 disposed by pairs at the base of each of the calyx leaves, and 2 emarginate glands, or rather 4? adnate by pairs within the base of the shorter stamina: *style* conspicuous, ensiform; stigma small and entire; the valves of the germ convex: *capsule* elliptic, or oblong-elliptic, flatly compressed, subsessile, surrounded by a thickish margin confluent in the terminating ensiform style, valves parallel with, and narrower than the dissepiment, flat and membranaceous: *seeds* few, roundish-reniform, flat and marginated as in LUNARIA. The cotyledones are also similar to those of that genus.

HABITAT. Near the banks of Arkansa, in depressions, on the margins of hilly rivulets from Point Pleasant to the garrison at Belle Point near the Pottoe river. The flowering time from March to the close of April.

OBSERVATION. The spreading coloured calyx, equal at the base as in SISYMBRIUM, the equal disposition of the numerous small glands of the receptacle, with the sessile position of the capsule, and the unequal relative dimensions of the valves and dissepiment, to say nothing of the remarkable habit, at once distinguish this curious plant from LUNARIA; and in most of the particulars, as well as in other characters, unnecessary to be adduced, it is alike separated from RICOTIA. Indeed, its proximate affinity, notwithstanding the singular disparity of the fruit, appears to be to SISYMBRIUM. The plant is

very desirable for cultivation, both for the bright colour of its flowers and their delicate fragrance. The seeds, of which I obtained abundance, lost their vegetative power in consequence of the undue moisture to which they were unfortunately subjected on my voyage from New Orleans to Philadelphia.

Plate VI. The figure taken from a moderate sized dried specimen. *a*. The flower and calyx of the size of nature. *b*. The capsule, and *c*. the seed of the same magnitude.

*Streptanthus.†

Calyx erectus coloratus: *petala* dilatata, unguibus canaliculata tortuosa: *glandulæ* nullæ: *stamina* filamentis subulatis basi incrassatis: *siliqua* longissima angulata compressa: *semina* uniseriata plana marginata: *cotyledones* accumbentes.

Herba annua, foliis integerrimis; flores purpurei; siliqua longissima ancipito-tetrahedra, stricta.

Streptanthus, *maculatus*.

Description. Annual. The whole herb glaucous: *stem* erect, simple or branched above, terete and very smooth, one to two feet high: *leaves* amplexicaule, cordate-ovate, acute, entire and smooth: *flowers* in a terminal corymbose raceme: *calyx* erect, oblong-ovate and coloured, its leaves about the length of the claws of the petals: *petals* having the

† From στρεφω, to *turn* or *twist*, and ανθος a *flower*, in allusion to the singular character of the contorted petals.

claws channelled and *tortuous*, the border rather large, oboval, dilated and purple, the base of each marked by a deep velvet-like blotch: *stamina*, filaments subulate, with the base dilated; anthers linear subsagittate: *glands* none: *style* scarcely any; the stigma emarginate and sub-bilamellate: *silique* 4 or 5 inches long, erect, shortly pedicellate, linear, compressed, angular, and somewhat tetrahedral: *seeds* oblong and flat, with a membranaceous margin.

HABITAT. Amongst rocks, and on shelving hills, near the banks of the Kiamesha of Red River in Arkansa territory. Flowering in May.

OBSERVATION. This very showy and remarkable plant bears no inconsiderable affinity to the genus TURRITIS and ARABIS. The peculiar character of the corolla, however, will distinguish it from both. The silique is nearly that of TURRITIS, but the seeds are disposed in a single series and marginated as in CHEIRANTHUS.

Plate VII. *a*. A lateral branch of the natural size drawn from a dried specimen. *b*. The silique. *c*. A petal. *d*. The seed.

Note by J. D. GODMAN, M. D. *read August* 9, 1825.

In my note on the genus CONDYLURA recently published, it is stated that the SCALOPS has the integuments continued over the cartilaginous tube leading to the internal ear. I lately had an opportunity of examining several fine specimens, and have found the very small meatus auditorius externus, which will admit a body of the size of a common pin. It is by no means easily discovered, and is situated about three-fourths of an inch behind the eye, nearly over the anterior part of the shoulder joint.

Description of a new species of SALAMANDRA. *By* R. HARLAN, M. D. *Read June* 21, 1825.

SALAMANDRA, *picta.*

Body blackish or dark slate colour above, yellowish or light orange colour beneath; skin beneath the neck folded; head large; legs strong; tail compressed at its inferior portion nearly the length of the body.

DIMENSIONS. Total length nearly 4 inches; *body* rather more than 2 inches; *tail* less than 2 inches; length of the head $\frac{6}{10}$; breadth $\frac{5}{10}$; length of the hind legs $\frac{6}{10}$; of the fore legs $\frac{4}{10}$.

DESCRIPTION. *Head* large, rather flat: *occiput* broad, slightly protuberant: *snout* obtuse, rounded anteriorly: rictus of the mouth wide, extending posteriorly to the eyes; anterior borders of the lips slightly undulating: *skin* of the throat folded, so as to form a collar nearly surrounding the neck: *body* above blackish; a longitudinal furrow extending from the occiput along the back to the base of the tail; inferior portion of the body obsoletely punctured with dark spots, more visible on the sides: *legs* short, strong and thick, externally of the colour of the back; internally of the colour of the belly: *tail* sub-quadrangular for the first two-thirds; the remainder or inferior portion abruptly compressed, pointed, with the superior and inferior borders carinate.

The above description is from several specimens, of different ages, taken in the vicinity of Philadelphia. In the cabinet of Mr. W. Hyde, I have observed a specimen much larger than the present.

Inhabit shallow brooks in the vicinity of this city.

Notes to the paper entitled Descriptions of ten species of South American BIRDS. *By* CHARLES BONAPARTE. *Read July* 12, 1825.

2. PICUS *rubricollis.*

I have recently obtained the true PICUS *rubricollis* of authors; it corresponds exactly in size, which in both living birds must have been more considerable than has been stated from the dried skin; it also corresponds in every other respect, even in the most minute markings, with the exception of the following characters. 1st, All the superior parts of the body are brownish-black. 2d, The whole inferior surface, thighs and under wing-coverts, are plain rufous cream colour; the quill feathers are entirely of the same rufous cream on their inner webs to within an inch and a half of their tips. Thus in the species the rufous cream colour occupies all the space which in the variety is marked by spots. Is the latter a species or a difference dependent on age or sex? Its general habit inclines me to suppose the latter; but which is the perfect bird?

10. RALLUS *nigricans.*

The examination of specimens received at the same time with the above, has convinced us that the bird we described under this name is not the *Ypacaha obscuro*, of d'Azara, but that it is his *Ypacaha chiricote aplonado* which Vieillot has vaguely refer-

red, as a variety of age or sex, to his RALLUS *chiricote*, a species which, like the former, he established on the *Ypacaha chiricote* of d'Azara, without having seen it. Having also had the good fortune to receive a fine specimen of the latter, we think it may be acceptable to ornithologists, to have these two birds placed in a clearer point of view than they are at present; at the same time that we correct a mistake into which we have been led by the desire to avoid multiplying species, when not justified by comparison. They both belong to the subgenus *Rallus*, and are so perfectly similar in form, in partial and total dimensions, and in the greater portion of their markings, that with Sonnini and Vieillot we should consider them as different ages or sexes of the same species, but for the remarkable difference in the shape of the bill, and was it not that no example is known to exist in the genus of so wide an aberration from the ordinary plumage.

RALLUS *chiricote*, Vieillot.

Capite colloque plumbeis; dorso, alisque brunneo-olivaceis; remigibus rufescentibus; tectricibus alarum inferioribus rufis nigro-fasciatis; pectore, abdomineque pallide rufis; uropygio, crisso, cauda, femoribusque nigris.

Length 14 inches; bill $2\frac{1}{4}$ inches long, and $\frac{3}{4}$ of an inch in width at base, tapering rapidly, being $\frac{1}{2}$ an inch at the anterior tip of the nostrils; its general shape evidently approaching the subgenus *Crex*, (which is considered by Latham, Temminck, and

others, as belonging to GALLINULA;) it is of a delicate pale green colour, and at base it is wrinkled and yellow: *feet* pale (reddish?) naked space above the heel, one inch; tarsus nearly three inches long; toes as in the other species; whole head and neck dark bluish-slate, darker and inclining to brownish on the top of the head: *throat* whitish: *cheeks* and *neck* beneath light slate: *back*, *scapulars*, and *upper wing-coverts* olive-brown, inclining more to greenish on the back: *shoulder margins*, *exterior wing-coverts*, *spurious wing* and *primaries* dark rufous; the latter slightly dusky at tip: *secondaries* dark brown, slightly tinged with greenish: *inferior wing-coverts* bright chesnut, banded with black: *breast*, *belly*, and *flanks* light rufous-buff, separated by a well defined line from the plumbeous colour of the neck; the whole plumage at base plumbeous; lower part of the back, rump, vent, upper and lower tail-coverts, and tail, black: *thighs* dark plumbeous.

The specific name of this Rail is drawn from the sound of its voice, which is said to resemble that of the syllables *Chiricote*. It enters pretty deeply into the woods, and alights at night, and sometimes even in the day, on the small and densely vestured trees.

RALLUS *melanurus*, Nob.

Fusco-ardosiaceus; collo supra brunneo; dorso, alisque brunneo-olivaceis; remigibus rufescentibus; tectricibus alarum inferioribus rufis nigro-fasciatis; uropygio, crisso, caudaque nigris.

For a minute description we refer to our supposed RALLUS *nigricans*, Vieill. (Vol. iv. p. 386) where it will be obvious that the two descriptions differ little else than in the following characters, to which we also add such other traits as may be interesting. The size and proportions of the birds, with the exception of the bills, are nearly the same. The slight difference observable in the description is owing to the inequality of dried skins; but the bill of R. *melanurus* is considerably narrower, being but little more than $\frac{1}{2}$ an inch high at base, and $\frac{3}{8}$ at the anterior tip of the nostrils it is thus more equal throughout, and of course is more decidedly that of a true Rail. Its colour appears to have been more delicate, the feet of a darker red, if we may judge from the dried specimens; the brownish tinge of the upper part of the neck, (totally wanting in the *Chiricote*) the more obvious tinge of brownish on the commencement of the olive-brown of the back, and principally the slate colour of the inferior parts, (which are bright yellowish-rufous in the other) will at once distinguish our R. *melanurus*. The other differences which are expressed in the descriptions by using different but nearly synonymous words, are so inconsiderable that they cannot be relied upon, being undoubtedly more remarkable in different specimens of each species. Thus the quill feathers are considerably brighter and more rufous in *Chiricote*, &c.; the shoulder and outer wing-coverts are not of that colour in *melanurus*, but are pretty much of the olive-brown colour, &c.

On the species of the Linnæan genus ASTERIAS, *inhabiting the coast of the United States. By* THOMAS SAY. *Read November* 1, 1825.

ASTERIAS, *Linn. Lam.*

1. A. *articulata.* Disk moderate, granulated; margin of the rays articulated, ciliate.

Inhabits the coast of Georgia and East Florida.

Disk rather small, covered with close set, small rounded granulations, which conceal rounded tubercles, on which they are placed, and are continuous to near the extremity of the rays: *rays* five, depressed, nearly flat above; margin articulated throughout, the articulations depressed, with a single series of compressed, somewhat truncated spines on the side, two on each articulation, in length about equal to two of the articulations; on the superior surface of the articulations, is a series of small tubercles, one on each, extending from near the tip of the ray to the middle; beneath articulated, and armed with numerous, short, slender spines.

This species is closely allied to the A. *aranciaca*, with which it has probably been considered identical. But there are several invariable characters which readily distinguish it from that species, and not the least important of these is that of the lateral spines being placed in a single series, two to each articulation; the granulations also of the disk are in no instance ascicular, but are always spherical.

It is very common on the coast of East Florida, and on the sea islands of Georgia.

2. A. *clathrata.* Disk rather small, granulated; surface tesselated.

Inhabits the coast of Georgia and East Florida.

The whole surface is covered by minute granulations, divided into small groups, which are rounded on the disks, and quadrate on the margins, where the division is effected by longitudinal and transverse, continuous impressed lines: *rays* five, semicylindrical, or a little depressed, terminating in a glabrous tubercle, which is not reflected, and dilated each side with very short spines; beneath, divided throughout by narrow, transverse articulations, by means of impressed lines, and armed with numerous short, broad and compressed spines.

Very distinct from the preceding species, and attaining to a somewhat larger size. It seems to be allied to the A. *lævigata*, an inhabitant of the Indian ocean. It is very common on our southern coast.

3. A. *spinosus*, Linck. This species is very abundant on our coast, from Maine to East Florida inclusive. The generic name employed by Linck is PENTADACTYLOSASTER; his specific name was changed by Lamarck to that of *echinophora*, but there can be no doubt respecting priority in this case. The largest specimen I have seen belongs to the collection of the Academy; it is about nine inches and three-fourths in diameter; but on the shores of the Southern States, they are often 6, $6\frac{1}{2}$, and even 7

inches in diameter. I was not aware that it was found so far North as Maine, until a recent letter, with an accompanying specimen, from Mr. D. H. Storer, informed me that they are found at Cape Elizabeth, clinging to the rocks, several feet below low-water-mark, and that in fact, they may be found on almost any rocky shore in that region. The figures in the *Ency. Meth.* to which Lamarck refers, are so very unlike this species, that if they should prove to be accurate representations of the *spinosus*, the species here alluded to must be entirely distinct.

4. A. *sentus*. Disk moderate, spiny, not obviously reticulated.

Inhabits the coast of Florida.

Rays cylindrical, very slightly tapering, of moderate length; surface covered with a blackish violaceous epidermis, destitute of pores, and with numerous conic acute spines, which may be traced into about 10 or 11 longitudinal rows, two or four of which are beneath; *beneath* paler; grooves very slender.

Diameter $4\frac{1}{2}$ inches.

This species was brought from Key West by Mr. T. Peale, who found them abundant there.

Lieutenant Gandtt of the Navy, has since presented two specimens to the Academy.

5. A. *vestita*. Disk broad; surface reticulated, covered by cylindrical prominences; margin articulated; rays depressed.

The whole superior suface is covered by cylindrical prominences, which are placed near each other,

truncated at their summits, and each summit crowned by from ten to eighteen small, equal, cylindrical fimbriæ; wart-like tubercle large, radiated, very conspicuous: *margin* articulated; each articulation with about four, very much compressed, subquadrate, truncated spines or moveable processes, which are vertically adpressed to the surface of the segment, and are imbricated with respect to each other.

Diameter 1 foot 2 inches.

The fine specimen from which this description was made, was found at Cape May by Mr. J. Robbins, and by him presented to the Philadelphia Museum. Allied to A. *aranciaca*, Linn. but distinct by many characters, and particularly by the form and number of the lateral spines. It is very rare on this coast.

6. A. *alternata*. Disk rather small; surface reticulated, and covered by small columns, supporting fimbriæ, of which the central one is largest.

Inhabits the coast of Florida.

Rays very distinctly reticulated, the interstices open; but the network is concealed by a series of short, trochleariform columns, which, on their summit, support numerous small radiating cylinders, of which the central one is usually larger, and often much more prominent than the others; wart-like tubercle not visible; lateral spines oblong, conic, acute, placed in two series, with many smaller ones beneath them; all the surface beneath spiny; *colour* above purplish; the rays with irregular yellowish bands, beneath entirely yellowish.

Diameter about 8 inches.

The columns of the surface are narrower in the middle than at either extremity, and many of the crowning radii of those columns have the central one much larger, so as to give the surface an appearance of irregularity. The species has a flaccid appearance, and is readily broken. But a single specimen was brought by Mr. Peale from the Florida Keys.*

Ophiura, Lam.

1. O. *angulata.* Disk orbicular, slightly pentagonal, spinous; rays five, with numerous echinated spines, which are almost twice as long as the transverse diameter of the ray.

Inhabits Charleston harbour.

The edge of the disk is more prominent and somewhat lobed between the rays; the surface of the disk is radiated with ten spiny lines, of which five are dilated, and the remainder very narrow; the spines are very small in proportion to those of the rays, and bifid or trifid at tip, and are supported by small, hardly raised granulations: *rays* of moderate length, above depressed; segments angular at their tips, and each supporting on each side a transverse series of

* A. *helianthus*, Lam. As the native coast of this splendid species was unknown to Lamarck, I may avail myself of this opportunity to state that a fine specimen was presented to the Academy by Mr. Wm. W. Drinker, which was found near Guasco, on the coast of Chili, by Mr. Samuel Archer, jr. Another individual, taken at the same locality, is in the possession of Mr. Charles Bispham.

seven echinated, unequal, cylindrical spines, of which the two or three inferior ones are short and imperfect; beneath, segments emarginate at tip: *colour* purplish.

This species is rather small, the largest specimen I have observed being not more than one inch and a quarter in diameter. It is not uncommon on the Gorgonia, at Sullivan's Island. The angulated form of the segment plates, is similar to that of the O. *ciliaris*, Linn.

2. O. *elongata*. Disk pentagonal, minutely squamose; rays much elongated, slender, with short, mutic spines.

Inhabits Charleston harbour.

The scales of the disk are imbricated, and at each angle of this part are two abbreviated, somewhat dilated lines; the rays are very long and slender, with short segments, which are transversely oval above, and quadrate beneath, armed each side by a transverse series of three spines, the length of which are hardly more than equal to half the width of the segment; the intermediate spine is more obtuse than the others, and is minutely echinated.

This species inhabits Gorgoniæ with the preceding. Its diameter is upwards of six inches, whilst that of the disk is about one fifth of an inch. It may be compared with the *filiformis* of Muller, and the *longipeda* and *nereidina* of Lamarck. From the former it is distinguished by having a proportionally smaller disk, destitute of those profound incisures of the edge so remarkable in that species. Its spines are much shorter than those of the *longipeda*, and it

is altogether destitute of dorsal grooves which distinguish the *nereidina*.

3. O. *echinata* Lam.? A specimen of OPHIURA, found at Cape May, will possibly prove to be a variety of this species; it belongs to the Philadelphia Museum.

4. O. *crassispina*. Disk orbicular, minutely granulated; some of the spines dilated.

Inhabits the coast of Florida.

Disk orbicular, destitute of spines, hardly perceptibly crenate on the edge, with very minute equal spherical granulations over its whole surface, placed at a little distance from each other on a level ground; no glabrous spaces: *rays* on the back with only a single obvious series of plates, which are transversely oval, not angulated; on the inferior part a series of plates, on each side of the base of which are two equal, very small, oval scales; the plates are hexagonal, the three anterior sides are short, the lateral sides are much longer and concave, to receive the side of one of the lateral scales: *spines* unarmed, not longer than the transverse diameter of the ray, placed in four series; superior series with the spines towards the base of the ray, dilated, some being almost oval; those towards the tip, and at the base of the ray, simple; remaining series equal, simple: *colour* dark purplish, more or less varied with yellowish on the rays; spines and beneath yellowish.

Diameter of the disk $\frac{3}{4}$ of an inch.

Length of the ray $3\frac{4}{5}$ inches.

Mr. Titian Peale found several specimens on the Florida Keys. I am also indebted to Mr. Peale for the opportunity to examine and describe the six following species, all found by himself on the Florida Keys.

5. O. *reticulata.* Disk pentagonal, very minutely scaly; rays yellowish, annulate with dusky.

Inhabits Coast of Florida.

Disk pentagonal, the angles rounded, and sides concave; surface entirely covered with minute, imbricated scales, and entirely destitute of spines or other elevations; of a yellowish colour, reticulated with dusky or blackish: *rays* yellow, with distant, narrow, blackish annulations; back with a series of transverse subquadrate plates, narrower at their tips, and a series of smaller ones each side above the first series of spines; beneath, a series of quadrate plates, with rounded angles, the terminal sides more or less deeply emarginate; and a single series of obovate scales each side of the plates, and less than half the size of the plates: *spines* placed in three series only, nearly equal, and hardly longer than half the transverse diameter of the ray.

Diameter of the disk $\frac{9}{20}$ of an inch.

Length of a ray about $3\frac{1}{4}$ inches.

Three individuals of this pretty species were obtained. It resembles the species represented in the *Encyclopedie Methodique*, pl. 122. figs. 5, 6, 7, 8, to which Lamarck has given a name without having seen the animal in nature.

6. O. *brevispina.* Rays cylindrical, subulate: spines minute, adpressed: disk pentagonal.

Inhabits the coast of Florida.

Disk pentagonal, the angles acutely emarginated at the base of the rays; sides concavely arched; surface with sand like granulations, without interval between them: *rays* rather short, cylindrical, tapering from the base to the tip: back with but a single series of transversely oblong-quadrate plates, which extend quite to the first series of spines; beneath with a single series of rather small rounded plates, which are a little narrower at base: *spines* seven on the lateral edge of each segment, equal, shorter than the segment and adpressed to it, so as not to be obvious: *colour* whitish, rays annulate with greenish.

Diameter of the disk nearly $\frac{2}{3}$ of an inch.

Length of a ray about $1\frac{5}{10}$ inches.

Resembles the O. *texturata* Lam. of Europe, but the disk of that species is divided into imbricated plates of various figures, and the dorsal plates of the rays are narrow. The surface of the disk in our species, resembles a stratum of extremely fine, spherical granules, laying in every position with regard to each other, and in contact.

7. O. *paucispina.* Disk orbicular, consisting of small plates, surrounded by still smaller ones: rays with two series of very short spines.

Inhabits the coast of Florida.

Disk nearly orbicular, very slightly pentagonal, the superior edge not interrupted by the rays: surface composed of many rounded, small plates, each

slightly concave, and surrounded by a row of small scales: *rays* on the back with a series of triangular plates, at the anterior angle, each side, is a very small triangular plate or scale; beneath with a series of plates which are profoundly concave each side for the reception of two small scales: *spines* remarkably small, adpressed, less than one-third the length of the segment, and consisting of but two series: *colour* whitish, rays annulate with dusky.

Diameter of the disk $\frac{1}{5}$ of an inch.

A very pretty little species. It resembles O. *texturata* Lam. but has fewer spines, and the divisions of the surface of the disk are differently formed, more rounded and much more regular: the edge of the surface of the disk in that species also is interrupted by the rays.

8. O. *isocantha*. Disk pentagonal, granulated; spines less than half the length of the transverse diameter of the ray.

Inhabits the coast of Florida.

Disk with the angles obtusely rounded; surface with numerous elevated tubercles or granulations, which are not crowded; edge not interrupted by the rays: *rays* on the back with a single series of transversely oblong-oval plates; beneath with a series of transversely, angularly oval plates, on each side of which are two very small spine like scales: *spines* less than half the transverse diameter of the ray in length, unarmed, prominent, equal, placed in three series: *mouth* very regular, stellate: *colour* whitish, rays annulate with greenish.

Diameter of the disk less than $\frac{1}{4}$ of an inch.

A single specimen only was taken by Mr. Peale.

The granulations of the disk resemble those of O. *crassispina*, but they are somewhat larger in proportion.

9. O. *flaccida*. Disk membranaceous, with a marginal series of scales.

Inhabits the coast of Florida.

Disk pentagonal; the curvature concave between the rays; angles rounded; surface membranaceous, flaccid, and with a regular series of imbricated, rather large, oval scales on the margin: *rays* on the back with a single series of transverse, narrow plates, having a longitudinal impressed line; beneath with a series of angularly rounded plates, deeply emarginated at their tips, and having a deep open puncture each side, in which there is no appearance of a small scale: *spines* short conic, rounded and large at base, acute at tip, and not longer than the segment, somewhat adpressed to the segment and placed in four series.

Diameter of the disk about $\frac{1}{2}$ or $\frac{3}{4}$ of an inch.

The disk is remarkably membranaceous, so much so that it requires care in handling the animal to avoid tearing this part. This character, and that of the series of imbricated scales or plates situated near the superior edge of the disk, amply distinguish this species.

10. O. *appressa*. Disk orbicular, granulated: spines of the rays short, adpressed, in about seven series.

Inhabits the coast of Florida.

Disk orbicular; surface minutely and regularly granulated: *rays* on the back with a single series of transversely, oblong subquadrate plates, their tips parallel to their bases, and both rectilinear; beneath with a series of rounded subquadrate plates, entire at their tips: *spines* hardly more than half the length of the segment, and adpressed to it, sub-equal, the one or two inferior ones rather largest, placed in from six to nine series: *colour* dusky cinereous, with darker annulations on the rays.

Diameter of the disk nearly $\frac{1}{2}$ an inch.

The granulations of the disk are equal, and placed side by side, in contact with each other.*

* O. *cirrosa*. Disk small; rays convex, much elongated, cirriform; spines shorter than the diameter of the ray.

Inhabits the West Indies.

Disk small, deeply emarginated between the rays, surface granulated, and with ten elevated rounded lines placed in pairs and extending from the centre to the base of the rays: *rays* slender, very much elongated, resembling tendrils, remarkably attenuated towards the tip, granulated throughout, pale yellowish, the incisures bright fulvous; *spines* very short, towards the base of the ray conic, shorter than the distance between them, towards the middle of the ray cylindric, truncated or very obtuse at tip, longer than those near the base, but still shorter than the diameter of the ray, towards the tip of the rays, the spines rapidly diminish in length.

Diameter about $11\frac{1}{2}$ inches.

Diameter of the base of a ray one-tenth of an inch.

Diameter of the disk nearly three-tenths of an inch.

This is a beautiful and curious species, belonging to the Philadelphia Museum, to which Mr. T. Peale informs me it was presented by Mr. F. Brauil, who obtained it in the West Indies. The specimen is supported on a Gorgonia, around the branches

EURYALE, *Lam.*

E. *muricatum*, Lam. This fine species was described by Lamarck, from a specimen belonging to the French Museum, the native country of which was unknown. A very perfect specimen has lately been presented to the Academy by Lieutenant Gandtt of the Navy: it was taken at the Florida Keys, and the species is therefore an inhabitant of the coast of the United States. Mr. T. Peale also obtained two specimens at the same place.

The late Dr. Waterhouse mentioned to me a species of this genus that was cast upon the shore of one of the Eastern States, and from his description of the animal, I supposed it to be the E. *costosum*, Linck, but not having seen it, I cannot with any degree of propriety add it to this paper.

ALECTRO, *Leach.*

A. *dentata.* Rays simple, bifid; cilia tapering; tentacula with a prominent tooth on the middle of the last joint.

Inhabits the coast of New Jersey.

Rays slender, bifid nearly to the base, destitute of

of which it has twined its tendril-like rays in numerous volutions. These rays have an annular appearance throughout their whole length, in consequence of the fine fulvous colour of the incisures of the segments, and the paler colour of the segments themselves. It is certainly very distinct from either of the six species, having convex rays, described by Lamarck.

spines on the back: *cilia* from six to nine jointed, rather long, gradually and regularly attenuated to the tip: *dorsal tentacula* about twenty-seven, of which the largest are sixteen jointed, and the smallest ten jointed, slightly larger towards the tip, smooth; joints a little contracted at their middle; terminal joint ending in an incurved, acute claw, and with a prominent tooth on its inner middle.

Diameter about $2\frac{1}{4}$ inches.

Of this small species an individual belongs to the Philadelphia Museum, found at Great Egg Harbour by Mr. Titian Peale. As neither Leach, Lamarck, nor Miller have noticed a tooth on the inner side of the last joint of the tentacula of the species they have described, we cannot suppose that it exists in either of those species, otherwise this character would not have been overlooked. The genuine name ALECTRO has the priority over that of COMATULA of Lamarck, we therefore cannot choose but adopt it.

Description of a variety of the COLUBER *fulvius, Linn. a new species of* SCINCUS, *and two new species of* SALAMANDRA. *By* R. HARLAN, M. D. *Read September* 6, 1825.

Dr. William Blanding, a corresponding member of the Academy, has recently presented to the Society, a splendid collection of Reptilia, Crustacea, Insecta, &c. from the vicinity of Camden, South Carolina,

his place of residence. The present specimen is one of that collection.

Col. *fulvius*, Linn. Var. (H.)

Char. Coluber with 18 deep black rings, with as many scarlet or blood-red intervening ones, separated by narrow rings of whitish-yellow bands.

Dimensions. Length two feet, of which the tail includes three inches. Abdominal plates two hundred and two: subcaudal scales forty pairs.

Description. A single row of teeth in the upper jaw, with a perforated fang on each side: consequently this species is to be considered as poisonous: in which it differs from the Coluber *coccineus*, (as well as in the disposition of the colours:) but agrees with the *fulvius* in possessing fangs, though Daudin describes the latter as innocent.

The black rings are broad above and narrow below; the reverse is observed of the scarlet rings; the latter display a mixture more or less of a blackish colour. In the centre of many of the scarlet rings on the abdomen, there is a large circular black spot: on the tail the yellowish-white and black rings alone prevail, as in the *fulvius*. The rings commence with yellowish-white, surrounding the occiput. The face is black.

Inhabits Charleston South Carolina. A specimen in the Cabinet of the Academy of Natural Sciences.

Note. It appears to be this variety which Mr. Say has compared with the C. *coccineus*. Vid. Silliman's Journal. The *fulvius* of Linn. has no *red* bands.

SCINCUS.

S. *unicolor*. Char. Universal colour, a dark silver gray; head small; snout acute; tail about the length of the body.

DIMENSIONS. Total length $3\frac{5}{10}$ inches; of the tail $1\frac{8}{10}$ inches.

DESCRIPTION. Head small and triangular, less thick than the body; covered above with nine plates; superciliary ridge composed of four plates; meatus externus rather large, transversely oval: *tail* small, abruptly conical: universal colour dark silver gray, lighter beneath: *back* obsoletely striated.

This species, the smallest of the family, belongs to the collection in the Philadelphia Museum; it is not known certainly from whence it came, but is supposed to inhabit the Southern States.

SALAMANDRA.

1. S. *cylindracea*. Char. General colour blackish, clouded with confluent white blotches on the sides; head thick and oval; tail cylindrical, longer than the body; all the toes fissile.

DIMENSIONS. Total length about five inches; from the snout to the base of the tail $2\frac{4}{10}$ inches; extremity of the tail lost.

DESCRIPTION. Male. Head larger than the neck, oval and slightly protuberant at the occiput; eyes large, protuberant; snout obtuse: tail cylindrical,

thick and gradually tapering; skin beneath the neck folded transversely; vent, a simple longitudinal rima: general colour blackish or dark slate green; lightest on the throat and underneath the tail; sides clouded with confluent white blotches.

Female of a darker colour, with the head flatter, and with a slightly impressed longitudinal furrow along the spine.

Habit. The tail of this species being perfectly cylindrical, would appear to indicate its terrestrial nature.

Inhabits South Carolina. Presented to me by Dr. Blanding.

2. S. *symmetrica.* Char. Colour dusky-brown, or fuscous above; orange yellow beneath; a row of deep orange-coloured spots on each side of the spine, symmetrically arranged; tail compressed, longer than the body.

Dimensions. Total length 3 inches; of the tail $1\frac{3}{10}$ inches.

Description. Female. A delicate and well proportioned animal, head rather small, somewhat flattened; in some specimens marked with three small spots above; skin of the neck not folded transversely; eyes rather large, though not protuberant; a row of deep orange coloured oval spots, nine or ten in number, lining each side of the spine; and arranged symmetrically; vent, very protuberant, circular, and puckered in both sexes. Colour of the lower parts of the body, orange yellow, sparsely spotted with minute black dots; upper surface of the body dusky

brown. From the appearance of the generative organs, these animals must have died in the season of their amours.

Male of a larger size and lighter colours; with a broad ancipital tail.

Inhabits South Carolina. Presented by Dr. Blanding.

NOTE. This species bears no resemblance to the S. punctata Daud. which is the Lacerta aquatica, var. β, Gmel. and which Professor Barton and others have confounded with the "Stellio" of Catesby: the latter being in fact, only a variety of the S. *subviolacea* Barton, as is clearly demonstrated by a specimen I have lately received from Camden S. C. through Dr. Blanding. Mr. Say on the contrary, appears to have confounded the S. *symmetrica* with the Stellio, in his "notes on Herpetology." Vide Silliman's Journal. vol. 1. p. 264.

Observations on a species of ANEMONE, *of the section* PULSATILLA, *indigenous to the United States. By* THOMAS NUTTALL. *Read October* 11, 1825.

That the genus ANEMONE, as constituted by Linnæus and his successors, even after the judicious separation of HEPATICA by Willdenow, still requires revision, must, I conceive, be apparent to all who have ever compared the *Pulsatillas* with such other assumed species of the genus, as A. *virginiana*, A. *caroliniana*, or A. *thalictroides*: the last, indeed, with strict propriety, has been referred by De Candolle to THALICTRUM, and the *Pulsatillas* are sectionally di-

vided by Persoon, from his *Anemonoides*, being distinguished remarkably from the latter by the long plumose appendages of their spreading carpelles, in which particular, though remote in habit, they bear so marked an affinity to the genus CLEMATIS, that Pursh, deceived by imperfect specimens of our plant, named it CLEMATIS *hirsutissima*, (2. p. 385) and by this name he marked the specimen in Mr. Lambert's herbarium which I had collected. In the work on the Genera of North American plants and the rarer species, Vol. II. p. 20, I have attempted to describe it as ANEMONE **ludoviciana*, having a 1-flowered involucrate scape, remarkably soft and lanuginous (no ways hirsute) with the segments subulately divided; the leaves pseudo-digitate, multifid, and smooth on the upper surface, the segments entire, linear and acute; the petals 6, oblong-ovate, and nearly erect.

This species has also been introduced into the *Systema Vegetabilium* of De Candolle, by the name of ANEMONE *Nuttallii*; and the better to illustrate it, I have now added a figure from a sketch made on the spot (vid. *Pl.* viii.) Like most of the section to which it appertains, it grows on exposed bare hills, and flowers early in the month of April. The colour of the flower is a grayish sombre blue. We found it growing in considerable tufts, on hills near the confluence of the Missouri and Platte rivers. It would be highly acceptable to the flower garden from its early and showy appearance.

Descriptions of new species of Coleopterous Insects inhabiting the United States. *By* THOMAS SAY. *Read January* 18, 1825.

DYTISCUS, *Linn. Latr.*

1. D. *liberus.* Thorax obscure rufous; elytra brownish, glabrous, with three obsolete series of punctures.

Body impunctured, glabrous, oval: *head* very obscure rufous; *antennæ* and *palpi* pale: *thorax* obscure rufous, somewhat piceous, varied with dusky: *scutel* piceous: *elytra* dull testaceous, but having a fuscous appearance in consequence of very numerous, minute, blackish, confluent points; a narrow dull testaceous exterior margin, in which the blackish points are less numerous; three series of distant obsolete punctures: *beneath* piceous: *venter* varied with dull testaceous, and with about four spots of the same colour on each lateral margin.

Length less than $\frac{1}{2}$ an inch.

I have never found this insect in Pennsylvania. I purchased several specimens, with a collection of insects, several years ago in New York, of which state it is therefore probably a native. The elytra of the female are not sulcated, but are precisely similar to those of the male.

I have recently received specimens from Dr. Harris of Massachusetts, who obtained them in that state.

Cyphon, *Fabr. Dej.*

1. C. *discoidus.* Testaceous; elytra with a common black disk.

Inhabits Arkansa.

Body oval, pale testaceous, with short yellowish hair: *head* and *thorax* impunctured: *eyes* fuscous: *scutel* triangular, with a slightly depressed margin: *elytra* with a large common black disk; numerous small punctures furnishing hairs: *wings* black.

Length $\frac{1}{5}$ of an inch.

Taken on the banks of the river Arkansa by Mr. Thomas Nuttall.

2. C. *ovalis.* Blackish, or yellowish-brown, pubescent; thorax narrow, transverse.

Body rather short, oval, considerably depressed, blackish or yellowish brown; with short, numerous hairs: *antennæ* and *palpi* pale yellowish-brown: *thorax* transverse, narrow, not rounded on the anterior edge; punctures more distinct each side: *elytra* with numerous impressed punctures gradually becoming obsolete behind: *feet* pale yellowish-brown.

Length $\frac{1}{10}$ of an inch.

More rounded and less sericeous than C. *griseus* Fab., and somewhat larger than C. *padi*, Gyl.

Lampyris, *Linn. Latr.*

1. L. *ruficollis.* Blackish; antennæ and thorax rufous.

Lampyris ruficollis, Melsh. Catal.

Head black, polished, with short hairs; *eyes* rather small, prominent; *antennæ* and *palpi* dull rufous: *thorax* transversely oblong-quadrate, with short hairs, polished; anterior angles rounded; anterior margin not extended over the head; rufous, a little dusky before the middle: *elytra* blackish, with numerous punctures furnishing short hairs: *pectus* rufous on the lateral margin: *tibiæ* obscure rufous.

Length $\frac{3}{20}$ of an inch.

The smallest North American species I have seen and very distinct by its characters from any of them. It does not appear to be endowed with the power of yielding light.

2. *L. angulata.* Blackish-brown; thorax yellowish, with a vitta and lateral margin, black; elytra margined with yellowish.

Lampyris marginata, Melsh. Catal.

Body dilated: *head* dull rosaceous, with an obscure frontal spot and vertex, blackish; *antennæ* simple, blackish, basal joint pale; *palpi* blackish: *thorax* obtusely somewhat angulated before; a dilated black vitta attenuated before, on each side of which towards the base is a large pale rosaceous space, and towards the tip each side a dull yellowish one; lateral margin blackish; a longitudinal elevated line; lateral margin a little excurved near the posterior angles; posterior edge arcuated each side: *scutel* black: *elytra* with a broad outer margin and narrow sutural margin and tip, yellowish: *abdomen*, terminal segments bright yellow.

Length $\frac{2}{5}$ of an inch.

In general form, and colour of the thorax, it resembles the *corrusca* Linn. which, however, is destitute of coloured margins to the elytra, and its thorax is rounded before; it is very different from the *marginata* Linn. by its much more dilated form. I have one specimen which is $\frac{3}{5}$ of an inch in length.

3. L. *centrata*. Thorax rosaceous, with a black centre; elytra margined with yellowish.

Lampyris limbata, Melsh. Catal.

Body oblong: *head* blackish; *mouth* dull rufous; *antennæ* simple, compressed and with the palpi, black: *thorax* rounded before, destitute of a carinated line; a black vitta, each side of which is a large rosaceous spot; lateral margin not excurved towards the posterior angles, yellowish; anterior margin dull testaceous-yellow; posterior edge rectilinear: *elytra* brownish-black, a narrow exterior, sutural and terminal margin, yellowish: *abdomen*, terminal segments bright yellow.

Length from $\frac{2}{5}$ to $\frac{9}{10}$ of an inch.

Var. a. Thoracic vitta abbreviated.

Very similar in its markings to the preceding, but is less dilated, the thorax is rounded before, with its posterior edge rectilinear, and the lateral margin is not blackish, &c.

4. L. *reticulata*. Elytra dusky, with longitudinal elevated lines, and transverse ones in the interstitial spaces.

Body rather slender: *head* yellowish; *eyes* black:

thorax wider than long, accurately rounded before; depressed margin wide at the posterior angles; pale yellowish, blackish on the disk; lateral and anterior margins a little recurved: *elytra* fuscous, with longitudinal elevated lines, and intermediate, transverse, somewhat irregular ones: *pectus* pale yellow each side: *postpectus* and *feet* pale yellow.

Length less than $\frac{1}{5}$ of an inch.

A single specimen was brought from Arkansa by Mr. Thomas Nuttall. It may be readily distinguished from the other species of the United States by its reticulated elytra, and slender form.

5. L. *scinctillans*. Light brown; thorax rosaceous, with a yellowish margin and central black spot; elytra with a yellowish margin.

Lampyris pyralis, Melsh. Catal.

Body oblong: *head* blackish, more or less tinged with rufous; *mouth* paler; *antennæ* brown: *thorax* regularly arcuated before and on each side; bright rosaceous, with a black central spot and impressed line; anterior and lateral margins pale yellowish; posterior edge very slightly arcuated, which extends equally from one angle to the other: *elytra* pale brown, with a narrow exterior, sutural and terminal margin.

Length nearly $\frac{8}{10}$ of an inch.

This is our very abundant "Fire-fly," and is familiar to every inhabitant of this country. It is very like the *centrata* nob., but is much smaller and of a much paler colour. With the late Mr. Melsheimer, I have always hitherto considered this species to be the

pyralis of authors; but on a careful comparison with their descriptions, and particularly that of Olivier and his figure, I have, after much hesitation, concluded that it is distinct from that species. The *pyralis* is described to be equal in size to the *splendidula* and *noctiluca*, but our species is smaller; my chief reliance, however, is on the figure given by Olivier, which is beyond all doubt that of a widely different species from the present.

The female differs from the male in having the elytra imperfect, being not more than one-third the length of the abdomen; they are, however, margined like those of the male.

Cantharis, *Fabr. Dej.*

1. C. *tomentosa.* Rufous; elytra blackish, covered with short hairs; thorax truncated before.

Cantharis tomentosa, Melsh. Catal.

Head prominent, somewhat elongated and attenuated behind the eyes, glabrous, rufous: *antennæ* dusky, pale rufous at base, second and third joints equal: *thorax* rufous, subglabrous, with very minute hairs, polished; lateral margins narrow, more depressed behind; anterior margin truncated; a longitudinal acute impressed line: *scutel* pale rufous: *elytra* blackish, with dense minute hairs, and close set small punctures: *postpectus* dark plumbeous, sericeous, with very short prostrate hairs: *feet* pale rufous; *tibiæ* dusky, the anterior pair somewhat arcuated, so as to have the appearance of being a little dilated

on the inner side towards the tip: *abdomen* dark plumbeous on the disk, lateral margins and tip pale rufous.

Length $\frac{9}{10}$ of an inch.

2. C. *rotundicollis*. Pale rufous; elytra plumbeous, sericeous; thorax rounded before.

Head rounded, sericeous on the front, towards the tip a little varied with black; *antennæ* hardly darker than the head, third joint longer than the second, but not twice as long; *mandibles* black at tip and on the inner margin: *thorax* pale rufous, polished, with short hairs, somewhat inequal; lateral margins nearly obsolete behind, depressed before; posterior margin abruptly depressed; anterior margin regularly rounded, lateral angles none: *scutel* pale rufous: *elytra* plumbeous and decidedly sericeous, varying with the incidence of the light: *beneath* pale rufous, sericeous: *anterior tibiæ* simple.

Length nearly $\frac{3}{4}$ of an inch.

The colours of this species, as well as their distribution, are so very similar to those of the preceding, that it might be easily mistaken for the same, but it differs in the anterior rotundity of the thorax and the simplicity of the anterior tibiæ.

3. C. *ligata*. Pale ochreous; head with two lines and thorax with a vitta, black.

Body pale ochreous: *head* with two very obvious black lines, proceeding from the base of the antennæ and converging a little to the neck; *antennæ* black, second joint very small, half the length of the third,

which is not more than two-thirds the length of the fourth; *mouth* prominent, with a black line each side above; *palpi* long, terminal joint but little dilated: *thorax* quadrate, not transverse; lateral edges rectilinear; angles rounded, posterior ones more acutely so; a broad black vitta, which, however, does not affect the anterior and posterior raised edges: *elytra* immaculate: *wings* black: *tibiæ* and *tarsi* black, *nails* simple.

Length more than $\frac{2}{5}$ of an inch.

The form of the palpi prove this species to be closely related to MALTHINUS. I found the specimen near the cantonment of Major Long's exploring party on the Missouri river.

4. C. *jactata.* Pale ochreous; thorax with an impressed line, dull rufous, yellowish each side.

Body pale ochreous; *head* yellowish before, above the antennæ black, polished; *antennæ* black beneath, and basal joint rufous; second joint half as long as the third, which is equal to the fourth: *thorax* transverse, rounded before; posterior angles acute; yellowish each side, on the disk rufous with a blackish line, and with an indented line extending from the middle to the posterior raised edge: *elytra* immaculate: *postpectus* blackish on each side: *tibiæ* and *tarsi* black above, nails with a prominent tooth: *venter* blackish in the middle.

Length more than $\frac{2}{5}$ of an inch.

I found this species when with Major Long's party, near the Rocky Mountains.

5. C. *parallela*. Black; thorax yellow, with a black vitta.

Head black; *mandibles* honey-yellow; *antennæ* with the first joint yellowish beneath, second joint half the length of the third, which is equal to the fourth: *thorax* yellow, with a slight tinge of rufous, with a black equal vitta, which occupies not more than one-fourth or one-fifth of the surface; anterior portion rather narrower than the posterior margin; angles rounded: *elytra* black: *beneath* black: *pectus* yellow: *nails* armed with a tooth.

Length more than $\frac{1}{4}$ of an inch.

This species was labelled in my cabinet with the name of *lineola*, but that name is pre-occupied. The black line of the thorax is well defined, and its sides are parallel. Occurs in June.

6. C. *laticornis*. Black; thorax with the lateral margin yellow; antennæ serrate.

Body black: *head* somewhat yellowish before; *antennæ* a little dilated and serrate on the inner side; second joint very small, less than one-third the length of the third joint, which is equal to the fourth: *thorax* a little narrower before, lateral narrow margins honey-yellow; middle of the lateral edge contracted; posterior angles subacute: *pectus* yellowish: *nails* simple, posterior pair with a slight tooth.

Length nearly $\frac{3}{10}$ of an inch.

7. C. *scitula*. Dusky; thorax, margin of the elytra and feet yellow.

Head black, anterior half yellowish; *antennæ* with

the two basal joints beneath yellowish, second joint rather large, two-thirds the length of the third joint, which is equal to the fourth: *thorax* yellow, immaculate; anterior angles obtusely rounded, posterior angles acutely rounded: *elytra* dusky, with a pale yellowish margin, the sutural margin very broad, near the scutel occupying nearly half the width of the elytrum: *beneath* pale yellowish; *postpectus* and *venter* varied with dusky: *nails* armed with a tooth.

Length more than $\frac{1}{4}$ of an inch.

8. C. ? *bidentata.* Thorax bidentate, yellow; antennæ serrate.

Body black: *antennæ* dilated, joints short, serrate; second joint very small, not dilated, half as long as the third, which is equal to the fourth: *thorax* yellow; near the posterior angle on each side are two prominent, approximate, parallel teeth.

Length more than $\frac{3}{20}$ of an inch.

Malachius, Fabr.

1. M. *flavilabris.* Purplish-black; head at tip yellow.

Body black, with a slight tinge of purplish, particularly on the elytra: *head* polished deep black between and above the eyes, anterior to which it is bright yellow; *antennæ* beneath one half the length yellow: *anterior pairs of feet* yellow, coxæ and thighs with a dilated black line; *posterior feet* dusky.

Length to the tip of the elytra more than $\frac{1}{10}$ of an inch.

2. M. *pusillus*. Purplish-black; feet, excepting the posterior tibiæ, yellow.

Head polished black; *antennæ* at base yellow; *mandibles* yellow, piceous at tip: *anterior pairs* of feet excepting the patella, yellow; *posterior pair* yellow, tibiæ and line on the thighs, black.

Length more than $\frac{1}{20}$ of an inch.

I received the two insects above described from Dr. J. F. Melsheimer, under the names I have given to them.

3. M. *scincetus*. Pale yellowish; thoracic disk black.

Head yellow, black at base: *thorax* deep black on the disk, each side and basal edge yellow: *scutel* black; *elytra* pale yellowish, suture excepting towards the tip blackish: *pectus* yellow, with a blackish spot each side: *postpectus* yellow, lateral and posterior margins black: *abdomen* black, incisures and lateral edge yellow.

Length $\frac{1}{10}$ of an inch.

A common species, remarkable for its pale colour.

4. M. *apicialis*. Black; thorax sanguineous; feet and tip of the elytra whitish.

Head black, polished; *antennæ* yellowish: *thorax* sanguineous, dusky on the anterior margin: *elytra* black, polished; a large, rounded, whitish, somewhat hyaline spot occupying the tip: *feet* and posterior part of the venter pale yellow or whitish.

Length less than $\frac{1}{10}$ of an inch.

I obtained this species when with Major Long's party in Missouri.

5. M. *terminalis*. Blackish; terminal margin of the elytra pale testaceous.

Body black, polished, somewhat hairy; *antennæ* at base, *clypeus* on its anterior margin and *labrum* dull rufous: *elytra* with the apicial margin only pale testaceous: *anterior thighs* beneath, piceous: *abdomen* with the segments margined with pale testaceous.

Length less than $\frac{1}{10}$ of an inch: of a more robust form than the preceding insect.

Xyletinus, *Latr.*

X. *sericeus*. Brown; thorax indented each side behind; elytra striate.

Anobium sericeum, Melsh. Catal.

Body cylindrical, with minute prostrate hairs: *head* granulated; *antennæ* rufous; *mouth* with golden yellow hair: *thorax* granulated; an obvious longitudinal impressed line, terminating behind in a short carina, which separates two impressed transverse spaces; lateral edge prominent: *elytra* with regular impressed striæ, in which are equal, large, impressed punctures.

Length $\frac{1}{7}$ of an inch.

If the short Fabrician description of *serricornis* be accurate, there can be no doubt that the present species is distinct.

Anobium, *Fabr.*

1. A. *gibbosum*. Thorax much elevated, acute, in the middle.

Anobium gibbosum, Melsh. Catal.

Body very hairy, brown; hairs more or less ferruginous: *antennæ* nearly naked, reddish-brown: *thorax* much elevated in the middle, the tip of the prominent part bifid: *elytra* with irregular striæ of punctures; a few more prominent tufts of hairs; *humerus* prominent: *postpectus* dusky.

Length more than $\frac{1}{4}$ of an inch.

The hairy surface, and prominence of the thorax render this a striking species. It is not common.

2. A. *bi-striatum*. Black; feet dull rufous; antennæ pale yellowish.

Thorax a little compressed before, with a slight oblique groove each side, proceeding backward and becoming confluent on the posterior submargin; lateral margin impressed, edge rather prominent; anterior edge slightly reflected: *elytra* with obsolete series of impressed punctures; on the lateral margin are two deeply impressed striæ.

Length more than $\frac{1}{20}$ of an inch.

A small but very distinct species.

3. A. *notatum*. Above blackish, varied with cinereous; thorax with the posterior angles subacute.

Head with cinereous hair on the front; *antennæ* glabrous, rufous, as long as the thorax: *thorax* blackish-brown, a longitudinal impressed line, in which is very short cinereous hair, on each side of which is a small obsolete cinereous spot; base with a large cinereous patch; posterior angles rather prominent, subacute: *scutel* cinereous: *elytra* striate, punctured,

with short cinereous lines in the interstitial spaces, forming a band beyond the middle, and at base generally enclosing a black spot: *beneath* cinereous; *feet* blackish-rufous.

Length more than $\frac{3}{20}$ of an inch.

This pretty species is not at all common.

4. A. *tenuestriatum*. Reddish-brown; sericeous; elytra with filiform striæ.

Anobium villosum, Melsh. Catal.

Antennæ moderate, the terminal joints not unusually elongated, the length of each not being equal to three times its breadth: *thorax* not remarkably convex, a little indented transversely each side on the posterior margin, but not carinated on the posterior middle; before the middle on each side, in a particular light, is a rounded spot of the general yellowish sericeous hair: *elytra* with very slender, not deeply impressed, punctured striæ.

Length less than $\frac{3}{20}$ of an inch.

A very common species; it frequently occurs in our Museums. It is also very destructive to Iris root of the shops, and to various other farinaceous substances. It has some resemblance to the A. *striatum* Fabr. of Europe, but the terminal joints of the antennæ are less elongated, the thorax is less contracted before, and the striæ of the elytra are much narrower. The name given by Mr. Melsheimer is pre-occupied.

Tillus, *Fabr. Latr.*

1. T. *bicolor*. Black; thorax rufous, anterior and posterior margins black.

Body hairy: *head* black: *antennæ* dusky, pale rufous at base: *mouth* pale rufous: *thorax* contracted behind the middle, and a little dilated at the middle; rufous, anterior and posterior margins black: *elytra* black, with regular striæ of punctures: *pectus* rufous, anterior and posterior margins black: *postpectus* piceous: *feet* yellowish, knees and tarsi dusky.

Length more than $\frac{3}{10}$ of an inch.

Resembles T. *elongatus*, Linn. of Europe, but the middle of the pectus is not black, and the anterior and posterior margins of the thorax are black. Mr. Nuttall brought me a specimen of this insect from Arkansa, and Dr. J. F. Melsheimer sent me one under the name which I have adopted.

2. T. *undulatus*. Elytra pale testaceous, two undulated bands and tip black.

Notoxus undulatus, Melsh. Catal.

Body long, slender: *head* black: *eyes* nearly entire: *antennæ* pale rufous, nearly filiform, slightly larger towards the tip, and hardly serrated: *palpi* pale rufous: *thorax* blackish, cylindrical, transversely indented on the anterior submargin, a little dilated on the middle of the lateral margin, and narrower behind: *elytra* with regular striæ of punctures, pale testaceous; basal margin blackish; an undulated band before the middle, another behind, the middle and tip black:

beneath rufous, *stethidium* sometimes varied with blackish: *feet* pale testaceous; *nails* pectinated.

Length nearly $\frac{1}{4}$ of an inch.

This insect has the habit of a NOTOXUS, but it cannot be congeneric with the *mollis*, owing to the conformation of the first joint of the tarsi, which agrees with that of the present genus. The antennæ are much less serrated than those of *elongatus* Fabr. and are proportionally longer, the nails also are pectinated.

CLERUS, *Fabr. Dej.*

1. C. *trifasciatus*. Rufous; elytra with a broad band on the middle, and tip black, an intermediate cinereous band.

Body hairy, bright rufous: *head* at tip dusky: *antennæ* black, terminal joint rufous at tip: *thorax* short, the transverse indentation rather deep: *elytra* rufous and granulated at base; on the middle a much dilated deep black band, undulated on its anterior and posterior edges, and with a narrow cinereous line at its anterior edge; behind this black band is a pale rufous band so covered by cinereous hair as to appear entirely cinereous; tip deep black: *beneath* rufous: *feet* hairy, black.

Length more than $\frac{9}{20}$ of an inch.

This insect has considerable resemblance to the *ichneumoneus* Fabr. and *rufus* Oliv. but the black band occupies the situation of the rufous band of those insects, behind this band those two species have

a black band, but in our insect this is rufo-cinereous; the tip also is deep black, whereas in the above mentioned species, it is either spotted or margined with cinereous.

2. C. *pallipennis*. Blackish; elytra pale testaceous, bifasciate with black.

Body greenish-black: *antennæ* and *palpi* pale rufous, terminal joint of the former a little dusky: *thorax* widest before the middle, contracted behind; an indented transverse line on the anterior submargin, and a less conspicuous one on the posterior margin: *elytra* very pale testaceous, with a black band on the middle, and another at tip: *feet* pale testaceous, posterior pair rather long.

Length less than $\frac{1}{3}$ of an inch.

Similar in form to the *humeralis* nobis.

3. C. *unifasciatus*. Blackish; elytra with a white band on the middle.

Body black, tinged with greenish: *antennæ* and *palpi* pale rufous: *thorax* widest before the middle, so as to resemble a tubercle on each side: *elytra* with a very narrow, pure white band on the middle: *feet* blackish; *tarsi* pale.

Length rather more than $\frac{1}{10}$ of an inch.

Of a form similar to the preceding.

Enoplium, *Latr.*

E. *dislocatum*. Black; elytra with a whitish band and spots.

Body punctured, black, hairy: *head* on the anterior

part reddish-yellow; *antennæ* brownish, yellowish at base, terminal joints not deeply serrated, somewhat rounded: *thorax* subcylindric: *elytra* with an oblique line from the humerus, having a spot at its inner tip, an angulated band beyond the middle, and a spot near the tip, whitish-yellow: *feet* pale.

Length from $\frac{3}{20}$ to nearly $\frac{1}{5}$ of an inch.

Var. a. Spot at tip of the elytra obsolete or wanting.

Although the antennæ differ considerably from the characteristic form of this genus, yet as they have three large and separated joints at tip, and the palpi are all filiform, with five distinct joints to the tarsi, I have thought best to place the present insect in the genus ENOPLIUM.

NECROPHORUS, *Fabr.*

N. *orbicollis.* Thorax orbicular; elytra with a rufous band before the middle, and spot at tip.

Body deep black, above polished: *clypeus* before, with a large, square, rufous spot: *antennæ* black; *clavum*, excepting its first joint, light ferruginous: *thorax* orbicular, margined all round, excepting on the anterior portion, which is truncated; the impressed lines are well defined, and the longitudinal one extends to the base undiminished: *elytra* minutely punctured, and with two obsolete nervures; the anterior band is rather before the middle, but does not extend to the scutel; it is undulated, and does not reach the suture; the spot at tip is somewhat

reniform or trilobate, and does not reach the edge or suture: *beneath* piceous: *feet* above black: *postpectus* yellow sericeous.

Length more than $\frac{9}{10}$ of an inch.

It differs from *marginatus* Fabr. particularly in the rounded form of the thorax, which in that species is much narrowed behind; the elytra of *marginatus* have a rufous exterior margin, the basal band is not interrupted by the suture, and embraces the tip of the scutel; there is also a band at tip. The colours of the antennæ are arranged exactly as in *vespillo* Fabr. but the thorax is much more accurately rounded, and the elytral markings are different. The rotundity of the thorax is more complete than even that of *mortuorum* Fabr. The species occurs in the N. W. Territory: it is very rare in the middle states. I have received a specimen from Dr. T. W. Harris of Milton, Massachusetts.

Nitidula, *Fabr. Dej.*

1. N. 6-*maculata*. Blackish, with a broad pale rufous margin and elytral spots.

Nitidula 6-*maculata*, Melsh. Catal.

Body blackish-brown, or deep piceous: *antennæ* pale rufous: *thorax* with a dilated pale rufous margin: *elytra* with a dilated pale rufous margin; an angulated line in the form of a U at base, a small spot on the submargin, sometimes connected with a line which runs towards the tip, and becomes confluent with the lateral margin; an angulated or rounded spot

behind the middle, rufous: *beneath* piceous: *feet* paler.

Length more than $\frac{1}{4}$ of an inch.

The rufous angular line at the base of each elytrum, in the form of the letter U, is a striking character.

2. N. *ziczac.* Black-brown; elytra with an angulated band.

Body dark brown or blackish, with numerous prostrate hairs: *antennæ* piceous, two basal joints rufous: *thorax* with a rufo-cinereous lateral margin: *elytra* without striæ, an obsoletely rufo-cinereous margin; on each is one or two obsolete rufous spots at base, and a very obvious ochreous spot on the middle, in the form of a V, the angle pointing towards the base: *beneath* blackish-piceous: *feet* and lateral margin of the *pectus*, rufous.

Length more than $\frac{3}{20}$ of an inch.

This species was sent me by Dr. J. F. Melsheimer, who remarked, that "it resembles the European NITIDULA *undulata* very much, but differs in having the undula or lunule nearer to the apex of the elytra." With that species I am entirely unacquainted.

3. N. *undulata.* Yellowish-fulvous, varied with fuscous; an undulated, common immaculate space behind the middle of the elytra.

Nitidula undulata, Melsh. Catal.

Body above fulvous, more or less tinged with yellowish: *head* varied with fuscous, sometimes nearly all fuscous, with the exception of the anterior portion,

and the antennæ: *thorax* literate with fuscous, the broad lateral margins immaculate, with the exception of a single spot on the middle: *elytra* irregularly marked with small fuscous spots; a large, common, transverse, undulated, immaculate space behind the middle; slightly striated; striæ not obviously punctured, but furnished with very short recurved hairs; exterior margin immaculate: *beneath* rufous: *feet* and *tail* paler.

Length about $\frac{1}{8}$ of an inch.

The European analogue of this insect is certainly the N. *varia* Fabr., but the spots of the elytra of that insect seem to be more distinctly arranged in abbreviated longitudinal lines, and the common immaculate space of the elytra appears to me to be less obvious, and less acutely undulated. I know of no species in this country, for which it can be readily mistaken. It may possibly prove to be a variety of the *varia*.

4. N. *rufa*. Dull rufous, immaculate; elytra somewhat truncated at tip.

Nitidula rufa, Melsh. Catal.

Body obscure rufous, with the margin a little paler: *thorax* with the lateral edge a little curved inwards, so that the greatest breadth is anterior to the posterior angles: *elytra* destitute of any appearance of spots, lines or striæ, but on the sutural submargin is a longitudinal hardly elevated undulation; tip not reaching the tip of the tergum, truncated, or very obtusely rounded: *feet* and terminal segment of the *venter*, paler.

Length less than $\frac{5}{100}$ of an inch.

5. N. *geminata.* Reddish-brown; elytra, each with 4 ochreous spots, placed 2, 2.

Body obscure reddish-brown, a little hairy: *thorax* widest at the basal angles; lateral margin rufous: *elytra* striate with elevated, acute lines, and with intervening regularly concave grooves; tip rounded, concealing the extremity of the abdomen; on each elytrum are four ochreous spots, of which one is on the humerus; another near the scutel, elongated, approaching the suture near the tip, and sometimes common; and two other rounded ones beyond the middle, placed transversely, equal; exterior margin obscure ochreous.

Length more than $\frac{1}{10}$ of an inch.

The general colour of the elytra is sometimes so similar to that of the spots, that the latter are hardly observable.

6. N. 8-*maculata.* Dark reddish-brown; elytra with four rufous spots, placed 1, 2, 1.

Body very obscure reddish-brown: *front* with two indentations: *thorax* rather large; lateral margin paler: *elytra* striate with slightly elevated lines; a rufous oblong spot at the middle of the base, a rounded one behind the humerus, another on the sutural margin near the middle, and a fourth a little behind the middle, oval, oblique; tip rounded, concealing the tip of the abdomen, and rufous.

Length more than $\frac{1}{10}$ of an inch.

The lines of the elytra are more obtuse than those

of the preceding species, the interstitial spaces are not so regularly grooved, and the spots are located differently. I found it in plenty, when on the Arkansa river with Major Long's party.

7. N. *unilineata.* Reddish-brown; thorax with a line and elytra, each with about five spots, rufous.

Body obscure reddish-brown: *thorax* with the lateral margins, and longitudinal dorsal line rufous: *elytra* destitute of striæ; a large oblong spot at base, near the scutel, a rounded one on the humerus, another near the middle; an obsolete longitudinal line on the middle of the exterior submargin, a rounded spot on the subsutural margin, rather behind the middle, another near the tip, and exterior and terminal margin, rufous; tip very obtusely rounded, almost truncate, not covering the termination of the abdomen.

Length more than $\frac{1}{10}$ of an inch.

For this species I am indebted to Dr. J. F. Melsheimer.

8. N. *semitecta.* Piceous; elytra abbreviated, rufous, piceous at tip.

Nitidula hæmiptera, Melsh. Catal.

Body dark rufo-piceous, punctured: *head* with an indentation each side above the antennæ; *antennæ* rufous: *clava* oval, dusky: *elytra* about half the length of the abdomen, truncated, yellowish-rufous, or testaceous; exterior margin and tip rufo-piceous.

Length nearly $\frac{3}{20}$ of an inch.

The name given by Mr. Melsheimer is preoccupied.

9. N. *unicolor*. Piceous, immaculate; elytra abbreviated, slightly sericeous.

Body rufo-piceous: *head* with dense, confluent, small punctures: *thorax* with small confluent punctures: *elytra* darker, about half the length of the abdomen, a little sericeous in a particular light: *beneath* somewhat paler.

Length less than $\frac{1}{5}$ of an inch.

I have found this species under loose bark of the yellow pine, in October.

10. N. *brachyptera*. Piceous, immaculate; elytra two-thirds the length of the abdomen.

Nitidula brachyptera, Melsh. Catal.

Body entirely piceous: *head* with an impressed, transverse line between the antennæ; *antennæ* rufous: *thorax*, posterior angles rounded: *elytra* abruptly truncate at tip, rather more than two-thirds the length of the abdomen: *feet* rufous.

Length less than $\frac{1}{10}$ of an inch.

The smallest species I have seen.

Scaphisoma, *Leach*.

S. *convexa*. Highly polished, black; antennæ, mouth, feet and tail piceous.

Scaphidium convexum. Melsh. Catal.

Body black, very highly polished; *head* piceous, paler before, with a deeply impressed transverse arcuated line between the eyes: *thorax* with minute, rather distant punctures: *elytra*, punctures, excepting towards the base, more obvious than those of the

thorax; terminal and posterior lateral margin obscurely piceous: *feet, abdominal incisures* and *tail* piceous.

Length $\frac{1}{10}$ of an inch.

I received this species from Dr. J. F. Melsheimer, under the denomination I have adopted. From all I can learn, it seems to be very closely allied to the S. *agarica* of authors, of which, in fact, it may possibly prove to be a variety.

Catops *Fabr.*

1. C. *opacus*. Brownish-black, opaque; terminal and two basal joints of the antennæ rufous.

Ptomophagus opacus, Melsh. Catal.

Body sericeous, with minute hairs, which, in a particular light, are pale ferruginous: *antennæ* with the seventh joint largest, the eighth smallest: *elytra* not striated, but with a subsutural impressed line, and very numerous minute punctures, furnishing minute hairs: *feet* blackish-piceous.

Length less than $\frac{1}{5}$ of an inch.

Occurs frequently in a species of Hydnum.

2. C. *simplex*. Pale brownish, sericeous; terminal and five basal joints of the antennæ rufous.

Inhabits Arkansa.

Head dark ferruginous; *antennæ* dark ferruginous, the five basal joints and terminal joint rufous; *palpi* and mandibles ferruginous: *thorax* rather paler than the head, quadrate, a little transverse; sides regularly arcuated; posterior margin not wider than the an-

terior; posterior edge rectilinear; angles rounded: *elytra* paler than the thorax, light brownish, with obsolete striæ, more obvious towards the tip; very numerous minute punctures, furnishing minute hairs: *beneath* piceous: *feet* rufous; *thighs* yellowish beneath.

Length nearly $\frac{3}{20}$ of an inch.

This species occurred on dung.

Attagenus, *Latr.*

A. *cylindricornis.* Reddish-brown; antennæ and feet pale rufous.

Dermestes cylindricornis, Melsh. Catal.

Body reddish-brown, with very numerous, short, ferruginous, somewhat rigid, sericeous hairs: *head* blackish, with an obscure rufous frontal spot; *antennæ* pale rufous, terminal joint dark brown; *mouth* rufous: *thorax* nearly as dark as the head: *elytra* paler than the thorax: *beneath* piceous-black: *feet* pale rufous.

Length ♂ $\frac{3}{20}$ ♀ less than $\frac{1}{5}$ of an inch.

Var. a. Smaller.

Dermestes floricola, Melsh. Catal.

Var. b. Elytra almost rufous.

Dermestes obscurus, Melsh. Catal.

This species is common.

Megatoma, *Herbst, Latr.*

M. *ornata.* Blackish; elytra undulated with rufous.

Dermestes undulatus, Melsh. Catal.

Body with short, numerous hairs; *antennæ* pale rufous, terminal joint dusky: *thorax* somewhat variegated with irregular lines of rufo-cinereous hairs: *elytra* with one half its surface occupied with rufous spots or irregular lines: *beneath* blackish-brown.

Length $\frac{3}{16}$ of an inch.

The name *undulatus* is pre-occupied by a species described by Herbst. The short hair with which the body is furnished, is deciduous, particularly that of the thorax.

Byrrhus, *Latr.*

B. *alternatus*. Blackish-brassy; elytra with alternate darker lines.

Head and *thorax* minutely punctured, black brassy; with short, prostrate hair; *antennæ* black; the thorax with a slender, impunctured, dorsal line: *elytra* black, very slightly tinged with brassy; striæ very narrow, well impressed, and with very small punctures; interstitial lines flat, alternately more obviously polished; very minute hairs: *beneath* blackish, with small very regular punctures: *feet* blackish-piceous.

Length less than $\frac{1}{4}$ of an inch.

I am indebted to Mr. Charles Pickering, of Salem, Massachusetts, for this species. I have never before met with it.

Elmis, *Latr.*

1. E. *cinctus*. Blackish; elytra with a large rufous, arcuated line and spot at tip.

Parnas cinctus. Melsh. Catal.

Head black; *antennæ* and *palpi* yellowish, dusky on the terminal joint; *thorax* black, anterior and posterior margins pale rufous; a transverse slight elevation each side of the middle, with a corresponding indentation before: *elytra* convex, black, with a large arcuated pale rufous line, extending nearly straight from the humerus obliquely to near the sutural middle; thence it curves outwards and backwards towards the margin; towards the tip, a dilated longitudinal pale rufous line: *feet* elongated; *tibiæ* and base of the *thigh*, pale rufous.

Length rather more than $\frac{1}{10}$ of an inch.

The antennæ are very obviously eleven-jointed, and the terminal joints are slightly enlarged.

2. E. 4-*notatus.* Black; antennæ, two spots on each elytrum, and tarsi rufous.

Body black: *antennæ* entirely rufous; *thorax* simple: *elytra* with striæ of punctures; a large rounded rufous spot at the base of each, chiefly on the humerus, and a rufous elongated, obsolete one on the posterior declivity: *tarsi* rufous.

Length less than $\frac{1}{10}$ of an inch.

Macronychus, *Mull.*

M. *glabratus.* Blackish; feet slender; antennæ pale rufous.

Macronychus glabratus, Knoch, J. F. Melsheimer.

Body entirely blackish; slightly hairy: *thorax*

with a slightly elevated line each side at base, hardly extending to the middle: *elytra* with series of large punctures not very deeply impressed; a more distinct series of hairs near the suture; an elevated, crenate, submarginal line extends from the humerus, but is abbreviated before the tip: *feet* elongated.

Length rather more than $\frac{1}{10}$ of an inch.

Hydrophilus, *Linn. Fabr.*

1. H. *rotundus*. Very convex, oval; elytra destitute of striæ, excepting the sutural one.

Body black, polished, with very numerous, minute, regular punctures: *palpi* piceous: *thorax* with the lateral margin piceous; this colour extends a short distance on the basal margin: *elytra* very obscurely piceous on the lateral margin, without any appearance of striæ or large impressed punctures; the sutural striæ very obvious, not reaching the base, generally hardly surpassing the middle.

Length $\frac{3}{10}$ of an inch.

For this species I am indebted to Dr. J. F. Melsheimer, who informed me that it inhabits "marshy places in forests near the first ridge of the South Mountain, in Adams County, Pennsylvania." I also found it in Georgia. It resembles *globosus* Nob. but is less convex, and is destitute of striæ of the elytra.

2. H. *striatus*. Dull testaceous; head dark greenish; elytra striate, and with small remote black spots.

Hydrophilus striatus, Melsh. Catal.

Head dark greenish, with a cupreous gloss: *thorax* tinged with rufous, with a double, longitudinal abbreviated line: *scutel* black: *elytra* with acute, clely punctured striæ; a small spot on the humerus, nd two others arranged in a very oblique series, ith respect to the first; then a transverse, much undated series of five or six small spots; then two sall spots near the sutural tip, black: *beneath* blackh: *feet* pale rufous.

Length more than $\frac{1}{5}$ of an inch.

About equal in size, and closely allied to the *pegrinus* of Herbst, but that species is represent to be altogether destitute of the black spots on thelytra, and of the double thoracic line.

3. H. *exiguus*. Pale testaceous; elytra with nctured striæ.

Body with numerous small punctures: *head* ith the transverse line very distinct: *elytra* rather ıler than the thorax, with the striæ rather obtuse, ınctured: *beneath* slightly tinged with rufous.

Length $\frac{1}{10}$ of an inch.

This small species I obtained on the sea she of Chincoteage Island.

4. H. *subcupreus*. Black, obsoletely tinge with cupreous; elytra destitute of striæ, excepti the sutural one.

Hydrophilus minutus, Melsh. Catal.

Body oval, punctured, black, with a slight cupreous reflection: *thorax* obsoletely piceous on t lateral margin: *elytra* with rather larger punctus than

thœ of the head and thorax; striæ none, excepting thsutural one, which is obsolete in the middle, and doe not approach the base; exterior margin and tip bsoletely piceous: *beneath* blackish-piceous: *feet* picous.

ength much less than $\frac{1}{10}$ of an inch.

losely allied to the genus SPHÆRIDIUM. It is mu smaller than the *minutus* of Herbst.

SPHÆRIDIUM, *Fabr.*

1S. *prætextatum.* Black; elytra with a yellowishteral and terminal margin.

Sphæridium prætextatum, Melsh. Catal.

Bdy oval, black, polished, punctured: *palpi* whish: *antennæ* piceous: *elytra* striate; striæ very distct, impressed, punctured; interstitial spaces punured; a broad pale yellowish outer margin, comencing at the anterior angle, and gradually dilatinto the tip: *feet* piceous.

Lgth $\frac{3}{10}$ of an inch.

2.. *nigricolle.* Black; elytra and feet pale testaced.

Særidium glabratum, Melsh. Catal.

Bdy oval, polished, punctured: *head* black: *antenn*iceous; capitulum dull rufous: *palpi* piceous: *thora*black: *elytra* testaceous: *striæ* slender, not deepl impressed, punctured; terminal margin obsoletepaler, interstitial lines punctured: *feet* pale testaces.

Lenh more than $\frac{1}{10}$ of an inch.

Var. a. Elytra and feet dark reddish-brown, the former with a very obvious pale spot at tip, somewhat similar to the *unistriatum* of Beauvois, but much smaller than he represents that insect to be.

3. S. *occallatum*. Black; elytra with a pale tip; feet piceous.

Body oval, black, polished, punctured: *palpi* piceous: *antennæ* blackish-piceous: *elytra* with very distinctly punctured, impressed striæ; a large dull yellowish spot at tip, rounded on its anterior termination, and extending further on the lateral margin than on the suture: *beneath* blackish: *feet* piceous.

Length much less than $\frac{1}{10}$ of an inch.

Found in putrescent animal substances at Senipuxten. It is about the size of *apicialis* nobis, which it much resembles, but it is distinguishable by its black colour, and firmer consistence.

Aphodius, *Illig. Fabr.*

A. *vittatus*. Black; clypeus trituberculate; elytra with a dull rufous vitta.

Scarabeus vittatus, Melsh Catal.

Head minutely punctured; three tubercles placed in a transverse line, the intermediate one largest, and the lateral ones elongated in a line to the eye; tip of the clypeus slightly and very obtusely emarginated: *thorax* with numerous small punctures: *elytra* with narrow punctured striæ; the interstitial spaces flat; a dull rufous vitta including the humerus at base,

extending somewhat obliquely towards the apex of the elytrum, and contracted in the middle: *feet* obscure rufous.

Length more than $\frac{3}{20}$ of an inch.

This insect is very like the *terminalis* nobis, but it may be distinguished by the vitta of the elytra, and the much less profoundly emarginated clypeus.

Trox, *Fabr.*

1. T. *striatulus*. Elytra with elevated acute lines, and intermediate regular grooves.

Trox striatulus, Melsh. Catal.

Head blackish-brown, with confluent punctures; tip widely emarginate: *thorax* blackish-brown, with dilated confluent punctures; a slightly impressed longitudinal groove; sides very much decurved: *elytra* light brown, with numerous profound grooves, which are separated by elevated acute lines.

Length $\frac{3}{20}$ of an inch.

The smallest species known to inhabit the United States, and so perfectly distinct in the striking character of its grooved elytra, as not to require any comparative observations.

2. T. *terrestris*. Elytra with raised obtuse lines, on which are round fascicles of short hairs.

Trox terrestris, Melsh. Catal.

Body blackish-brown: *head* with two small tubercles on the front: *thorax* with the dorsal groove very distinct, contracted and almost obliterated in its middle, so as to be nearly interrupted into two, on each

side of the posterior portion of it is another groove equally profound; posterior angles obliquely truncated: *elytra* with the fascicles of yellow hair, on the elevated lines, rounded and not oblong, equal; interstitial spaces with small tubercles.

Length nearly $\frac{1}{4}$ of an inch.

This insect is about equal in size to the *arenarius* Fabr., from which it differs in having no capillary lines in the interstitial spaces of the elytra. The *variolatus* of Melsh. Catal. if not altogether the same as the *arenarius* of Europe, is certainly most closely allied to it.

3. T. *porcatus*. Elytra with elevated interrupted lines and numerous transverse punctures on the interstitial spaces.

Trox porcatus, Melsh. Catal.

Body brownish-black: *head* somewhat inequal, with a more distinct frontal groove: *thorax* with short brownish hair; a deep and well defined longitudinal groove, sides inequal; lateral edge entire; posterior angles projecting: *elytra* with regular series of interrupted hairy lines, the series alternately smaller; interstitial spaces with dilated transverse impressed distinct punctures.

Length nearly $\frac{9}{10}$ of an inch.

A little larger than *canaliculatus* nobis, which it resembles, but it differs in having the transverse punctures of the elytra; *capillaris* nobis is smaller than the above-mentioned species, and may be distinguished from the present by the capillary lines of its elytra.

Scarabæus, *Latr.*

S. *relictus.* Head with an elevated transverse line, interrupted in the middle; clypeus at tip elevated and bidentate.

Body brownish-black: *head* with a transverse elevated line between the origin of the antennæ, interrupted in the middle, and most prominent near the interrupted part; tip of the clypeus with two reflected, acute denticulations: *thorax* with rather sparse punctures: *elytra* punctured, and with three double series of punctures, converging towards the apicial angle; the second and third double series do not reach the angle, a fourth double series is on the exterior submargin, but is not so distinct as the others: *beneath* piceous: *pectus* and *postpectus* hairy: *feet* above blackish: *venter* blackish.

Length more than $\frac{4}{5}$ of an inch.

It may be compared with the S. *punctatus* Fabr. of Southern Europe, but is of a more slender form, and is otherwise distinguished by the armature of the anterior termination of the head. I have found specimens in Pennsylvania. It varies in having the reflected tip of the head emarginate, and not deeply divided into two teeth. I have received a specimen from Dr. T. W. Harris, of Milton, Massachusetts.

Melolontha, *Fabr.*

1. M. *balia.* Chesnut-brown; head and thorax blackish-brown; the former and the inferior surface of the stethidium hairy.

Body cylindrical; *head* blackish, with small but dense and confluent punctures; *front*, below the vertex, and above the transverse impressed line, with a band of rather long dense ochreous hairs, terminating at the eyes; *clypeus* deeply and widely emarginated, the edge reflected, and beneath the edge is a fringe of recurved hairs: *thorax* rather prominent on the middle of the lateral edge; nearly as dark coloured as the head; punctures numerous, irregularly disposed: *scutel* with a few punctures, and with reflected prostrate yellow hairs at its base, partly covered by the base of the thorax: *elytra* confluently punctured, chesnut-brown: *stethidium* beneath, with dense pale yellow hair: *nails* with a prominent tooth on the middle, and an angle at base.

Var. a. Thorax rufo-castaneous.

Length more than $\frac{13}{20}$ of an inch.

This common species was sent to me by Dr. J. F. Melsheimer, under the name which I have adopted. The following are his remarks: "it differs from M *quercina* in being more cylindrical, from M. *quercus*, in the absence of the "rore cœrulescenti," &c. and from M. *hirticula*, in the want of the triple series of fuscous erect hair on each elytrum. In its proper season this insect may be found in vast numbers under the deciduous leaves of forests; during the night the millions of wings that fan the air, produce a loud humming sound, not unlike that emitted by the enraged occupants of a humble-bee's nest."

It is much smaller than the *quercina*, smaller than the *hirticula*, and larger than *quercus*.

2. M. *ephilida*. Ochraceous; thorax somewhat rufous; head blackish; clypeus nearly entire.

Head blackish, with sometimes an obscure chesnut disk; very densely and confluently punctured; punctures small: *clypeus*, anterior termination widely, but slightly truncated, not at all emarginated, the edge reflected: *thorax* pale rufo-castaneous, polished; punctures irregularly scattered; middle of the lateral edge rather prominent: *scutel* with a very few punctures, and with reflected prostrate hairs at its base, partly covered by the base of the thorax: *elytra* pale ochraceous, densely punctured: *stethidium* beneath, with pale yellow, dense hair: *nails* with a strong prominent tooth on the middle.

Var. a. Scutel entirely destitute of punctures.

Length $\frac{3}{5}$ of an inch.

This species closely resembles the preceding, but it has a more robust form, it is somewhat shorter, destitute of the frontal band of hair, and is of a paler colour. I adopt the name given to it by Dr. J. F. Melsheimer, who remarked in a letter to me, that "it approaches nearest to a MELOLONTHA described by Professor Knoch under the name of *angularis*, but as the thoracic angles of that insect are covered with a substance resembling Mother of Pearl, or, as the Professor expresses it, "einer farbe die völlig mit der kalkerde überein kömt; welche von den Mineralogen Schaumerde genannt wird," we cannot connect with propriety, our insect with the M. *angularis*." In colour it closely resembles the *longitarsa* nobis (in Long's second expedition) but that

insect is somewhat smaller, with an emarginate clypeus and much longer tarsi.

3. M. *moesta*. Elytra punctured, and with two double series of punctures; clypeus slightly emarginated.

Melolontha moesta, Knoch in Melsh. Catal.

Head with very dense profound punctures; transverse line between the eyes rather deeply indented: *clypeus* with the margin recurved, the tip very obtusely, but not very profoundly emarginated: *thorax* with scattered profound punctures; lateral edge obtusely projecting a little, rather behind its middle: *elytra* with numerous punctures, and with two regular double series of punctures on the disk, one or two on the exterior submargin, and a single subsutural series: *beneath* glabrous: *nails* with a robust prominent obliquely truncated tooth beyond the middle.

Length about ⅛ an inch.

The colour of young specimens is rather pale chesnut, but, as is the fact with respect to many species, as they grow older, the colour becomes darker, and it is not uncommon to find individuals that are almost black.

4. M. *sordida*. Covered with short dense hair.

Melolontha sordida, Melsh. Catal.

Superior surface entirely covered by short close set hairs, which are longest on the head, thorax, and base of the elytra; the punctures are also dense and confluent: *clypeus* with the edge reflected; tip widely emarginated: *thorax*, lateral edge reflected, and

a little dilated rather behind the middle: *elytra* having the subsutural line obliterated: *beneath* nearly glabrous: *nails* with an obliquely truncated, very robust tooth beyond the middle.

Length about $\frac{2}{5}$ of an inch.

The colour varies considerably. I have a specimen that is of a pale chesnut colour, and others that are dark dull brown. I have found this species in May; and at Chinquoteage Island, many individuals occurred under yellow-pine trees in company with the preceding species in October. It is very well distinguished from other species by its equally distributed hairy covering.

5. M. *frondicola.* Elytra punctured, and with two double series of punctures; clypeus entire.

Melolontha frondicola, Knoch, Melsh. Catal.

Body pale chesnut: *head* dusky, with large confluent punctures; transverse line angulated in the middle; *clypeus* very obtusely rounded at tip, almost truncated, the edge reflected: *thorax* with rather large, very numerous punctures, more dense and confluent on the sides; lateral edge a little obtusely dilated at the middle: *elytra* with numerous punctures, and with two double striæ of punctures on the disk, one or two on the exterior submargin, and a single subsutural one: *beneath* glabrous: *nails* with a remarkably robust broad compressed truncated tooth.

Length $\frac{3}{10}$ of an inch.

Although this species is very similar in some respects to the *moesta,* yet it is so much smaller as to

be readily distinguished; the clypeus also of that species is emarginated, and the punctured series are much more regular than those of the present species, in which the punctures of the series are often confluent with the punctures of the interstitial lines. As regards size, it is but little smaller than *vespertina*, which has numerous indented striæ on the elytra.

6. M. *unifasciata*. Thorax very dark green; elytra testaceous, with a black abbreviated band or spot on the middle.

Head densely punctured, particularly before, very dark greenish on the vertex, and tinged with cupreous before: *clypeus* entire at tip, the edge reflected: *thorax* blackish-green, rather sparsely punctured, punctures small, lateral edge a little dilated rather before the middle: *scutel* dark green, sometimes tinged with cupreous, with a few punctures: *elytra* pale testaceous, in a particular light having a slight metallic tinge, each with seven or eight regular striæ of punctures, and a few scattered ones near the suture; margin and suture dusky; on the middle is a blackish band, which is more or less interrupted and undulated: *beneath* black, slightly tinged with green and cupreous: *stethidium* a little hairy: *acetabulum* with an indented longitudinal line: *nails*, of the anterior and intermediate feet, having one nail simple, and the other bifid at tip, of the posterior feet simple.

Length $\frac{2}{7}$ of an inch.

Var. a. Elytra, excepting at base, black.

This species is very closely allied to *varians* Fabr., but it may be distinguished by its much larger size.

The *varians* is not uncommon in Pennsylvania, but the present is a Southern species. Dr. J. F. Melsheimer gave it the name of *vernalis*, which is preoccupied in this genus; he informed me that it "was captured in Virginia, in the early part of the year 1807. Male and female were flying about in a ploughed field, in innumerable multitudes."

Judging from its habit, it belongs to Megerle's genus ANOMALA.

HOPLIA, *Illig.*

H. *trifasiata*. *Head* black: *clypeus* at tip reflected: *thorax* densely covered with reddish-yellow scales: *feet* brownish-red: *scutel* blackish: *elytra* light brownish-red, with sparse yellowish scales, which, however, are more dense in some parts, so as to form three bands, which are tolerably distinct; of these, one is at the base, the other on the middle, and the third near the tip; they are somewhat undulated: *anal segment* and *beneath* densely covered with pale cinereous scales, which have in some parts, a cupreous reflection. The opposite sex is black on those parts, which in the other are brownish-red, and the bands of the elytra are hardly discernible: in both sexes the humerus is prominent, and at the decurvature of the elytra near the tip, they are elevated almost into an angle.

Length nearly $\frac{1}{3}$ of an inch.

The great difference in colour between the two sexes of this species, may readily deceive naturalists into the belief that they are two distinct species.

Cetonia, *Fabr.*

C. *vestita.* Hairy; clypeus emarginate; elytra with a few white spots.

Body brownish-black, with very numerous, rather long, reflected, cinereous hairs: *head* with the hairs smaller and sparse before; *clypeus* widely emarginate at tip, the lateral angles subacute and a little elevated; lateral margin not recurved: *thorax* with a carinated glabrous line, little elevated but very distinct: *elytra* with two hardly obvious elevated lines on the middle, confluent behind; striæ slightly impressed, with small punctures; on each elytrum is a small white dot on the middle of the sutural submargin, another behind the middle and approaching nearer to the suture, three oblique ones on the exterior submargin, and a transverse one at tip near the suture.

Length $\frac{2}{3}$ of an inch.

This species resembles the *sepulcralis* Fabr., but it differs in having the clypeus emarginated, the hairs of the body elongated, and the spots of the elytra fewer in number. In form, it is more slender than that well known species, and its colour is more opaque and less metallic. It is much more closely allied to the C. *hirta*, Fabr. of Europe, the spots being nearly similar; but the *vestita* is one half smaller, and the hair is much coarser and much less abundant; can it be a variety of that species.

I have met with but two specimens, one belonging to the Philadelphia Museum, and the other sent to me by Dr. T. W. Harris, of Milton, Massachusetts.

Lucanus, *Linn. Latr.*

1. L. *placidus.* Head small, slightly concave; tooth of the mandibles emarginate.

Body dark reddish-brown: *head* slightly concave, rather narrower than the thorax; *mandibles* hardly as long as the head, regularly curved; tooth a little beyond the middle, not very prominent, but rather wide and emarginate at tip: *elytra* without striæ: *anterior tibiæ* about four toothed, superior tooth small.

Length one inch.

I found this species when with Major Long's party in Arkansa. It differs from the *dama* Fabr. in being smaller, in having the head narrower than the thorax, the mandibles shorter and less arcuated, and their tooth wide and bifid at its tip.

2. L. *brevis.* Short and wide; mandibles one-toothed; elytra smooth, humerus mucronate.

Body robust, reddish-brown: *head* wide, rather narrower than the thorax, minutely punctured, a little concave above the mandibles; *mandibles* short, with one simple oblique tooth on the middle, extending inwards and forwards: *thorax* wide, with minute punctures, angles rounded; posterior ones not obliquely truncated: *elytra* nearly smooth, having numerous small punctures, and obsolete, hardly impressed lines; *humerus* mucronate: *anterior tibiæ* with five or six small denticulations, and a broad terminal, prominent one widely emarginate; *intermediate tibiæ* with a single spine on the middle.

Length nearly $\frac{9}{10}$ of an inch.

This species seems to be related to *parallelus* nobis, but it is much wider in proportion to its length, and there are no distinct striæ on the elytra.

Tenebrio, *Fabr. Latr.*

1. T. *reflexus.* Blackish-green; edge of the clypeus reflected; thorax subquadrate.

Tenebrio æruginosus, Melsh. Catal.

Body very dark green, almost black: *head* minutely and densely punctured, anterior edge of the clypeus regularly arcuated and reflected; *antennæ* black; *palpi* blackish piceous; *thorax* rather transversely quadrate, minutely and densely punctured; angles subacute: *elytra* with impressed, punctured striæ; interstitial lines depressed, almost flattened, obsoletely punctured: *tibiæ*, anterior pair of the male with a prominent angle above the middle, and with the second pair much arcuated on the inner side.

Length $\frac{3}{4}$ of an inch.

The specific name *æruginosus* is preoccupied.

2. T. *rufipes.* Black, polished; terminal joint of the antennæ pale fulvous; thighs bright rufous.

Tenebrio rufipes, Melsh. Catal.

Body oblong, black, polished: *antennæ* black, two basal joints piceous, terminal joint, except at its base, fulvous: *thorax* rather narrower than the elytra, and with the head densely and minutely punctured: *elytra* with impressed, punctured striæ, and convex interstitial lines: *thighs* bright rufous; *tibiæ*, anterior

pair of the male with a short spine on the inner middle.

Length $\frac{1}{2}$ an inch.

I have stated this insect to be polished, in order to distinguish it from the UPIS *fulvipes* Herbst, which it very much resembles, and with which it is strictly congeneric.

JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA

HALL OF THE ACADEMY

JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

VOL. V....PART II.

PHILADELPHIA:
PRINTED FOR THE SOCIETY,
BY JESPER HARDING.

1827

CONTENTS

OF

VOLUME V....PART II.

JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

LIST OF OFFICERS FOR THE YEAR 1827.

President.

William Maclure.

Vice Presidents.

Zaccheus Collins, George Ord.

Corresponding Secretary.

Reuben Haines.

Recording Secretary.

S. G. Morton, M. D.

Curators.

J. P. Wetherill, Isaac Hays, M. D., T. R. Peale, John Vaughan.

Treasurer.

George W. Carpenter.

Librarian.

S. W. Conrad.

Auditors.

J. Dobson, S. V. Merrick, W. M. Walmsly.

Committee of Publication.

S. G. Morton, M. D.
J. P. Wetherill.
W. Wetherill, M. D.
J. P. Smith.
R. Harlan, M. D.

Note.—The labours of the late Committee of Publication were discontinued after the first 22 pages of this half volume.

JOURNAL

OF THE

ACADEMY OF NATURAL SCIENCES

OF

PHILADELPHIA.

LIST OF OFFICERS FOR THE YEAR 1826.

President.

William Maclure.

Vice Presidents.

Zaccheus Collins, George Ord.

Corresponding Secretary.

Reuben Haines.

Recording Secretary.

S. G. Morton, M. D.

Curators.

T. Say, Isaac Hays, M. D., T. R. Peale,
John Vaughan.

Treasurer.

Jacob Gilliams.

Librarian.

Jacob Pearce.

Auditors.

J. Dobson, S. G. Morton, M. D. Geo. W. Carpenter.

Committee of Publication.

S. G. Morton, M. D.
J. P. Wetherill.
W. Wetherill, M. D.
J. P. Smith.
R. Harlan, M. D.

Note.—The labours of the late Committee of Publication were discontinued after the first 22 pages of this half volume.

Descriptions of Marine Shells recently discovered on the Coast of the United States. *By* THOMAS SAY. *Read October* 18, 1825.

DELPHINULA, *Lam.*

D.? *laxa.* Whorls all separate.

Inhabits the Coast of South Carolina.

Shell subovate, nearly glabrous, whitish, slightly tinged with dull yellowish: *whorls* rounded, perfectly disjoined throughout, rapidly attenuated to the apex; a dilated, rugous, shallow groove on the line of the umbilicus: *aperture* oval-orbicular, with an acute edge.

Greatest breadth about $\frac{9}{10}$ of an inch.

This very remarkable shell was sent to me for examination by Mr. Elliott, who has found but a single specimen; it must therefore be considered very rare.

On a first view I was inclined to refer it to the genus VERMETUS, in consequence of the separated nature of its volutions, and the broken apex of the spire, but a more careful examination exhibited the broad rugous groove, analogous to that in the umbilicus of many shells, and seemed to show its more close alliance with the present genus.

Can this be a monstrosity of a NATICA as the CORNU of Born is said to be a malformation of HELIX *aspersa*, Mull.?

TURRITELLA, *Lam.*

1. T. *concava.* *Shell* subulate, white; *volutions*

more than ten, concave in the middle, and sculptured with from two to four obsolete, impressed revolving lines, and with an apicial and basal band of about fifteen longitudinal undulations on each volution; the basal band passes round the middle of the body whorl: *suture* very slightly impressed, interrupting the continuity of the undulations in the adjacent bands: *canal* rather prominent.

Length $\frac{11}{20}$ of an inch; greatest breadth less than $\frac{1}{4}$ of the length.

For this species I am indebted to Mr. Stephen Elliott of Charleston.

2. T. *æqualis*. *Shell* subulate, white; *volutions* ten, each with about twenty-two transverse, elevated, obtuse, equal lines, with interstitial grooves of the same diameter; *suture* distinct, impressed; *aperture* rounded at base, and destitute of any distinct emargination.

Length $\frac{1}{13}$ of an inch.

Scalaria, *Lam.*

S. *multistriata*. *Shell* tapering to an acute apex; white: *whorls* eight: *costa* regular, equidistant, moderately elevated; altogether wanting on the three terminal whorls: *interstitial spaces* with very numerous, approximate, impressed lines: *aperture* oval.

Length about $\frac{1}{2}$ an inch.

Inhabits the Southern Coast.

I obtained two specimens of this shell on the Coast of East Florida, and I am indebted to Mr. Stephen

Elliott for a much better specimen than either of them, from the Coast of South Carolina. It is readily distinguished from the two other species which inhabit our shores, the *clathrus* of authors, and the *lineata*, nobis, by the numerous small indented lines that occur in the spaces between the costæ, and at right angles with them.

Infundibulum, *Montf.*

I. *depressum*. *Shell* depressed, fragile, with small concentric irregular wrinkles; *volutions* three; *suture* not profoundly indented; *apex* not central; *base* oval, almost orbicular; *umbilicus* oblong; *internal plate* small.

Greatest diameter of the base rather more than $\frac{1}{5}$ of an inch.

This highly interesting shell was found by Mr. Stephen Elliott, on the Coast of South Carolina. Amongst a number of curious shells, natives of New Holland, Timor, and the Isle of France, presented to the Academy by Mr. Lesueur, a species of this genus occurs, which is somewhat similar to ours, but it is much larger; its greatest basal diameter being $\frac{3}{4}$ of an inch in length, its suture is more profoundly indented, and its surface wrinkled with much regularity.

Natica, *Lam.*

N. *triseriata*. *Shell* longitudinally suboval, approaching subglobular; *volutions* five; *body whorl* with three revolving series of large oblique, parallel,

oblong-quadrate, dark reddish-brown or blackish spots, about twelve in each series; *umbilicus* rounded, not contracted by the callus; *suture* not impressed; *spire* with but one series of spots on each volution.

Length $\frac{2}{5}$, width $\frac{11}{20}$ of an inch.

Inhabits the Northern Coast. Boston harbour.

This shell may be compared to the N. *intricata* of Donovan, which is comprehended by Dillwyn amongst the varieties of N. *canrena*. It certainly appears to be closely allied to that very common species of the British Coast in its configuration, excepting that it is perhaps somewhat more elongated, and that the shoulders of the whorls are much less convex, and the suture, consequently, less deeply impressed. In a very perfect specimen, presented to the Academy by the vice-president, Mr. Zaccheus Collins, the two lower series of spots are jointly included by a pale yellowish-brown band; beneath this band the base of the shell is pure white; the shell is also white above this band, excepting that the spots of the superior series are connected by a pale yellowish-brown colour. This species like the *canrena*, seems subject to many varieties. On two specimens for which I am indebted to Mr. Stone, the pale yellowish-brown colour is covered by a cinereous tinge, and on one of them the two lower series of spots towards the labrum are confluent at their inner extremities into one series; in another specimen the spots of each series are so confluent with each other on the back of the shell and towards the labrum as to represent three continuous bands.

I have not yet found this species so far south as Great Egg Harbour.

From the examination of some specimens of Naticæ from the same Coast, presented by Mr. Collins, I am inclined to think that this species grows to a considerable size, and attains the length of $2\frac{2}{5}$ inches, that it then loses its spotted bands, but always retains the whiteness about the umbilicus, and this latter part as well as the callus, and indeed the whole outline of the shell remains unaltered.

Volvaria, *Lam.*

V. *canaliculata.* *Shell* whitish, immaculate, cylindric, with very minute obsolete wrinkles; *spire* convex, very little elevated, mammilated at tip; *volutions* about five, with their shoulder very obtusely grooved; *labrum* with the edge arcuated; *labium* overspread with a calcareous lamina, and with a single oblique fold or small tooth near the base.

Length from $\frac{3}{20}$ to nearly $\frac{1}{5}$ of an inch.

I received specimens of this singular shell from Mr. Elliott of South Carolina, who obtained it on the Coast of that state. The arcuated form of the edge of the labrum is only perceived when the part is viewed in profile.

Nassa, *Lam.*

1. N. *unicincta.* *Shell* yellowish-white or cinereous, subovate-conical: *whorls* with numerous revolving lines and transverse undulations, the former about

eleven or twelve in number, with often a smaller obsolete one in the intervening spaces; undulations about ten to the body whorl, placed at the distance of the length of their own diameters apart, and somewhat closer on the spire; *whorls* eight; *apex* acute; *body whorl* with a brown band, sometimes obsolete, interrupted by the undulations, and consisting of about two spots in each of the intervening spaces: *labrum* within with ten parallel striæ, which revolve on the inner surface of the shell; *labium* in the middle concave, with about two obsolete striæ, and a more profound one at base.

Length $\frac{17}{20}$, breadth nearly $\frac{9}{20}$ of an inch.

Inhabits the Coast of South Carolina.

In the collection of the Academy is a shell from the West Indies, to which our species is very closely allied; and although the striæ of the labrum are double in the former, yet it is probable that the two shells will be found to constitute one species, when more specimens are examined and carefully compared. In the systems it will probably arrange near to N. *vulgatum*.

For this shell I am indebted to Mr. Stephen Elliott of Charleston.

2. N. *alba*. *Shell* ovate, white, immaculate, longitudinally ribbed or undulated, and with spiral striæ; ribs equal, equidistant, symmetrical, from ten to eighteen on the body whorl; striæ equal, equidistant, filiform, elevated as distinctly upon the ribs as in their interstices, and from seventeen to twenty in number on the body whorl: *whorls* seven, convex: *suture*

deeply indented; *aperture* suborbicular; *labrum* with a larger rib than the others on the exterior, and striate within; *labium*, plate distinct, entire, but not expanded, with an indented line near the base, and a prominent one near the junction with the labrum.

Length $\frac{9}{20}$, breadth $\frac{3}{10}$ of an inch.

Inhabits the Southern Coast of East Florida, and the West India Islands.

I owe this beautifully sculptured shell to the politeness of Mr. Elliott. It seems to be more closely allied to N. *macula* of authors than to any other with which I am acquainted. It is, however, distinguished as a species by its more ventricose form, by its ribs being more rectilinear, and by the spiral striæ being more prominent and distinct. Those found on the Coast of Florida are in no respect different from specimens brought from the West India Islands.

3. N. *lunata*. *Shell* reddish-brown, with about six volutions; *whorls* with two revolving lines of dilated, sublunate, whitish spots, and sometimes a third one at base; *suture* not deeply impressed; *labrum* dentate on the inner submargin, the superior teeth more prominent; *labium* with the plate not thickened.

Var. a. Shell white, with two revolving reddish-brown dilated lines.

Length $\frac{3}{20}$ of an inch.

Inhabits the Coast of the Southern States.

Cabinet of the Academy, and Philadelphia Museum.

Animal pale, whitish; *foot* linear, nearly as long as the shell, acute behind, hardly larger than the respiratory trunk, truncate before: *trunk* more than

half as long as the shell, obtuse at tip, with a brown annulation near the tip, and another near the base; *tentacula* short, cylindrical, annulate with blackish, on the middle; *eyes* black, placed on the base of the tentacula.

Found adhering under stones, fuci, &c. in the bays; numerous. It varies in colour and in markings; the white sometimes predominates, and reduces the reddish-brown to one or two linear, transverse, undulated lines. A variety occurs on the Coast of Maryland, which is white, with two or three reddish-brown, irregular, revolving lines.

Fusus, *Lam.*

1. F. 10-*costatus*. *Shell* somewhat ventricose, very short fusiform; the beak being much shorter than the spire; with six or seven volutions, which are each obliquely flattened above the shoulder, and spirally ribbed; these costæ are elevated, semicylindric, and with the exception of the two superior ones, equidistant; sutural costa remote from that of the shoulder; interstitial spaces with small lines parallel to the costæ; the latter are ten in number on the body whorl, three on the second whorl, three on the third, and obsolete on the fourth.

Length $3\frac{3}{10}$ inches.

Greatest width $1\frac{9}{10}$ inches.

Length of the spire $1\frac{2}{5}$ inches.

This interesting species was presented to me by Mr. Zaccheus Collins, who obtained it from the Coast near Boston. The summit of the spire, of two spe-

cimens before me, is partially removed, exhibiting in the interior, a close arrangement of very numerous septæ, formed by the animal at different times, as it increased in size, and gradually abandoned the apex. It approaches very closely in character to the genus BUCCINUM.

2. F. *bicolor*. *Shell* short fusiform; the beak subequal to the length of the spire: *volutions* five, convex, with abrupt, prominent, regular, equidistant undulations, which, on the body whorl, are thirteen or fourteen in number, extending from the suture about half the distance to the tip of the beak, and near the suture exhibiting a tendency to rise into arched scales: the whole surface of this shell is sculptured with small revolving grooves, to the number of from twenty-five to thirty on the body whorl; inferior moiety of the body whorl tinged with rufous: *suture* profoundly impressed: *aperture* gradually diminishing to the beak: *striæ* of the labrum within distinct, sometimes obsolete or wanting.

Length $\frac{9}{10}$; greatest breadth more than $\frac{1}{4}$ of an inch.

Inhabits the southern Coast of East Florida.

The aperture is not suddenly contracted at the origin of the beak channel, as in many species, but is gradually diminished in width, much like Montfort's figure of LATIRUS *filosus*.

For this shell I am indebted to Mr. Elliott.

PATELLA, Lam.

P. *alternata*. *Shell* conical, with upwards of

thirty obsolete, hardly raised, unequal ribs; *apex* obliquely curved, the tip pointing nearly in a parallel direction with the surface of the shell, and acute; *colour* brown, radiated with white: *base* oval.

Basal length $\frac{3}{10}$ of an inch.

Inhabits the southern Coast of East Florida.

Communicated by Mr. Elliott. It seems to approach the *leucopleura*, as described by authors, excepting that the base is not ovate, as the base of that shell is said to be.

Calyptræa.

C. *striata*. *Shell* oval, prominently convex, with numerous, slightly elevated, equal, equidistant radiating lines: *summit* glabrous, wax-yellow, subacute, inclining towards the left side and the posterior end: *inner valve* pateliform, dilated, attached by one side to the shorter side of the shell; acutely angulated at the anterior line of junction, and rounded behind, and rapidly attenuated to an acute tip, which nearly corresponds with the inner apex of the shell.

Length less than $\frac{9}{10}$ of an inch.

This species belongs to my indicated genus Dispotæa. I am indebted for it to Mr. John S. Phillips, who obtained two specimens on the Coast of New Jersey, about three miles north of Long Branch.

Venericardia, *Lam.*

V. *tridentata*. *Shell* suborbicular, subequilateral, thick and ponderous, with about eighteen convex lon-

gitudinal ribs, cancellate by concentric elevated lines, which do not penetrate into the interstitial narrow spaces, and which are obsolete on the umbo, and on the anterior side: *inner margin* deeply crenate: *hinge* with two diverging teeth, separated by a large cavity on one valve, and on the other, a single large triangular prominent recurved tooth, closing into the cavity.

Length $\frac{1}{4}$ of an inch, breadth rather more.

This curious shell was discovered by Mr. Stephen Elliott, on the Coast of South Carolina. Its characters do not at all correspond with those of VENERICARDIA, as defined by Lamarck in his last work, the *Animaux sans vertèbres*, where he attributes to the genus "two oblique cardinal teeth directed to the same side." In the Ann. du Mus. Vol. 7, page 55, he admits, however, that "in certain species, which ought, perhaps, to be separated from the *Venericardes*, there is on one valve, but a single cardinal tooth, and upon the opposite valve, two divergent cardinal teeth." These characters, I conceive, correspond with the shell above described, and although, should they be tolerated, an artificial assemblage will be the result, yet for the present, I refer this shell to the genus VENERICARDIA, under this authority of Lamarck.

This species will be regarded as an interesting addition to the Fauna of the present world. The first recent species was described by Lamarck as a native of New Holland. All other known species are found only in the fossil state.

Tellina.

1. T. *intastriata.* *Shell* subovate, angulated at the anterior base, transversely wrinkled, and within slightly striated longitudinally.

Coast of East Florida.

Shell white, immaculate, ventricose; wrinkles distinct, and with obsolete, longitudinal striæ: posterior slope near the hinge parallel to the base; posterior end obtusely rounded; anterior hinge slope rectilinear, oblique: anterior end rounded; fold rather profound, extending from the beak to the junction of the base, with the anterior end: *base* viewed from the disk of the right valve subrectilinear, but very much arcuated with the concavity of the shell: hinge teeth small, lateral teeth none: within longitudinally obsoletely striated: *beak* rather before the central.

Length $1\frac{3}{5}$ inches nearly; breadth $2\frac{1}{10}$ inches nearly.

This shell was handed me for examination by Professor Green, in whose cabinet the specimen is preserved: a right valve is in the collection of Mr. Hyde: In general outline, it resembles fig. 3, pl. 287 of Encycl. Meth.

2. F. *lateralis.* *Shell* transversely subovate: *beak* nearly central: *posterior* margin regularly rounded: *anterior* margin rostrated, the rostrum turned to the left, and slightly gaping: *ligament slope* rectilinear: *basal margin* regularly arcuated, a little contracted near the rostrum: *valves* whitish, often tinged with ferruginous, with small concentric wrinkles and slight waves; *within* white, a little sculptured with the ex-

ternal waves: *lateral teeth* none: *cardinal teeth* two on one valve, and one with another hardly elevated filiform one on the other.

Inhabits the Coast of the United States.

Length $1\frac{11}{20}$ inches; width $2\frac{3}{20}$ inches.

This species is more commonly found upon the Southern Coast, where it is abundant, but perfect specimens are very rare.

3. T. *decora*. *Shell* transversely subovate, rosaceous, or white, with rosaceous radii; not much compressed; numerous minute concentric wrinkles, and regular, oblique, equidistant lines crossing them: *anterior margin* destitute of the oblique lines: *posterior lateral tooth* of the left valve prominent, the others obsolete: *apex* a little before the middle.

Length more than $\frac{1}{2}$ an inch; breadth $\frac{17}{20}$ of an inch.

The largest specimen, brought by Mr. T. Peale from the southern Coast of East Florida, is one inch in breadth.

In the character of the oblique striæ this species is allied to T. *iris* nobis, but it is amply distinguished by its much greater size, less compressed form, oblique striæ, by its colour, &c.

Psammobia, *Lam.*

P. *fusca*. *Shell* compressed, transversely subovate, thin and fragile; wrinkled concentrically, and covered with a fuscous or yellowish-brown epidermis: *apex* not prominent, central: *anterior margin* more narrowed than the posterior one, with a slight and

obtuse wave passing along the anterior submargin: *posterior margin* very obtusely rounded: *within* white: *teeth* diverging remotely, very slender, filiform, and hardly elevated.

Var. a. Epidermis whitish, slightly tinged with yellowish.

Length $1\frac{1}{20}$ inches; breadth $1\frac{7}{20}$ inches.

Inhabits the estuaries of Georgia.

Cabinet of the Academy and Philadelphia Museum.

Several specimens of dead shells were brought up from the bottom of the Sound, near Jeykill island, by the fluke of our anchor.

Amphidesma, *Lam.*

1. A. *radiata*. *Shell* transversely oval, orbicular, a little compressed: *apex* nearly central, a little prominent: *posterior slope* somewhat concave near the beak: *anterior slope* rectilinear to the middle: *disk* somewhat regularly wrinkled transversely, and with minute longitudinal striæ, white, with more or less rosaceous radii, which are sometimes obsolete: *anterior submargin*, with a slight very obtuse undulation: *cardinal teeth* two in each valve, elevated, slender, unequal: *lateral teeth* very distinct: the posterior one nearer the primary teeth, and shorter than the anterior one: *interior ligament cavity* profound, fusiform, nearly parallel to the anterior slope: *within* tinged with yellow, and the rosaceous radii are distinct.

Length $\frac{9}{10}$; breadth rather more than 1 inch.

Many specimens of this pretty species were brought

from the southern shores of East Florida, by Mr. Titian Peale, and I obtained a worn individual a few years since, on the coast of Georgia, measuring one inch and two fifths in breadth.

It resembles the species I formerly described under the name of A. *orbiculata*, but it is wider in proportion to the length, &c.

2. A. *lepida*. *Shell* very much compressed, subtriangular, remarkably thin, pellucid, equilateral, somewhat iridescent, with numerous concentric wrinkles, and equally numerous very minute, regular, longitudinal striæ, which, on the anterior margin, curve towards the anterior edge, and on the posterior margin, curve in the same manner towards the posterior edge: *cardinal teeth* obsolete: *lateral teeth* prominent.

Length rather more than $\frac{1}{7}$ of an inch; breadth less than $\frac{1}{4}$ of an inch.

This shell was sent to me by Mr. Elliott, who found it on the coast of South Carolina.

Note on a supposed new species of Scincus *published in the preceding number of this Journal. By* R. Harlan, M. D. *Read January* 3, 1826.

I was not aware, until after the publication of my description of the Scincus *unicolor*, that any species of this genus had been noticed in *Long's Expedition to the Rocky Mountains*, it having been omitted in the general Index. I have since been convinced, however, that the new animal, described in Vol. 2nd, p. 190, of that work, under the name of Scincus *lateralis*, is identical with the S. *unicolor*.

On the distinction of two species of ICTERUS, *hitherto confounded under the specific name of* ICTEROCEPHALUS. *By* CHARLES BONAPARTE. *Read February* 28, 1826.

Though almost convinced that the Yellow-headed Troopial, brought by Major Long's expedition, was not the species to which that name had been applied by authors, yet in conformity to my principles, never to establish a new species, whenever it could be referred to an old one with any degree of propriety, I did not think myself authorized to give it as new in the first volume of my American Ornithology, especially as Say had called it by the above name in the list of animals observed by the expedition. I limited myself, therefore, to giving an exposition of the reasons for and against identity; and it will be seen by referring to my American Ornithology, p. 27, that the principal reasons (which I then called deceptive) for considering my bird as distinct from the I. *icterocephalus*, were 1st, that mention had not been made by authors of the conspicuous spot on the wing: 2nd, the difference of size: 3d, that my bird belonged to a different group from the one to which the I. *icterocephalus* had been referred by late writers. But I explained these differences, by attributing the first to the common negligence of early describers; the admeasurement having been taken from dried skins, could account for the second; as for the third, we had only Vieillot's authority, who might never have seen

the bird he thus classified. But we must confess, that the principal reason which prevented us from considering the trans-Missouri bird as a nondescript, was the actual comparison of it with a specimen from South America, with which it proved to be identical. The more natural conclusion of the species having been incompletely described, was therefore adopted, in preference to the improbable one that two species were found in South America, of which the undescribed one should happen to be our species. Having since, however, observed specimens of the real ICTERUS *icterocephalus*, we beg leave to introduce the other under a new name, and will try to put them under such a point of view, as will prevent their being mistaken in future.

Subgenus *Xanthornus*.

1. Yellow-headed Troopial. ICTERUS *xanthocephalus*, nob.

Niger; capite, collo, pectoreque aurantiacis; alarum macula alba.

Male black; head, neck and breast orange; a white spot on the wing. Length 10½ inches.

Female and Young dark brown; wings immaculate; throat whitish; a rounded yellow patch on the breast. Length 8¼ inches.

SYNONYMES.

Yellow-headed Troopial, ICTERUS *icterocephalus*, nob. Am. Orn. 1. p. 27. pl. 3. fig. 1. male, fig. 2. female.

Yellow-headed Oriole, ORIOLUS *icterocephalus*, Say in Long's expedition, but not the I. *icterocephalus* of authors.

Probably the larger of Buffon's *Coiffes jaunes*.

Inhabits the western parts of North America; found also in South America.

For a detailed description and history, see the above quoted work.

Subgenus *Icterus*.

2. Yellow-headed Troopial. ICTERUS *icterocephalus*, Daud.

Niger; capite colloque luteis; alarum macula nulla.

Male black; head and neck yellow; no white on the wing. Length 7¼ inches.

Female and Young unknown.

SYNONYMES.

ORIOLUS *icterocephalus*, LINN. GMEL. LATH. nec Say in Long's expedition.

ICTERUS *xanthornus icterocephalus cayennensis*, BRISS.

ICTERUS *icterocephalus*, DAUD. nec nob. Am. Orn.

PENDULINUS *icterocephalus*, VIEILL.

Cornix atra; capite, collo pectoreque flavis, KOELREUTER, Nov. Comm. Petr.

Les Coiffes jaunes, (probably the smaller only) BUFF. Ois.

Carouge de Cayenne, BUFF. pl. enl. 343.

Yellow-headed Starling, EDWARDS, Glean.

Yellow-headed Oriole, LATH. Syn.

Inhabits Cayenne.

Description. Bill formed exactly like that of I.

baltimore. Whole head, sides, and inferior part of the neck, down to the breast, rich uniform yellow, rounded on the breast, and well defined; feathers round the base of the bill, and space between the bill and eye, black, not extending beyond it: *back of the neck* and all remaining parts of a deep, uniform, glossy black. Tail slightly rounded, $2\frac{1}{2}$ inches long.

From the above it will be seen that these species, besides that they are subgenerically distinct, may be readily recognised by their very different size; our new species being more than three inches longer, and proportionally stouter; by the yellow colour being more extended, brighter, orange, and of different shades in the I. *xanthocephalus*, whilst it is uniform in the I. *icterocephalus;* by the black colour being tinged with brownish, and with some feathers yellow at base, whereas it is pure and uniform in the old species; and finally, by that most striking character of the white spot on the wing of the new species.

On the species of the Linnæan genus ECHINUS, *inhabiting the coast of the United States. By* THOMAS SAY. *Read November* 8, 1825.

ECHINUS, *Linn. Lam.*

1. E. *granularis*, Lam.?

Several specimens of a species which agrees with Lamarck's description, were sent me by Mr. D. H.

Storer from near Cape Elizabeth, coast of Maine. He found them in plenty under rocks. At first view, I referred them to E. *esculentus*, Linn.; but on comparison with that species, I find it to be more depressed, and much more thickly studded with small elevations; thus agreeing with the reputed characters of the present species. It is also allied to E. *neglectus*, Lam. The spines are green. A few ECHINI found by Mr. N. M. Hentz on the coast near Charleston, may prove to be a variety; the spines are more robust, and are white.

2. E. *lucunter*. Linn. Found by Mr. T. Peale, on the Florida Keys.

3. E. *variegatus*, Leske.

Mr. Peale obtained two specimens on the Florida Keys. I would add to Lamarck's description, that the pores in the series are placed alternately two and four; and that the figures around the space of the mouth, are narrow and rather deep.

CIDARETES, *Lam.*

C. *diadema*, Linn. Found by Mr. T. Peale, on the Florida Keys. Encycl. Meth. pl. 133, fig. 10: and a portion of a spine is represented at C, and magnified at D.

SCUTELLA, *Lam.*

1-S. *pentaphora*, Gmel.

Lamarck was unacquainted with the native country of this species, and he seemed inclined to consider it

only a variety of the *hexaporus* Gmel. of the West Indies.

It is common on our coast, where it is almost every where found, and in many parts abundantly. Amongst many thousands that I have seen, not one specimen of the *hexaporus* occurred; and this latter has not yet been found on any part of our coast.

2. S. *trifaria.* Orbicular, slightly convex; *anus* in the periphery: *ambulacræ* ovate-oval, disjoined at tip: *beneath* with five radiating grooves, each of which terminates in three branches, at about two-thirds of its length from the centre; these branches consist each of two impressed lines; the two lateral branches are opposite at their base, and form a right angle with each other; the central branch is rectilinear with the groove; colour when recent, bright coppery.

Diameter about two inches.

This species seems to be closely related to S. *parma* of Lamarck, from the Indian Ocean, as it agrees with his short description; but having consulted the figure of Rumphius, to which Lamarck refers, I find that species to be twice as large as the present, and exhibiting a different aspect.

For perfect specimens of the *trifaria,* I am indebted to Mr. Aaron Stone. Within twenty miles of the shore of Long Island, this gentleman dredged a distance of about a mile, and brought up 150 specimens, unaccompanied by any thing else. He informed me that their colour was bright coppery, and that they had a very fœtid effluvium.

I have never found any of this species cast upon our coast as far south as New Jersey, but Mr. D. H. Storer has recently sent me two bleached individuals from the coast of Maine, one of them from Prout's neck, and the other from Hunnewell's point; but he informs me that they are not abundant at either of those beaches.

3. S. 5-*faria*. Orbicular, discoidal; anus between the mouth and margin.

Fossil of Georgia.

Body orbicular, regularly rounded, without any angulated appearance; *beneath* very slightly concave; *anus* situated at half the distance between the mouth and the margin; from the mouth are five radiating, impressed lines, each of which, at its middle, gives off an opposite branch on each side; these lateral branches at their middles, each gives off a branch on its exterior side.

Diameter $2\frac{3}{10}$ inches.

Height $\frac{2}{3}$ of an inch.

For this interesting species we are indebted to Dr. Boykin of Milledgeville, Georgia, who informs us that they abound in that vicinity, and that they are there familiarly known by the name of "Biscuits."

The name of this genus is preoccupied in Entomology, and must therefore be changed.

Mr. Peale found a species of Linnæan ECHINUS on the Florida Keys, that is probably the CLYPEASTER *rosaceus*, Linn. or a very closely allied species, but as I have not seen a specimen, I cannot introduce it into this paper.

SPATANGUS, *Klein, Lam.*

S. *atropos*, Lam.

I am indebted to Mr. William Wagner for the specimen: he found it on the coast near Charleston, S. C. It agrees very well with Lamarck's description of the *atropos*, and with the figures of that species in the Encyclop. Meth.

Description of an Hermaphrodite ORANG OUTANG, *lately living in Philadelphia. By* RICHARD HARLAN, M. D. *&c. Read October* 17, 1826.

SIMIA.

S.—With black, thick, woolly, and frizzled hair, covering all parts of the body, with the exception of the palms, the face, and the ears. Skin black. Nails on all the fingers. Orbits of the eyes prominent. Arms very long. No cheek-pouches: no tail: no guttural sac: a rudiment only of callous buttocks. Nose more prominent, and facial angle more elevated, than in the SIMIA *satyrus* of Linnæus.*

Dimensions.—Total length, from the vertex to the heel, 2 feet 2 inches: superior extremities, 1 foot 6

* Corpore pilis nigris obtecto; facie, palmis, et auriculis nudis; cute nigro; palmis pentunguibus; brachiis longissimis; cauda, et sacculis buccarum et gutturis omnino carentibus; natibus leviter callosis; naso prominentiore, et angulo faciali plus elevato quam in Simia Satyro Linnæi.

inches: arms, 6 inches 6 tenths: fore-arm 9 inches 1 tenth: hand and fingers, 5 inches 5 tenths: lower extremities, 11 inches: thighs, 5 inches 4 tenths: legs, 6 inches 2 tenths: foot, 4 inches 6 tenths: body, 10 inches 5 tenths: head and neck, 11 inches 3 tenths: length of the bare-face, 3 inches: circumference of the thorax, 11 inches 3 tenths: circumference of the head, 10 inches.

Observations.—This interesting animal was imported into New York, from the island of Borneo, in the month of May, 1826; and at its death, was said to be rather less than two years of age. Each jaw contained twelve teeth; three molars, one canine, and two incisors, on each side.

When standing erect, the fingers of the fore-hand nearly touched the ground; advancing on a plane surface, he voluntarily assumed the erect attitude; balancing himself with his long arms, on the slack rope, and climbing with the greatest agility: when he retired to sleep, assuming a recumbent posture; displaying great fondness for fruits of all descriptions, but particularly for grapes; possessing all the docility and intelligence characteristic of the orangs. He died of a diarrhœa, from excessive indulgence in fruits.

Distinctive characters of the species.

The Orang genus has already been increased from one to six species. The present specimen differs from all the others hitherto described; it evidently pertains to the *Gibbon* family, or the Long-armed Orangs, the type of which is the *Simia lar* (Linn.) to

which are added, 1st, the Little Gibbon, or *Orang varié* of Cuvier. 2nd, the Siamang, or S. *syndactylus* of Raffles; and 3d, the Active Gibbon, or *Wou-wou* of Duvancel and F. Cuvier. From all these our specimen differs, in being of a universal black colour, in the facial line being less inclined, in the absence of the circle of gray hairs around the face, in the rudimentary state of the ischiatic callosities, and, with the exception of the Active Gibbon, in the absence of the guttural sacs.

Should I be right in supposing the above details to offer *specific* differences, the animal may be properly named Simia *concolor*.

Habitat.—Island of Borneo; climbing trees, feeding on fruit and insects. The present specimen, caught and devoured all the flies within his reach.

Dissection.—General adhesions of the peritoneum, omentum and intestines; glands of the mesentery very much enlarged; white eruptions, or rather ulcerated tubercles on the peritoneum, such as are observed occasionally in scrophulous subjects, and inflammation of the mucous coat of the stomach and intestinum rectum.

Orangs have been occasionally dissected, and minute and laboured descriptions of their anatomy are published. The present individual displayed remarkable peculiarities: the ligamentum rotundum very strong; liver resembling the human, having the same number of lobes, &c. Appendicula vermiformis very large; contents of the thorax displaying close analogy to the human: ventricles of Morgagni rather

large, though not communicating with a sac in the throat, as in the Simia satyrus and some monkeys; sternum composed of only two pieces, like that bone in man, in which it differs from the Simiæ with tails. Twenty-five rings to the trachea, fourteen ribs on each side, fourteen dorsal vertebræ, seven cervical, five lumbar, five sacral, and five coccygeal: but the most remarkable peculiarity remains to be noticed; the subject proved to be a complete *Hermaphrodite*.

Hermaphrodism, that is to say, individuals uniting in themselves the means of reproduction, without the concurrence of other individuals of their own species, appears to be, in some sort, a vegetable attribute; as among plants, the class Dioècia (Linn.) is the only one not hermaphrodite. The nearer the animal approaches the vegetable kingdom, the more frequent and complete are the instances of hermaphrodism. This is of two distinct kinds: in the one, it is absolute, the animal possessing within itself the powers of reproduction, as is instanced in the Bivalve shells, as the Oyster, in some of the Multivalves, as the Chiton, and in Zoophites, Holothuria, &c.; whilst in Univalve shells, on the contrary, such as the Helix, Limnea, Planorbis, &c. although they unite the two sexes, yet the union of two individuals is necessary to fecundation. The common garden snail, is a familiar example: animals of this description are properly termed "Androgynous." The disposition, then, to hermaphrodism, is more rare, as we advance in the scale of perfection, or rather to a more complex organization. Those cases said to have occurred in the

higher orders of animals, may, with few exceptions, be attributed to mal-conformation of the genital organs, and to a mixture of the two sexes; which, according to the observations of Sir E. Home,* and Mr. John Hunter,† are of more frequent occurrence in the bull, than in any other of the mammifera: but in no instance have these authors found the assemblage of the organs of both sexes complete; some or other of the organs being absent, or existing in a rudimentary state.

The case which most nearly approaches in perfection the subject of the present description, is that detailed by Mascagni in the "Bulletin de la faculté de Medecine for 1811, p. 176," where he describes a bull with all the male organs, and with ovaries, uterus, and vagina; but in place of a vulva, the vagina had its orifice in the urethra. There is also another case, somewhat similar, described in the "Med. Repository, No. XLV," of a human individual in Lisbon, uniting both sexes in apparently great perfection. The subject was 21 years of age, was twice pregnant, and aborted at the third and fifth months. It is true, that though the penis and testicles existed, the latter, with their excretory ducts, were not examined anatomically. For a more detailed account of this individual, vide Dictionnaire des Sciences Medicales, art. "*Cas rares.*"

The above observations will at least demonstrate the possibility of the occurrence of complete hermaphrodites, even in the highest class of animals. The specimen which forms the subject of the present de-

* Philosoph. Trans. 1799.

† Obs. on certain parts of the animal economy, Lond. 1792.

scription, will furnish us, perhaps, with the nearest approach to a complete union of the sexes in the same individual, which has been detailed; and is the only instance, as far as we have observed, of a circumstance of this kind occurring in the monkey race.

In the present instance, the penis was about one inch in length, subject to erections: terminating as usual in a glans, but imperforate; a deep groove on the inferior surface, serving as a rudimentary urethra: this groove extended about two-thirds of the length of the penis, the remaining portion being covered with a thin, cuticular, diaphanous membrane, which also closed the external orifice of the vagina, being extended across the vulva. The vagina rather large, and displaying transverse striæ; remains of the nymphæ, and labia externa, visible; the meatus urinarius opening beneath the pubis into the vagina, the urine must have been directed along the groove of the penis, by the membrane obstructing the orifice of the vagina: the os tincæ was surrounded by small globular glands, the orifice and cervix admitting a large probe into the cavity of the uterus, which organ appeared perfect, with all its appendages; the round and broad ligaments, together with well-pronounced ovaries, all in situ.* The scrotum was divided, consisting of a sac on each side of the labia externa, at the base of the penis, covered with hair; the testicles

* The male and female organs of generation, were in this animal, as completely perfected as could have been anticipated in so young an individual, and resembled those of other individuals of a similar age: minute ova were visible in the ovaries.

lay beneath the skin of the groin, about two inches from the symphysis pubis, obliquely outwards and upwards; they appeared to be perfectly formed, with the epidydimis, &c. The most accurate examination could not discover vesiculæ seminales; but an opening into the vagina, above the meatus urinarius, appeared to be the orifice of the vas deferens. The testicles were unfortunately separated from the body, during the process of skinning. Admitting what in reality appeared to be the fact, that all the essential organs of both sexes were perfect in this individual, had the subject lived to adult age, most interesting results might have been elicited. Could not the animal have been impregnated by the male individual, by rupturing the membrane closing the vulva? or by masturbation, might not the animal have impregnated itself? by this means exciting the testicles to discharge their seminal liquor into its own vagina. The imperfection of the urethra, most probably, would have prevented the animal from ejecting the semen into the vagina of another individual. The subject, whilst living, always passed for a male. Had an instance of a like nature occurred in the human subject, it might have occasioned great difficulties, viewed in the light of a case of Legal Medicine.

Drs. Charles Pickering and S. G. Morton assisted at this dissection. The accurate drawings of the anatomical parts, in a recent state, of the natural size, by Dr. Morton, and the figure of the animal, by Dr. R. M. Bird, have largely contributed to the value of this paper.

EXPLANATION OF THE PLATES.

Plate IX.—From a drawing of the animal, taken after death.

Plate X. fig. 1st.—External organs of generation.

A. Orifice from the vagina and urethra.
b. Membrane covering the vulva.
c. Prepuce.
d. Raphe of the perineum.
e. Penis with a groove on its inferior surface.
f. Ischiatic nudities.
g. Anus.

Fig. 2nd.—Internal organs of generation, viewed from behind; the uterus turned up, with its ligamentum latum, to show the ovaries, &c.

A. Bladder.
b. b. Ovaries.
c. Uterus.
d. d. Fallopian tubes.
e. Rectum.
f. f. Broad ligaments.

Descriptions of new species of COLEOPTEROUS INSECTS *inhabiting the United States. By* THOMAS SAY. *Read January* 18, 1825.

(Continued from page 204.)

OPATRUM, *Fabr.*

1. O. *notum.* Brownish-black: *elytra* with regular series of impressed punctures.

Opatrum clathratum. Melsh. Catal.

Head with small, close set punctures; terminal emargination not angulated: *thorax* with small, close set punctures; lateral edge reflected; posterior angles somewhat produced, subacute: *elytra* destitute of impressed striæ, but with regular series of large, profoundly impressed, rather longitudinal punctures: *tarsi* piceous.

Length less than $\frac{7}{10}$ of an inch.

This does not correspond with the description of the *clathratum*, Fabr., inasmuch as the elytra are not striated. It is common.

2. O. *pullum.* Brown; head and thorax darker; elytra with punctured striæ; beneath reddish-brown.

Description. *Head* and *thorax* dark-brown, minutely and densely punctured; posterior angles not prominent; lateral edges not reflected: *antennæ* piceous; terminal emargination of the clypeus not angulated: *elytra* with impressed, punctured striæ, the punctures profound, somewhat transverse; interstitial lines with numerous small punctures: *beneath* reddish-brown.

Length rather more than $\frac{5}{10}$ of an inch.

I obtained this species on the margin of the Arkansaw river, when with major Long's party. It may be distinguished from the preceding, by the striated elytra, and by the simple edge of the thorax.

Boros, *Herbst.*

B. *unicolor.* Blackish-brown, punctured; thorax not obviously indented behind.

Body depressed, rather slender, blackish-brown, punctured: *head* suboval, punctures rather large, numerous, smaller before; a dilated indentation each side anterior to the eyes: *antennæ* but little longer than the head: *thorax* oval, accurately rounded each side, punctures numerous, rather large; no indentation: *elytra* with irregular, numerous punctures, smaller than those of the thorax, not disposed in any regular series; an obtuse indented line on the outer margin, and another at the suture.

Length $\frac{9}{20}$ of an inch.

I received this insect from Dr. J. F. Melsheimer, under the name I have adopted. It is certainly very closely allied to B. *elongatus*, Herbst, but judging by the figure given by this author, it is much smaller; it is also destitute of any obvious indentation on the posterior part of the thorax.

Boletophagus, *Illig.*

B. *corticola.* Thorax with elevated points; elytra with elevated interrupted lines.

Body brownish-black: *head* simple, slightly crenate

on the anterior edge; a sub-acute tubercle at the inner edge of each eye; base punctured; punctures large, close set, concave: *thorax* rough, with very numerous conic points; an impressed dorsal groove; lateral edge acutely crenate: *elytra* with prominent, much interrupted lines, intervening grooves with remote punctures.

Length $\frac{3}{16}$ of an inch.

I adopt the name given by Dr. J. F. Melsheimer to this species; he found eight or ten specimens, under the bark of a decaying white pine, in Virginia. I have not yet found it in Pennsylvania.

Eustrophus, *Illig.*

E. *tomentosus.* Brown; golden sericeous; elytra immaculate.

Mycetophagus tomentosus, Melsh. Catal.

Body oblong-oval, regularly and equally rounded, before and behind; brown, covered with very numerous, bright sericeous hairs: *antennæ* and *palpi* rufous: *thorax* but little undulated on the posterior edge: *elytra* with slender, punctured striæ: *beneath* colour of the antennæ.

Length $\frac{1}{5}$ of an inch.

At first view, this might be mistaken for the E. *bicolor*, Fabr. Dej. but that species is considerably larger, of a much darker colour, almost black, with a comparatively slight opal-sericeous gloss; the antennæ also are blackish, with the base and tip rufous or fulvous; the *bifasciatus*, Nob. has banded elytra.

Helops, *Fabr.*

1. H. *pullus.* Body short, very convex, somewhat cupreous; third joint of the antennæ not greatly longer than the fourth.

Helops pullus, Melsh. Catal.

Antennæ piceous; third joint hardly as long as the fourth and fifth together; the two latter equal: *eyes* moderate: *head* and *thorax* densely and equally punctured; anterior angles of the latter sub-acute; lateral edge slightly contracted behind the anterior angles: *elytra* rather paler than the head and thorax, and more obviously cupreous, with punctured striæ: *pectus* each side, with numerous, longitudinal, impressed lines; *tarsi* dark rufous.

Length from $\frac{1}{4}$ to $\frac{3}{16}$ of an inch.

In general form, it somewhat resembles H. *contractus*, Beauvoir; particularly in the great convexity of the superior surface of the body; but it cannot be mistaken for that insect.

2. H. *politus.* Cupreous; elytra united; wings imperfect.

Body bright copper, polished; punctured: *antennæ* long, blackish; third joint equal to the fourth and fifth together, which are equal; *labrum* piceous: *eyes* moderate: *thorax* decidedly widest before, narrowest at the posterior angles, with small, close set punctures, and a longitudinal, obsolete, impressed line: *elytra* united, the line of the suture distinct, with acutely impressed, punctured striæ; interstitial lines flat, with very minute punctures: *wings* imperfect, shorter than the elytra: *beneath* piceous.

Length $\frac{2}{5}$ of an inch.

I obtained this handsome and curious species in East Florida.

3. H. *tenuicollis*. Blackish; terminal joint of the antennæ fulvous; thorax cylindrical.

Body elongated, brownish-black: *eyes* large: *antennæ* rather short; fifth joint obviously shorter than the fourth; terminal joint fulvous: *thorax* minutely and equally punctured; narrow, sub-cylindric, slightly wider in the middle, equally wide at base and tip; narrower than the elytra: *elytra* with rather wide and profound striæ, which are punctured; interstitial lines narrow, convex: *beneath* piceous: *anterior tibiæ* slightly arcuated.

Length $\frac{1}{4}$ an inch.

This species resembles a *Upis*, in the form of the thorax.

4 H. *aratus*. Body short, moderately convex; third joint of the antennæ rather shorter than the fourth and fifth united; lateral thoracic edges rectilinear.

Head punctured densely: *antennæ* dark testaceous: *thorax* dull metallic greenish, slightly tinged with purplish; thickly punctured, punctures rather large; angles sub-acute; lateral edges rectilinear: *elytra* slightly purplish, brassy, with punctured striæ, and smaller punctures on the intermediate spaces: *beneath* blackish: *pectus* punctured on each side, with small, close set, longitudinal impressed lines: *feet* reddish-testaceous at base.

Length $\frac{1}{4}$ of an inch.

I am indebted for this species to Mr. Jno. S. Skinner, editor of the American Farmer, who received it from a correspondent, with a note, stating that they had been found on the body of the peach tree, just below the surface of the ground.

Cistela, *Fabr.*

1. C. *obscura.* Blackish-brown, with short hairs; antennæ and feet dusky rufous; striæ of the elytra not deeply impressed.

Cistela obscura, Melsh. Catal.

Body oblong, varying in colour from a light brown to a blackish, with numerous short pale hairs arising from punctures: *head* transversely a little indented between the antennæ: *antennæ* moderate, dark rufous: *palpi* rufous: *thorax* with the posterior angles sub-acutely rounded: *elytra* with slightly impressed striæ, their punctures profound: *beneath* piceous, and, excepting the pectus, punctured: *feet* rather paler, somewhat rufous.

Length ♂ less than $\frac{1}{4}$ ♀ more than $\frac{3}{10}$ of an inch.

The male in my specimens is of a paler colour than the female. It differs from the *atra*, Nob. by having the striæ of the elytra much less deeply impressed.

The palpi are all terminated by a joint formed like a reversed triangle; it therefore belongs more properly to the genus *allecula* of authors.

2. C. *atra.* Blackish-brown, with short hairs: striæ of the elytra deeply impressed.

Cistela atra, Melsh. Catal.

Body nearly black, with a tinge of brown, with numerous short blackish hairs, arising from punctures: *head* transversely indented between the eyes; *antennæ* dark fuscous, nearly half as long as the body, terminal joints somewhat ovate, and slightly patiolated: *thorax* with the posterior angles sub-acutely rounded: *elytra* with rather deeply impressed, punctured striæ: *beneath* dark rufo-piceous.

Length $\frac{5}{16}$ of an inch.

It may be distinguished from the preceding, by the form of the terminal joints of the antennæ, as well as by the more deeply impressed striæ.

Mordella, *L. Fabr.*

1. M. *trifasciata.* Testaceous, disk of the thorax and three bands on the elytra black.

Mordella trifasciata, Melsh. Catal.

Body pale testaceous: *head* immaculate: *thorax* with the disk and anterior margin black: *elytra* with a black band at base, irregular on its posterior edge, and extending a short distance down the suture; another on the middle, rather narrower at the suture, and a third at tip: *beneath,* excepting the pectus, dull piceous, slightly yellowish sericeous: *feet* pale.

Length $\frac{1}{16}$ of an inch.

2. M. *attenuata.* Pale rufous; thorax with a black spot; elytra black, with an abbreviated rufous vitta.

Description. *Body* rufo-testaceous: *antennæ* black, four basal joints pale rufous: *thorax* with a large black spot on the anterior disk: *elytra* black, a rufo-testa-

ceous vitta, commencing at the middle of the base where it is broadest, and gradually attenuated to the tip, which does not reach the middle; a sericeous vitta extends the whole length in a particular light, more distinct towards the tip: *postpectus, venter* and *posterior feet* piceous, sericeous: *anterior* and *intermediate feet* pale rufous.

Length less than $\frac{1}{8}$ of an inch.

Anaspis, *Geoff.*

A. *rufa.* Entirely rufous, immaculate.

Mordella rufa, Melsh. Catal.

Body rather dull rufous, more obviously sericeous on the elytra: *beneath* clearer rufous: *feet* somewhat paler: *antennæ* longer than the thorax.

Length more than $\frac{1}{10}$ of an inch.

Anthicus, *Fabr.*

1. A. *constrictus.* Black; elytra dark rufous at base; thorax very much contracted behind the middle.

Description. *Head* black, polished: *antennæ* blackish-piceous: *thorax* black, polished, very profoundly contracted behind the middle, bilobate, anterior lobe much the larger: *elytra* dull rufous, gradually becoming darker towards the tip, which is almost black; with regular series of impressed punctures: *thighs* blackish, rather dilated: *tibiæ* dull rufous.

Length $\frac{1}{10}$ of an inch.

Differs from *cinctus*, Nob. by having the thorax much more profoundly contracted, and in being destitute of any cinereous band, or terminal spot.

2. A. *bifasciatus*. Rufous; elytra with a black band and tip.

Head darker than the thorax: *antennæ* and *palpi* paler than the head: *thorax* gradually narrowed behind, not abruptly contracted: *elytra* irregularly punctured; a black band on the middle, a little dilated on the outer margin, and slightly interrupted at the suture; a terminal black band: *beneath* pale rufous.

Length $\frac{1}{10}$ of an inch.

Comes near to *basilaris*, Nob.; but, in addition to its difference in having the elytra banded, the base of these wing sheaths is not turgid, as in that species. I obtained a specimen in East Florida, when in that country with Mr. Maclure's party.

3. A. *pallidus*. Pale; elytra with a broad band and narrow suture, blackish.

Head and *thorax* pale ochreous; the latter with a moderate longitudinal groove, and gradually narrowed towards the base; the lateral curvature behind the middle being somewhat concave: *elytra* pale yellowish; basal margin dusky; a dilated blackish band on the middle much dilated on the exterior margin, and at the suture; on both of which, it extends in a narrow line to the base and tip; punctures not distinct: *beneath* pale rufous: *feet* whitish.

Length $\frac{1}{10}$ of an inch.

This may be distinguished by its thoracic groove, pale colour, single band, and marginal lines.

4. A. *politus*. Blackish; thorax not narrowed behind; elytra bright rufous.

Body with rather long hairs: *head* blackish: *antennæ* dull rufous: *thorax* blackish, rather short, not obviously narrowed behind; a transverse impressed line at base: *elytra* impunctured, polished, rounded, bright rufous, at tip somewhat pointed and blackish: *feet* bright rufous.

Length more than $\frac{1}{20}$ of an inch.

The form of the thorax and elytra of this species are quite different from those of the preceding species.

5. A. *lugubris*. Black, impunctured; two basal joints of the antennæ and mouth rufous.

Inhabits Missouri.

Body black, impunctured, slightly hairy: *head* polished: *antennæ* a little serrate, two basal joints obscure rufous: *mouth* obsolete piceous: *thorax* polished, transversely oval, orbicular, a distinct impressed transverse line at base: *elytra* opaque, rather hairy, with minute transversely-confluent punctures.

Length less than $\frac{1}{4}$ of an inch.

Found near Fort Osage.

6. A. *collaris*. Black; thorax rufous; two basal joints of the antennæ at tip dull rufous; mouth pale.

Inhabits Missouri.

Body black, impunctured, a little hairy: *antennæ* a little serrate, two basal joints dull rufous at tips: *mouth* pale, palpi dusky: *thorax* transversely oval-orbicular, rufous, polished, a transverse impressed basal line: *elytra* hairy, with small, numerous, irregular punctures.

Length $\frac{1}{7}$ of an inch.

Distinguished from the preceding by the colour of the thorax.

7. A. *terminalis*. Black, punctured; thorax rufous; elytra yellowish-white at tip.

Inhabits Missouri.

Body black, punctured, with short hair: *head* polished, impunctured: *antennæ* black-brown: *labrum* and *mouth* yellowish white: *maxillary palpi* dusky at tip: *thorax* rufous, transversely oval, impunctured, a transverse impressed basal line: *elytra* with transversely confluent punctures, a yellowish-white terminal spot: *pectus* rufous: *nails* one-toothed beneath.

Length more than $\frac{1}{5}$ of an inch.

Found in Missouri and Arkansaw.

8. A. *labiatus*. Black, exterior margin of the thorax, clypeus, labrum, and basal joints of the feet rufous.

Inhabits Missouri Territory.

Body black, with minute punctures: *head* obsoletely piceous on the vertex, a little indented above the antennæ: *antennæ* filiform, somewhat serrate, two first joints rufous: *clypeus*, *labrum*, and *mouth*, rufous: *mandibles* black: *thorax* punctures sparse, a longitudinally oval rufous spot on the lateral margin, and a transverse impressed line and spot at base: *scutel* rounded at tip: *elytra* densely punctured, tip mucronate, and with an indented spot: *coxæ* and *trochanters* rufous: *pectus* rufous, a lateral, submarginal black spot.

Length about $\frac{7}{20}$ of an inch.

Taken on the lower Missouri, near Fort Osage: closely allied to the three preceding species.

9. A. *impressus*. Black; thorax rufous; an indented spot at the tip of each elytra.

Inhabits Pennsylvania.

Mouth, antennæ, two basal joints, and *palpi* at base, dark rufous: *thorax* rufous, with a longitudinal slightly impressed line: *elytra* densely and irregularly punctured; a large profound, indented, oval impunctured spot at the sutural tip of each elytra.

Length $\frac{3}{16}$ of an inch.

Resembles A. *collaris*, but is distinguished by its somewhat larger size, and the profoundly impressed spot at the tip of each elytra. I found this species early in May, attached to the side of a *Meloe angusticollis*, which was perfectly at rest upon the ground, not appearing to be in the slightest degree incommoded by the weight of its temporary parasite, but seeming rather pleased with its society. This species and the *lugubris, collaris, terminalis*, and *labiatus*, differ much from the other species of the genus that have come under my observation; but as they appear to me to approach more closely to this genus than to any other, I place them here for the present.

ANTHRIBUS, *Fabr.*

1. A. *notatus*. Black; head, thorax each side before, and elytra at base and tip, with a gray spot.

Anthribus notatus, Melsh. Catal.

Head entirely gray above: *antennæ* piceous-black:

thorax with an irregular gray spot each side before, connected by a line of the same colour on the anterior margin; about four very small obsolete gray spots, of which one is each side near the base, and the others near the middle: *elytra* with a longitudinal, irregular gray spot at the base of each, a smaller one near the subsutural middle, and a band at tip: *tibiæ* with a gray band on the middle: *tarsi* first joint gray: *venter* gray at tip, with three black dots each side.

Length $\frac{1}{4}$ of an inch.

This species is not common.

2. A. *capillicornis*. Blackish; antennæ elongated, very slender; elytra with black spots.

Anthribus capillicornis, Melsh. Catal.

Body brownish-black: *head* with small dense punctures, plane, not elevated between the eyes: *antennæ* much elongated, nearly two-thirds the length of the body; basal joints dull rufous at the incisures: *thorax* with small dense punctures, immaculate, elevated line of the posterior margin, parallel with the edge, entire: *elytra* with punctured striæ; interstitial lines with quadrate, velvet black spots: *tibiæ* with an obsolete gray band.

Length $\frac{3}{10}$ of an inch.

The antennæ are very long and slender; but in other respects they resemble those of the neighbouring species.

3. A. 4-*notatus*. Blackish; a humeral spot and common band, dull rufous.

Anthribus 4-*notatus*, Melsh. Catal.

Head with dull yellowish hair; a little elevated

between the eyes: *antennæ* shorter than the thorax, piceous at base: *thorax* slightly varied with the yellowish hair; punctures rather large; line of the posterior margin, nearly parallel to the edge, entire: *elytra* with striæ of large punctures; a dull rufous, irregular, humeral spot, and an abbreviated common band of the same colour behind the middle; on the posterior declivity are several somewhat elevated tubercles, of which the superior is largest: *tibia* annulate with testaceous, more obvious on the posterior pair.

Var. a. Abbreviated band of the elytra grayish.

Length more than $\frac{3}{20}$ of an inch.

4. A. *limbatus*. Testaceous; rostrum short; striæ of the elytra sub-acute, with small punctures.

Anthribus limbatus, Melsh. Catal.

Body rufo-testaceous, with short pale ochreous hair: *front* a little convex: *rostrum* short: *antennæ* rufous: *thorax* with the line of the posterior margin prominent, a little undulated, approaching the posterior edge in the middle: *elytra*, striæ narrow, punctures not large: *beneath* dusky: *feet* rufous.

Length $\frac{3}{20}$ of an inch.

5. A. *alternatus*. Robust; elytra with series of alternate gray and black spots.

Body short and thick, densely hairy, brownish-cinereous: *head* plane, not prominent between the eyes: *antennæ* moderate, pale rufous, three last joints fuscous: *thorax* with a few black spots; elevated line of the posterior margin not prominent, placed near, and parallel to the posterior edge: *elytra* with punc-

tured striæ, alternate interstitial lines, with alternate black and gray spots: *feet* rufous; thighs dusky; tibiæ with about two dusky bands.

Length $\frac{3}{20}$ of an inch.

This may readily be distinguished from A. *capillicornis*, by the much shorter antennæ, and more robust form of body.

6. A. *variegatus*. Varied, with blackish and dull yellowish; elytra, each with two larger spots.

Anthribus variegatus, Melsh. Catal.

Body dull ochreous, varied with blackish, with very short hair: *head* plane, dusky, paler towards the tip: *antennæ* moderate, pale rufous, three terminal joints fuscous: *thorax* much varied with blackish, which does not extend on the anterior margin: *elytra* with hardly obvious striæ, with many small orbicular, blackish spots, and two larger spots on each, of which one is near the sutural base, and the other rather beyond the middle, near the suture: *feet* pale rufous: *thighs* blackish in the middle.

Length more than $\frac{1}{10}$ of an inch.

The two spots of each elytron are sometimes united by an intervening blackish sutural line.

The species is not uncommon, and I have found it on the "smut" of wheat. Mr. Lea took eighty individuals from six heads of wheat.

7. A. *tomentosus*. Body short, blackish, tibiæ rufous.

Anthribus tomentosus, Melsh. Catal.

Body robust, short, dark reddish brown, covered by short, yellowish-cinereous hair: *head* on the ver-

tex and between the eyes a little convex: *antennæ* rufous, at tip fuscous: *thorax* rather convex transversely in the middle, a little depressed before the base; posterior angles acute: *elytra* with punctured striæ, immaculate: *tibiæ* rufous; terminal joint of the tarsi blackish.

Length less than $\frac{1}{10}$ of an inch.

This species does not appear to be common. It is much smaller than either of the preceding.

ATTELABUS, *Fabr. Dej.*

1. A. *pubescens.* Dull rufous, with short yellow down.

Attelabus pubescens, Melsh. Catal.

Body above dull rufous, the whole surface covered with thick set, somewhat matted, short yellowish down: *head* with very small punctures at base, and large ones at tip; an elevated frontal longitudinal line: *rostrum* much contracted between the antennæ, dilated before: *thorax* with an indentation each side of the middle: *elytra* striate, and with irregular punctures: *venter* nearly naked: *feet* naked, bright rufous.

Length about $\frac{1}{5}$ of an inch.

This species is not uncommon. D. Melsheimer found it on the leaves of the Corylus americana.

2. A. *scutellaris.* Black; antennæ and tarsi rufous; scutel white.

Body deep black, much punctured: *head* short behind the eyes, with distant punctures, more dense on the rostrum: *antennæ* rufous: *thorax* with numerous

dense punctures: *scutel* white: *elytra* slightly hairy, with punctured striæ; the interstitial lines crenate: *feet* piceous: *thighs* with a slight angle on the inferior middle: *tarsi* rufous.

Length $\frac{1}{10}$ of an inch.

I obtained two specimens on the Kalmia latifolia in July. It is a small species.

Apion, *Herbst.*

1. A. *rostrum.* Black; thoracic punctures large, dense; an impressed line, and punctures between the eyes.

Rhynchites rostrum, Melsh. Catal.

Body entirely black: *vertex* impunctured: *front* with large punctures, and a longitudinal impressed line; an impressed longitudinal line between the antennæ: *thorax* with large, concave, close set punctures; an impressed, abbreviated line on the middle of the posterior sub-margin: *elytra* striate, the striæ rather wide, punctured, interstitial lines flat, topped with a single series of small hairs.

Length from the tip of the rostrum less than $\frac{1}{20}$ of an inch.

This is a very abundant species. Dr. J. F. Melsheimer found it on the leaves of the Robinia *pseudacacia*; and Dr. Harris of Milton, Massachusetts, informs me that it occurs in all its stages in the seed vessels of the wild Indigo, (Baptisia *tinctoria,*) in the months of August and September. I have also taken it in plenty on that plant. It seems to be allied to

the A. *nigrum*, Herbst., but it does not agree with his figure, nor sufficiently well with his description.

Brachycerus, *Oliv. Fab.*

B. *humeralis*. Body inequal, with punctures furnishing small hairs; humeral angles advanced.

Inhabits Arkansa.

Body black, punctured, and with minute punctures furnishing short, robust, filiform, white remote hairs: *head* transversely indented at the base of the very short rostrum, and with a very profoundly impressed abbreviated frontal line: *antennæ*, terminal joint oval acute: *thorax* inequal, widest in the middle, punctures dilated, preceded each side by small tubercles; anteriorly profoundly excavated, for the reception of the proboscis: *elytra* with double series of dilated punctures, each puncture preceded by an obtuse, slightly elevated tubercle, and each double series of punctures above separated by a slightly elevated interstitial line: *humeral angles* projected forwards, and embracing the lateral base of the thorax; obtuse at tip, and rugged.

Length $\frac{7}{10}$ of an inch.

Male more than $\frac{1}{2}$ of an inch.

Not uncommon on the sterile country near the head waters of the Arkansa river; where I obtained a few specimens, when with major Long's party.

It is remarkable by the profound excavation in the anterior face of the trunk, for the reception of the rostrum; the antennæ also do not perfectly agree with

those of the genus; these and other distinctions would authorize the formation of a new subgenus, which may be named ——.

Bostrichus, *Fabr.*

1. B. *exesus.* Rufous; elytra excavated at tip, each six or eight toothed.

Bostrichus exesus, Melsh. Catal.

Body with short, numerous, ochraceous hairs: *head* ferruginous, with numerous small elevations: *antennæ*, club rather large: *thorax* ferruginous, rough, with numerous elevated points before; behind with rather distant punctures: *elytra* darker rufous than the thorax, with punctured striæ; punctures large, transverse; posterior declivity excavated, with large punctures, and armed on each side with six or eight teeth; the first and third being sometimes obsolete, the fifth a little larger.

Length more than $\frac{1}{4}$ of an inch.

Eats a straight, zig-zag, or waved passage between the bark and wood of the yellow pine, (Pinus *mitis*, Michaux,) when cut down or decaying: they are numerous, and many die when perfect, being unable to cut a passage through the bark.

2. B. *fasciatus.* Blackish; thorax at base and band on the elytra, ferruginous.

Bostrichus fasciatus, Melsh. Catal.

Body brownish-black: *thorax* rough before, with slightly elevated rugæ, and with a few hairs; behind glabrous, impunctured, and pale ferruginous: *elytra*

destitute of striæ, punctures obsolete; basal half pale ferruginous; sutural region dusky; posterior declivity hairy, slightly truncated, towards the suture indented.

Var. a. Band of the elytra occupying the greater portion of the surface, and of a clay colour. From Sinnipuxent.

Length more than $\frac{1}{10}$ of an inch.

3. B. *xylographus*. Rufous; elytra with series of punctures and short points on the posterior declivity.

Bostrichus xylographus, Melsh. Catal.

Body somewhat polished, a little hairy, rufous: *thorax* rugous to the middle, on the centre of which is an obtuse, hardly raised tubercle, behind which the surface is smooth, with a few very small punctures: *elytra* with series of slightly impressed punctures, the interstitial lines with minute punctures, furnishing hairs; posterior declivity not truncate, but with small denticulations on the interstitial lines.

Length much less than $\frac{3}{20}$ of an inch.

This insect is abundant in forests of the pine, (Pinus *mitis*, Mx.,) to which it is very destructive. Immediately beneath the bark, on the wood, it excavates a rectilinear groove, with short, equal, lateral grooves at right angles with the preceding.

It varies considerably in size.

4. B. *politus*. Rufous, with rather long hair; elytra entire.

Apate politus, Melsh. Catal.

Thorax with elevated, rather distant points before,

gradually disappearing towards the base: *elytra* punctured, punctures not in regular series; tip simple: *feet* yellowish: *tibiæ* narrowed at tip.

Length more than $\frac{1}{10}$ of an inch.

5. B. *pini*. Dark chesnut; elytra excavated at tip, each about four toothed.

Bostrichus typographus, } Melsh. Catal.
B. pini, }

Body somewhat hairy, chesnut brown: *head* with minute elevated points: *antennæ* pale rufous: *thorax* punctured, more particularly hairy before, and on each side; before the middle, with numerous small elevated points, more acute towards the anterior margin: *elytra* more particularly hairy each side, with striæ of transverse punctures; interstitial lines impunctured; tip truncated obliquely, and excavated; the exterior edge on each side, with four denticulations, of which the second from above is the largest, and the inferior one is smallest, and most acute; there are sometimes two very small ones above, near the suture.

Length $\frac{3}{10}$ of an inch.

This species is very closely allied to B. *exesus*. It is very destructive to many species of Pine. Mr. Z. Collins informs me that it depredates on the Larch, (PINUS *pendula*, ? AITON.) Dr. J. Mease recently exhibited to me some sections of limbs of the Silver-pine (PINUS *strobus*) trees, which decorate the public squares of this city, now discovered to be seriously injured by the attacks of this insect.

Hylurgus, *Latr.*

H. *dentatus*. Head plane; body reddish-brown; elytra with impressed, punctured striæ.

Head blackish, with short hairs: *antennæ* rufous: *thorax* blackish, passing into dull rufous at base; with numerous hairs rather shorter than those of the head; punctured: *elytra* dull rufous, with numerous short hairs; striate, the striæ deeply impressed, and giving the prominent basal edge a dentate appearance; interstitial lines rough, with raised points, which are more prominent and destitute towards the tip: *beneath* dark reddish brown: *feet* rufous.

Length nearly $\frac{1}{10}$ of an inch.

Resembles the *frontalis* Fabr.; but the head is destitute of spines, and the elytra are less prominently aculeate. I have recently received an individual from Dr. T. W. Harris of Milton, Massachusetts.

Apate, *Fabr.*

A. *punctatus*. Black-brown; posterior declivity of the elytra carinate on the exterior sub-margin.

Apate punctatus, Melsh. Catal.

Body confluently punctured: *head* rough: *antennæ* piceous, three exterior joints yellowish, decidedly transverse: *thorax* before rough, with elevated, thick points, which disappear towards the base, and are there supplied by discoidal punctures: *elytra* with large, impressed punctures, which can hardly be traced into a series; tip rather abruptly declining,

with prostrate yellowish hairs, and a carinate line on the exterior sub-margin.

Length more than $\frac{3}{20}$ of an inch.

Clypeaster, *And. Latr.*

C. *fasciatus.* Thorax yellowish, with a dusky disk; elytra black, with a yellowish band.

Body rather oblong-oval, depressed, with fine prostrate hairs: *antennæ* dusky at tip: *thorax* honey-yellow, blackish on the disk; anterior margin regularly rounded; posterior margin but little undulated: *elytra* very obtusely rounded at tip, almost truncate, black, with a honey yellow band a little beyond the middle, and the edge of the tip somewhat dull yellowish: *beneath* dusky: *feet* honey-yellow.

Var. a. Elytra honey-yellow, with a paler band.

Length about $\frac{1}{20}$ of an inch.

I refer this little insect to the present genus, by its form of body. It is very like a small Cassida, and the head is equally concealed by the clypeiform thorax.

Cerylon, *Latr.*

C. *castaneum.* Reddish-brown, punctured, palpi bright yellowish; elytra striate.

Inhabits the United States.

Body reddish-brown, punctured, glabrous: *antennæ* paler: *palpi* pale reddish-yellow, polished: *thorax* widely and slightly indented at base, each side of the

middle; punctures numerous distinct, posterior angles rectangular: *scutel* transversely linear: *elytra* with the striæ impressed, punctured.

Length rather more than $\frac{1}{15}$ of an inch.

This species is not uncommon. I have found it in various parts of the Union, and as far west as Missouri.

Mycetophagus, *Fabr.*

1. M. *punctatus.* Blackish; elytra rufous, with a large dot; scutel and tip black.

Mycetophagus punctatus, Knoch., J. F. Melsheimer.

Body blackish-piceous, with short hairs: *antennæ* and *mouth* piceous: *thorax* immaculate, with a small indentation each side, on the basal margin: *scutel* black: *elytra* with punctured striæ; rufous; region of the scutel black; a large black spot on the middle, confluent with the lateral margin, and extending on that part to the humerus, and in the opposite direction to a large subterminal black band; a small fulvous tip.

Length more than $\frac{1}{5}$ of an inch.

2. M. *flexuosus.* Blackish; elytra rufous, undulated with black.

Mycetophagus flexuosus, Melsh. Catal.

Body blackish-piceous, with short hairs: *antennæ*, terminal joint fulvous: *thorax* indented each side on the posterior margin: *elytra* with punctured striæ, yellowish rufous; a transverse quadrate black spot on the region of the scutel; a small rounded one on the

humerus; a large irregular one on the exterior middle, sometimes not interrupted by the suture, and a large black spot on the tip, enclosing a small fulvous spot: *beneath* pale piceous.

Length more than $\frac{3}{20}$ of an inch.

Closely allied to the preceding, but is much smaller, and the markings are always different.

3. M. 6-*punctatus*. Blackish; elytra with three spots of yellowish hairs.

Mycetophagus 6-*punctatus*, Melsh. Catal.

Body blackish-brown, with short yellowish sericeous hairs: *antennæ* with the three last joints larger: *labrum* yellowish: *thorax* with an abbreviated, obsolete longitudinal line on the posterior margin, each side: *elytra* with regular series of hairs, more obvious towards the exterior margin; a dense group of hairs on the middle of the base, forming a spot on that part; a subsutural one is before, and another behind the middle: *beneath* piceous: *tarsi* paler.

Length rather less than $\frac{1}{10}$ of an inch.

Very distinct from the preceding.

4. M. *didesmus*. Blackish; elytra with two bands and obsolete tip, pale rufous.

Body blackish-piceous, with short yellowish-sericeous hairs: *head* piceous: *antennæ* somewhat clavate: *thorax* with the posterior angles rounded: *elytra* with a pale rufous, slightly oblique band near the base, and another beyond the middle; tip obsoletely pale rufous: *feet* pale.

Length rather less than $\frac{1}{10}$ of an inch.

Lyctus, *Fabr.*

1. L. *reflexus.* Chesnut; thorax punctured, slightly narrower behind; elytra striate.

Inhabits Pennsylvania.

Lyctus americanus? Melsh. Catal.

Head with numerous, large, deep punctures; a longitudinal rather wide indented line each side, near the eyes: *antennæ* rather robust, shorter than the thorax: *thorax* with large numerous punctures, gradually a little narrowed behind, without any impressed line or elevation; lateral edge dusky: *scutel* convex, rounded: *elytra* with somewhat large striæ, in which are large punctures; terminal edge reflected.

Length $\frac{3}{10}$ of an inch.

2. L. *geminatus.* Thorax longitudinally indented: striæ of the elytra geminate.

Inhabits Pennsylvania.

Body depressed, dark reddish-brown, with short, prostrate hairs: *head* punctured: *antennæ* rather robust, with short hairs: *thorax* gradually a little narrowed behind, with numerous large punctures; middle of the disk widely indented longitudinally: *scutel* convex, rounded: *elytra* depressed above; impressed striæ placed in pairs; interstitial lines punctured.

Length $\frac{3}{10}$ of an inch.

3. L. *hæmatodes.* Thorax with two indented lines; elytra with large, deep punctured striæ.

Lyctus hæmatodes? Fabr.

Body dark reddish-brown, a little depressed: *head*

with large, not profound punctures; an indented longitudinal space each side, between the antennæ: *antennæ* short, robust: *thorax* with large, somewhat deep punctures, and two dilated, parallel, indented lines on the disk; margin a little elevated, in the middle contracted: *elytra* with dilated profound striæ or grooves, in which are dilated, not deeply impressed punctures; interstitial lines narrow, prominent.

Length less than $\frac{3}{20}$ of an inch.

This certainly approaches the description of L. *hæmatodes*, Fabr., and probably is the same; but as he describes that species to be carinated on the thorax, I have made out the above description, that those who have an opportunity, may compare.

I obtained many specimens under loose bark of the yellow-pine, on Chinquoteage Island, in October.

The three species above described, correspond with the characters of the genus Bitoma, of Herbst, in having the antennæ shorter than the head and thorax, and the mandibles not very obviously projecting; yet they appear to me to be very properly retained in the present genus.

Colydium, *Fabr.*

1. C. *parallelopipedum.* Head with two tubercles; thorax with two elevations, and an elevated line each side.

Colydium parallelopipedum, Melsh. Catal.

Body dull rufous; glabrous, punctured: *head* with an indented, transverse line, and two hardly promi-

nent tubercles, often obsolete: *thorax* quadrate, rather longitudinal; two tubercles before, which gradually dilate and disappear behind; lateral submargin, with an elevated line hardly attaining to the base, and extending on the anterior edge, so as to join the opposite line; exterior edge a little reflected; anterior angles prominent: *elytra* with hardly impressed, punctured striæ, becoming small behind: *feet* pale rufous.

Length less than $\frac{1}{5}$ of an inch.

This seems to be allied to C. *bidentatum*, Fabr., of South America.

2. C. *longiusculum*. Dark brownish; antennæ and feet rufous; thorax punctured.

Colydium longiusculum, Melsh. Catal.

Body linear, slender, elongated, dark reddish-brown: *head* blackish, eminently punctured; *nasus* dull rufous: *antennæ* bright rufous: *thorax* cylindric, long, minutely punctured, blackish: *elytra* with large, deep striæ, in which are transverse punctures; interstitial lines convex: *beneath* blackish: *feet* bright rufous.

Length $\frac{1}{5}$ of an inch.

3. C. *lineola*. Dark brownish; antennæ and feet rufous; thorax with an impressed line.

Colydium lineola, Melsh. Catal.

Body linear, slender, elongated, dark reddish brown: *head* blackish, dull rufous before, minutely punctured: *antennæ* rufous: *thorax* cylindric, long, minutely punctured, blackish, with a very obvious, longitudinal, acutely impressed line on the back: *ely-*

tra with rather large, deep striæ, and transverse punctures, which crenate the interstitial lines: *beneath* rufous.

Length less than $\frac{1}{8}$ of an inch.

Resembles the preceding, but is smaller, and is readily distinguished by the impressed line of the thorax.

Latridius, *Herbst.*

L. *pubescens.* Reddish-brown; thorax each side, irregularly denticulated.

Inhabits Pennsylvania.

Latridius pubescens, Melsh. Catal.

Body irregularly punctured, with numerous scattered hairs: *thorax* on the lateral edge having eight or nine irregular denticulations: *elytra* without any series of punctures or impressed line; hairs of the lateral margin prominent.

Length nearly $\frac{3}{20}$ of an inch.

Very different from the species which I described under the name of L. 8-*dentatus*, which has regular series of punctures on the elytra.

Silvanus, *Latr.*

S. *dentatus.* Thorax 6-toothed each side, and with a double indentation behind.

Latridius dentatus, Melsh. Catal.

Body reddish-brown, depressed, punctured; punctures small: *head* with a reflected edge each side,

extending above the eye, and somewhat more prominent over the insertion of the antennæ: *thorax* with two dilated, parallel, longitudinal indentations behind the middle, and not reaching the base; lateral edge with six rounded teeth; the anterior and posterior ones more acute: *elytra* with about four slightly elevated lines, sub-sutural one obsolete.

Length $\frac{3}{10}$ of an inch.

Synchita, *Hel.*

1. S. 4-*guttata*. Blackish-brown; thorax canaliculate; elytra each with two rufous spots.

Inhabits Arkansa and East Florida.

Body with short curved hairs: *head* at tip tinged with rufous: *thorax* with a longitudinal groove each side on the sub-margin, continued on the anterior margin; lateral margin a little concave, the edge denticulated: *elytra* with four dilated grooves, containing double series of punctures, and a marginal groove, containing but a single series of transverse punctures; interstitial lines slender; each elytron with an oblong longitudinal dull rufous spot at base, and another beyond the middle.

Length less than $\frac{3}{10}$ of an inch.

I obtained three specimens when with Major Long's party in Arkansa, and several occurred in East Florida.

2. S. *granulata*. Thorax granulated; elytra with granulated interstitial lines.

Inhabits East Florida.

Body blackish-brown: *head* granulated, somewhat rufous before: *antennæ* rufous, joints of the capitulum not distinctly separate: *thorax* covered with granulations; without grooves; lateral edge denticulated: *elytra* with regular series of elevated granulated striæ, and intervening, narrower, smooth ones.

Length less than $\frac{3}{10}$ of an inch.

Very distinct from the preceding. I obtained but a single specimen in Florida, and Mr. Nuttall presented me with three which he brought from Missouri.

Cucujus, *Fabr.*

1. C. *biguttatus.* Dark reddish-brown; antennæ more than half the length of the body; elytra with a large spot; thorax with a lateral impressed line.

Cucujus biguttatus, Melsh. Catal.

Head with numerous small punctures: *thorax* with numerous small punctures, not obviously crenate on the lateral edge, with an impressed line on the lateral submargin; the margins slightly paler than the disk: *scutel* pale: *elytra* with acute impressed striæ; a rather large, oval, pale spot somewhat before the middle, chiefly included between the second and third striæ: *beneath* rufous.

Length more than $\frac{1}{10}$ of an inch.

This is a common insect. It is so much like the C. *bipustulatus* of Panzer, that we find some hesitation in admitting it to a distinct rank. That species, however, judging from Panzer's figure, has the lateral

edges of the thorax obviously crenate, and the pale elytra spot is much larger than in the present species.

2. C. *modestus*. Reddish-brown; antennæ more than half the length of the body; thorax with a lateral impressed line; elytra with punctured striæ.

Head and *thorax* reddish-brown, with numerous small punctures; the latter somewhat rounded, hardly narrower behind, with an obvious impressed longitudinal line on each lateral sub-margin: *antennæ* considerably more than half the length of the body: *elytra* rather shorter than the abdomen, pale testaceous, immaculate; striæ obtuse, hardly impressed, with large punctures: *beneath* reddish brown.

Length more than $\frac{1}{10}$ of an inch.

This small species occurs in East Florida, and was obtained by Mr. Maclure's party. It is about equal in size to C. *testaceus*, Fabr., of Europe, but is a very different species. In the form of its antennæ, this species approaches the genus BRONTES.

LAMIA, *Fabr.*

1. L. *macula*. Brownish; sides of the thorax and spot on the elytra gray.

Cerambyx macula, Melsh. Catal.

Head brownish above, grayish before, and gray on the cheeks: *antennæ* a little longer than the body, dull rufous; the joints blackish at their tips: *thorax* slightly inequal, with very obtuse, obsolete tubercles; lateral spine none, substituted by a hardly elevated tubercle; above brownish, with two longitudinal,

distant blackish lines; sides beneath the lines gray: *elytra* punctured; each with six lines of minute black spots, one of which is at the suture, and another on the lateral margin; a large triangular gray spot on the lateral middle, rarely reaching the suture: *thighs* clavate, black: *tibiæ* dull rufous, annulate with dusky.

Length $\frac{3}{10}$ of an inch.

This species frequently occurs.

2. L. 6-*guttata*. Elytra with minute elevated points, and about six obsolete gray spots.

Lamia 6-*guttata*, Melsh. Catal.

Body brownish: *antennæ* a little longer than the body, obscure rufous; the joints dusky at their tips: *thorax* a little inequal, with hardly elevated, very obtuse tubercles; lateral spine none, being substituted by a slightly elevated tubercle: *elytra* punctured, each with six lines of minute black spots, which are each elevated, reflected, and acute; about six obsolete gray spots on each, of which one is sub-marginal behind the humerus, a minute one is upon the middle, and the third is small, subsutural, and behind the middle: *thighs* clavate, blackish: *tibiæ* dull rufous, annulate with dusky.

Length nearly $\frac{7}{10}$ of an inch.

This species resembles the preceding, but it may be distinguished by the want of the large gray lateral spot of the elytra, and more essentially by being armed with reflected points on the elytra. It also resembles the L. *aculifera*, nobis, but is destitute of the whitish elytral band, and the general form of the body is different from either, being less robust.

3. L. *dasycerus*. Antennæ hairy beneath; elytra with minute elevated points.

Body light brownish-cinereous: *antennæ* a little longer than the body, with rather long, close-set hairs on the inferior side: *thorax* without obvious tubercles; with two obsolete, longitudinal, approximate, brown lines: *elytra* with a common arcuated black line, extending from one humerus to the other; numerous, rather large, irregular punctures; a few series of distant elevated black points; an obsolete common white band behind the middle: *thighs* clavate: *tibiæ* not annulated.

Length $\frac{3}{10}$ of an inch.

This may be distinguished from either of the before mentioned species, by the pendant hair of the inferior side of the antennæ, &c. The white band is sometimes altogether wanting; and if very closely examined, the black points of the elytra will be found to consist of fasciculated hairs.

4. L. *alpha*. Elytra each with a white oblique line extending backwards from the middle of the suture.

Cerambyx analis? Melsh. Catal.

Body dull reddish-brown: *head* longitudinally deeply indented on the vertex: *antennæ* considerably longer than the body; incisures blackish: *thorax* above, destitute of tubercles, but with three small black spots, placed 2, 1; a short tubercle, abruptly acute at tip, each side before the posterior angles, which are emarginate; posterior margin with a transverse indented line: *scutel* blackish: *elytra* irregular-

ly punctured; a few black dots, consisting of tufts of hair, chiefly along the suture; region of the scutel dusky; a blackish marginal abbreviated line from the humerus; a blackish line margined with gray, extends from the middle of the suture, obliquely backwards, towards the exterior margin.

Length nearly $\frac{3}{10}$ of an inch.

This species is not very rare in Pennsylvania; I also obtained one in the N. W. Territory.

5. L. *faceta.* Blackish; elytra yellowish-white, with four blackish bands.

Antennæ nearly twice as long as the body: *thorax* equal, with an acute spine each side, near the posterior angles, which are emarginate; a gray mark behind the middle, in the form of a W: *elytra* yellowish-white; a blackish band at base, decurrent behind, along the suture; a narrow oblique band before the middle, not reaching the suture; a broad band rather behind the middle, and another at tip: *feet* ochreous.

Length $\frac{3}{10}$ of an inch.

I have found this pretty little species on the common Juniper, early in July.

6. L. *spinosa.* Covered with short, prostrate gray hair; antennæ gray and black.

Saperda spinosa, Melsh. Catal.

Head deeply indented between the antennæ: *labrum* piceous: *antennæ* longer than the body, black, each joint gray at base: *thorax* cylindrical, immaculate; an acute, slightly recurved spine near the posterior angles: *elytra* with numerous small impressed

punctures, at tip truncated: *venter* with a series of almost concealed black spots on each side.

Length more than $\frac{3}{10}$ of an inch.

The general form is that of a SAPERDA; but, agreeably to the generic characters, the spines of the thorax determine the affinity.

SAPERDA, *Fabr.*

1. S. *cingulata.* Brownish-cinereous, with obsolete fulvous dots; elytra with a dull cinereous band.

Saperda cingulata, Melsh. Catal.

Body robust, covered with short prostrate hairs: *head* varied with fulvous, a slender fulvous line around the eye, a frontal indented line: *antennæ* much longer than the body, but not twice as long: *thorax* obviously broader than long, slightly varied with fulvous: *elytra* with numerous, obsolete, small fulvous dots; at base and tip broadly reddish-brown; a broad cinereous, somewhat undulated band on the middle.

Length $\frac{11}{10}$ of an inch.

This is not common. Occurs on the Hickory.

2. S. *nigra.* Entirely black, immaculate; elytra irregularly punctured.

Saperda nigra, Melsh. Catal.

Head indented between the antennæ, minutely granulated: *antennæ* much longer than the body: *thorax* minutely granulated; a transverse impressed line on the anterior and posterior margin: *elytra* very minutely granulated, and with numerous, irregularly placed, rather distant, profound punctures; tip sim-

ple: *anterior thighs* laterally arcuated, their *tibiæ* perpendicularly arcuated.

Length $\frac{3}{16}$ of an inch.

The anterior thighs and tibiæ are very obviously arcuated.

3. S. *fuscipes*. Hairy, black; thorax with two black vittæ; feet rufous.

Saperda fuscipes, Melsh. Catal.

Body with rather long cinereous hair, punctured: *head* not indented between the antennæ: *labrum* testaceous: *thorax* as long as broad, irregularly and deeply punctured; two longitudina lblack vittæ, occasioned by the complete denudation of the parts: *elytra* with numerous, close-set, irregularly disposed, deeply impressed punctures; at tip rounded: *feet* dull rufous.

Length $\frac{2}{9}$ of an inch.

4. S. 3-*lineata*. Densely covered with short prostrate hairs; antennæ naked, black.

Saperda cinera, } Melsh. Catal.
S. 3-*lineata*, }

Body densely clothed, with short, prostrate, greenish-cinereous hairs: *head* a little tinged with yellowish, with a longitudinal line: *antennæ* quite naked and black: *thorax* tinged with a little yellowish, breadth hardly exceeding the length; a longitudinal black line before the middle: *elytra* immaculate, rather acutely terminated.

Length $\frac{2}{9}$ of an inch.

5. S. *vestita* Very hairy; brownish, varied with grayish; antennæ as long as the body.

Body in every part with numerous long erect hairs, and shorter ones between them; numerous punctures placed irregularly: *head* not indented: *labrum* piceous: *thorax* with a short tubercle on each side: *elytra* rounded at tip.

Length less than $\frac{1}{4}$ of an inch.

This species might perhaps be referred to the genus LAMIA.

6. S. *obliqua.* Elytra with four oblique, elevated lines.

Body yellowish-brown, or pale ferruginous: *head* with an impressed line; a broad fuscous line behind each eye: *antennæ* rather longer than the body, gray, incisures fuscous; first joint rather thick, hairy, fuscous: *thorax* cylindrical, with four fuscous vittæ: *elytra* with numerous, subinequal, irregularly disposed punctures; four elevated, obtuse, parallel, oblique lines, commencing at the exterior submargin, and proceeding backward to the suture, the anterior originating on the humerus; tip mucronate.

Length $\frac{3}{7}$ of an inch.

This interesting species was brought by Mr. Thomas Nuttall from Missouri.

STENOCORUS, *Fabr.*

1. S. *rigidus.* Ferruginous; antennæ robust, spinous beneath.

Body rather slender, ferruginous, with very short hairs: *head*, space between the antennæ more elevated; a longitudinal impressed line: *mandibles* at

tip black: *antennæ* very robust, hairy, a little longer than the body; with numerous spines beneath, particularly on the third or fourth basal joints: *thorax* rounded, a little narrower before, widest behind the middle: *elytra* very pale ferruginous; without any striæ or punctures, instead of which, are very slight depressions, furnishing very short hairs; on the middle of each elytron is a longitudinal obvious nervure; tip acutely rounded: *thighs*, anterior ones more robust than the posterior pairs.

Length more than $\frac{3}{7}$ of an inch.

The spines on the inferior surface of the antennæ, are not confined to the tips of the joints, as in some species, but occupy the surface from base to tip; they are obsolete on the first, second, and terminal joints. The species is rare.

2. S. *quadrigeminatus*. Pale brown; elytra each with two geminate spots; basal ones equal.

Body entirely pale yellowish-brown: *antennæ* hardly more obviously hairy on the basal joints than on the others: *thorax* with two black tubercles above, rather before the middle, placed transversely, and a short spine each side on the middle of the length of the thorax: *elytra* rather paler than the thorax; each with two double, somewhat elevated bright yellow, abbreviated very short lines; the two members of the basal spot equal, the other spot is placed on the middle, and its inner member is shorter than the exterior one; tip two spined, the exterior spine longest: *intermediate* and *posterior thighs* two spined at tip, the inner spine rather longest.

Length $\frac{9}{10}$ of an inch.

This insect is not uncommon. It is related to S. 4-*maculatus*, Fabr., S. *maculosus*, Fabr., S. *didymus*, Oliv., all of South America, and S. *stigma*, Oliv., of Cuba. It differs from the first, to which it is more closely related than to either, by the equality of the two members of the basal double spot of the elytra, and by having only two tubercles on the back of the thorax; from the *maculosus* it may be distinguished by its greater size and simple pale colour; from *didymus* by its smaller size, and not having the third and fourth joints of the antennæ more hairy than the other joints; from *stigma* by having the basal spot of the elytra double.

Clytus, *Fabr.*

1. C. *confusus*. Black, with spots of yellowish-white; feet rufous, tarsi and knees black.

Head covered with prostrate, short yellowish hair, excepting a longitudinal line on the vertex: *antennæ* two-thirds the length of the body, black: *thorax* covered with hair, excepting a dilated dorsal vitta, and a narrow, obsolete longitudinal line each side: *scutel* covered with white hair: *elytra* with irregular, inequal spots of short yellowish-white hair; of these spots there is in many specimens, a series at the suture, another on the middle, and a third on the exterior submargin; but in other specimens the series are obsolete, and in some, many of the spots are con-

fluent; tip truncate, emarginate: *wings* blackish: *feet* rufous; *knees, tarsi,* and *tip of the tibiæ* black.

Length about $\frac{7}{20}$ of an inch.

I obtained a small individual several years since in this state, and my brother B. Say took a specimen near Pleasant Mills, New Jersey, and I subsequently obtained another in the N. W. Territory.

2. C. *annosus.* Black, with short gray hair; a triangular carina between the eyes.

Body black, covered with short, gray, prostrate hair: *head* with a grooved prominence between the eyes, terminating in a short carina: *antennæ* but little longer than the thorax: *thorax* with a naked dorsal vitta: *elytra* with the hair more densely arranged in some parts, so as to exhibit the appearance of small spots, which are arranged in two bands, in each of which are two spots each side, the second band is on the middle; near the tip are one or two common spots; tip entire.

Length nearly $\frac{1}{2}$ of an inch.

I received this species from Mr. T. Nuttall, who brought it from Missouri.

Callidium, *Fabr.*

C. *cucuji-forme.* Pale yellowish; thorax a little contracted in the middle.

Callidium cucuiiforme, Melsh. Catal.

Body depressed:

Head with a slight rufous tinge: *antennæ* rather shorter than the body, tinged with rufous: *thorax*

longer than broad, obtusely contracted each side, rather before the middle: *elytra* irregularly punctured, without elevated lines: *thighs* dilated: *pectus* with a large discoidal, very slightly indented space on each side.

Length $\frac{3}{10}$ of an inch.

LEPTURA, *Linn. Fabr.*

1. L. *scalaris.* Rufous, sericeous; elytra slender, with sericeous triangles along the suture.

Body elongated, rufous, more or less covered with golden sericeous; impunctured: *head* with a transverse indentation before, and a longitudinal indented line; space behind the eyes prominent: *antennæ* rather more than half the length of the body: *thorax* with a transverse impressed line before, and another behind: *elytra* slender, concavely arcuated on the outer edge behind the middle, rounded at tip, considerably shorter than the abdomen; a darker rounded spot on the middle, and an oblong one behind the middle, so arranged as to exhibit two sutural golden-sericeous triangles on each elytron: *posterior thighs* blackish at tip: *tergum* longitudinally black in the middle: *beneath* with brilliant golden sericeous hair.

Length 1 inch.

For this fine species I am indebted to my friend, Prince Musignano, who obtained it near his summer residence, at Point Breeze, New Jersey. It is much like the CERAMBYX *longipes* of Drury, 1 pl. 37 fig.

4, but the thighs are not spinous at tip, as in that species.

2. L. *nigrella*. Blackish-brown; thorax cylindrical.

Leptura nigra, Melsh. Catal.

Body punctured, somewhat pubescent: *head* with confluent, small punctures; those of the nasus and labrum sparse: *antennæ* more than two thirds the length of the body: *thorax* cylindrical, very slightly wider behind, punctured like the head; an obtuse, lightly impressed, transverse line on the anterior submargin, and another on the posterior submargin: *elytra* with very obvious, numerous punctures, which are more particularly confluent near the base; tip a little truncated obliquely: *beneath* dull silvery sericeous.

Length nearly $\frac{7}{10}$ of an inch.

I received this species from Dr. J. F. Melsheimer, under the name which I have here given; that of *nigra* being preoccupied. The thorax approaches the form of that of a SAPERDA.

3. L. *pubera*. Black; thorax sub-globular; elytra truncate at tip.

Leptura pubera, Melsh. Catal.

Body punctured, somewhat pubescent: *head* with dense small punctures: *antennæ* rather more than two thirds the length of the body: *thorax* convex, with rather large punctures: *elytra* with numerous, rather large punctures, at tip transversely a little truncated: *beneath* dull silvery sericeous.

Length $\frac{3}{10}$ of an inch.

This is very different from the preceding in the form of the thorax, as well as in colour, &c.

4. L. *cærulea.* Slender; bluish; feet pale rufous. *Rhagium rufipes*, Melsh. Catal.

Body slender, punctured: *head* transversely much indented near the nasus: *palpi* pale rufous: *antennæ* situated on a tubercle: *thorax* with a small tubercle, rather behind the middle, on each side; an anterior and posterior, transverse, impressed line: *elytra* acutely rounded at tip: *feet* pale rufous: *beneath* dull plumbeous.

Length rather more than $\frac{1}{2}$ an inch.

A very pretty little insect, belonging to the genus Toxotus, of Megerle. The name *rufipes*, is preoccupied in this genus.

5. L. *sphæricollis.* Black; thorax contracted on the posterior margin; feet varied with yellowish.

Body with very short hairs, somewhat sericeous: *labrum* and anterior margin of the *nasus* yellowish: *mandibles* and *palpi* yellowish, at tip piceous: *thorax* globular in the middle; anterior and posterior margins much contracted: *elytra* punctured; the punctures large at base, small towards the tip of the elytra: *feet* yellowish; *thighs* at tip, and *tibiæ* at base, blackish.

Length nearly $\frac{1}{3}$ of an inch.

I received this insect from Mr. Charles Pickering, of Salem, Massachusetts, to whom I returned for it the name of L. *pubera*; but on a strict comparison, I find that by the form of the thorax, it is quite different from that species, and much more closely related

to the L. *ruficollis*, nobis, from which it differs chiefly in the colour of the thorax.

Orsodacna, *Latr.*

1. O. *tripla.* Rufous; feet yellowish; thorax dentate each side.

Crioceres asparagi, Melsh. Catal.

Body rufous, punctured: *head* coarsely and confluently punctured; before the antennæ yellow: *antennæ* with the basal joints yellow at their tips: *mandibles* black at tip: *thorax* widest in the middle, with coarse, confluent punctures; lateral edge with about six unequal denticulations, of which the anterior one is yellowish, and forms the anterior angle: *elytra* with tripple series of rather large impressed punctures, and alternate elevated lines: *feet* yellow; *tarsi* rufous: *venter* yellow in the middle.

Length from $\frac{1}{3}$ to $\frac{1}{4}$ of an inch.

Var. a. Elytra pale; abdomen yellow.

Crioceres flavida, Melsh. Catal.

Seems to belong to the genus Auchenia of Megerle; but I have not seen the characters of that genus.

2. O. *hepatica.* Head black; thorax rufous; elytra brownish.

Head black: *palpi* and *base of the antennæ* yellowish: *thorax* yellowish-rufous, larger before the middle, with scattered punctures; anterior angles rounded: *elytra* liver colour, with numerous, irregularly disposed, rather large punctures: *beneath* piceous: *feet* yellowish.

Length less than $\frac{1}{4}$ of an inch.

This species was brought from the Mississippi region, by Mr. Thomas Nuttall.

Donacia, *Fabr.*

1. D. *quadricollis*. Brassy green; thorax with the impressed line and lateral tubercle, obsolete.

Head dull green bronze; frontal line very profoundly impressed; no distinct tubercles; lateral lines very distinct and definite: *antennæ* nearly black; second joint but little shorter than the third: *thorax* quadrate, very slightly narrower at base; densely and confluently punctured; the longitudinal line, as well as the lateral tubercles, indistinct; colour brassy-green: *elytra* a little inequal near the suture; slightly truncated, and not decurved at tip; with regular distinct striæ of punctures: *beneath* dusky silvery gray: *feet* dull rufous; posterior thighs with a small tooth; all the thighs a little dusky above.

Length less than $\frac{2}{3}$ of an inch.

This species is nearly equal in size to the *palmata*, Oliv., which is the D. *anea* of Melsh. Catal.; but that common insect has the dorsal thoracic line and lateral tubercles well defined, the third joint of the antennæ nearly double the length of the second, and the tips of the elytra more profoundly emarginated; the thorax is moreover transverse. I may observe, with respect to the *palmata*, that the male only has the anterior tarsi dilated.

2. D. *metallica.* Cupreous; antennæ and feet rufous; 2nd and 3d joints of the former equal.

Donacia metallica, Melsh. Catal.

Body above cupreous, polished: *head* densely punctured, nearly opaque, with an acute impressed line transversely indented in the middle; tubercles and lateral lines none: *antennæ* pale rufous; rather short; less than half the length of the body; with short joints, the second and third equal, the fourth nearly equal: *thorax* convex, gradually a little narrowed to the base, decidedly longer than broad, very highly polished, with very distinct scattered punctures, an impressed acute line; lateral tubercle obtuse, obvious; small tubercle of the anterior angle distinct from the large tubercle, subacute; posterior submargin indented: *elytra,* striæ with impressed punctures; a single obsolete indentation passes from the humerus to the suture before the middle; tip much decurved, rounded: *beneath* greenish silvery: *feet* pale rufous: *posterior* thighs with a broad prominent angle.

Length about $\frac{3}{10}$ of an inch.

Var. a. Antennæ and feet dusky.

Var. b. Green; antennæ and feet obscure rufous.

The thorax is more convex and polished than in most other species. I have received a specimen from Dr. T. W. Harris, of Milton, Massachusetts.

3. D. *rufa.* Dull metallic rufous; front destitute of lateral impressed lines.

Body totally dull rufous, with a metallic gloss, particularly on the elytra: *head* dusky, almost opaque, with much crowded, very small punctures; no ap-

pearance of tubercles; a very distinct impressed frontal line extending down between the antennæ; no appearance of impressed lines near the eyes: *antennæ* somewhat paler than the body, and about half the length of the body; third joint distinctly longer than the second: *thorax* longer than broad, minutely punctured; longitudinal line very distinct, deeply impressed; a transverse impressed line on the posterior submargin; lateral tubercles rather prominent, obtuse; tubercle of the anterior angle distinct from the large tubercle, acute: *elytra* hardly obviously inequal near the suture; with striæ of punctures; tip decurved, almost truncated, or obtusely rounded: *beneath*, in a particular light, dull silvery sericeous: *feet* rufous.

Length more than $\frac{3}{10}$ of an inch.

I found this species in company with *palmata* on the bank of the Schuylkill river.

(TO BE CONTINUED.)

Description of a Land Tortoise, from the Gallapagos Islands, commonly known as the "Elephant Tortoise." By RICHARD HARLAN, M. D. *&c. Read September 5*, 1826.

TESTUDO *elephantopus*, (nobis.)

Elephant Tortoise, of Mariners, vide "Porter's Journal," vol. i. p. 161. *Gallapagos Tortoise*, of others.

CHAR.—Shell reflected over the head, and over the posterior extremities: all the back-plates irregu-

larly pentagonal, with elevated concentric ridges, and with a smooth space in the centre: tail short, thick at base, without a corneous tip.*

Dimensions.	Ft.	inches.	tenths.
Length of the back-plate, following its curvature,..	1	9	6
Breadth of the back-plate, following its curvature,.	1	10	6
Vertical diameter, or height of the animal,.....	0	9	0
Lateral diameter,.....	1	2	0
Circumference of the body,.....	3	0	0
Length of the posterior extremity,.....	0	8	0
Length of the anterior extremity,.....	0	9	0
Length of the neck and head,.....	1	0	0
Length of the head,.....	0	4	0
Breadth of the head,.....	0	2	5
Length of the tail,.....	0	3	5
Breadth of the tail at base,.....	0	2	0

Description.—General colour of the animal, plumbeous: the shell appears somewhat oval, though on measurement is found to be nearly as long as broad. The marginal plates are reflected upwards anteriorly, and also over the posterior extremities, in order to afford greater freedom in the motions of the head and extremities. The posterior marginal plate is bent abruptly downwards: the *head* is very small; and like the neck, extremities, &c. is enveloped in a rugous, lax, and granulated covering; the skin being produced into flattened protuberances, somewhat corneous in structure: these protuberances are larger and more dense about the joints, and other parts of the body most subjected to pressure; two of these larger tubercles are found on each side of the elbow.

* Testa supra collum et crura reflexa: scutellis disci pentagonis, striisque elevatis, concentricis, cum læve macula centrale. Cauda brevis, crassa ad basim, sine apice cornuto.

Jaws slightly serrated; the superior emarginate at tip, with two small dentiform processes, which are sometimes destroyed: the inferior jaw closing within the upper, like scissors. There are two palatine ridges within the upper jaw; the inner one smooth, the outer serrated: one serrated ridge in the lower jaw: these ridges occupy the place of teeth; the inferior ridge, closing between the two superior, forms, with the two mandibles, powerful organs of mastication. Under jaw, and upper part of the throat, marked with yellow blotches. *Tail* short and exceedingly thick at base, abruptly terminating without a corneous tip: vent opening about one inch from the tip.

Marginal scuta, twenty-three in number; eleven on each half of the shell, and a single one posteriorly; the six anterior, elevated or reflected, and crenated at their sutures: six posterior, (with the exception of the terminal one,) elevated, slightly reversed, and crenated at their sutures. *Vertebral plates,* five in number, not carinated: *costal plates,* four on each side: all the plates of the shell of an irregular pentagonal form, displaying elevated, concentric ridges, with obsolete radiating lines, dividing each plate into different compartments; a smooth space being left in the centre. *Sternum* composed of sixteen unequal plates, two anterior very small; next come two larger pentagonal plates; then follow two narrow plates, with a small one at their anterior and terminal borders, which, with two similar ones at the posterior and terminal borders of the two largest central plates,

constitute the suture between the back-plate and sternum: posterior to the large central plates, are two of a medium size, followed by two small terminal plates. The anterior extremity of the sternum projecting forwards between the fore legs, as in the Gopher, (T. *polyphemus*, Lin.) though not projecting beyond the anterior margin of the back plate, as in the latter species.

Toes not fissile, covered with the thick shagreened skin of the legs, like those parts in the Elephant. Five claws before, four behind, broad, flat, and blunt, the longest measuring $\frac{3}{4}$ of an inch.

Observations.—The animal which is the subject of the present observations, is no doubt young, although larger than a similar species which lately lived for several months in the Philadelphia Museum. If we are permitted to judge from the shortness of the tail, and still less certain sign, the planeness of the sternum, our specimen is a female. Its weight is forty pounds.

The only species with which there appears any probability of confounding the present, is the T. *indica* of Vosmaer; a description of which, with an indifferent figure, may be seen in Shoepff, (Hist. Test. p. 103, tab. xxii. fig. B.) On comparing these two species together, the distinctive characters of the T. *elephantopus* will be found sufficiently clear; differing widely in the number of plates, both of the sternum and shell, as well as in other essential particulars.

That the T. *indica* of Perrault, is specifically dis-

tinct from the animal of the same name described by Vosmaer, we have no doubt; and think that a reference to the figures and descriptions afforded us by Shoepff will satisfy the most sceptical. On comparing the present specimen with the T. *indica* of Perrault, an individual of which lived many months in the Philadelphia Museum, we were enabled to detect still less analogy.*

The present individual displays great docility of temper, never attempting to bite, except when much irritated; the force of its jaws is very great. Some idea may be formed of the muscular power of this animal, from the fact, that a large man seated on its back, appeared to occasion no great inconvenience to its progressive motion. During warm weather, in our climate, they are enormous gluttons; and in a state of nature, are exclusively phytivorous, eating without much discrimination, succulent vegetables of all descriptions; where the food is dryer, they drink large quantities of water: like our Box turtle, (CISTUDA *clausa*,) they are naturally timid, seeking retirement and shade, displaying equal impatience when exposed to the rays of the sun, or to a shower of rain.

* As copies of Shoepff's work ("Historia testudinum, iconibus illustrata, 1792,") are rare in this country, we subjoin a description by Vosmaer, of his T. *indica*. "Testa supra collum reflexa, disci scutellis anterioribus lævibus; margine crenato.

"Ex promontorio Bonæ spei testa hæc, absque ulla ulteriori notitia, ad nos pervenit. Ad testudines terrestres eam pertinere, primo intuitu adparet. Scuti longitudo ped. 2. poll. 8. Latitudo ped. 1. poll. 6½. Altitudo ped. 1. poll. 2. Discus scutelli xiii, margo xxv, habet; anteriora nempe 6, postica 9, lateralia utrinque 4. Sterni scutella duo media majora, his anteriora 5, posteriora 7, horum duo, scutellis marginalibus proxime adjacent, reliquis minora sunt. Color scuti nigricans, sterni cinereus."

Thus much of their habits we are enabled to detail from personal observation; a much more extensive account of these interesting animals may be found in "Porter's Journal."*

If there be not some mistake, the enormous size to which they are said to attain in some instances, is truly astonishing; the author above quoted, states, that some individuals weighed more than 300 lbs., and that others measured five feet in length; he however states his conviction of the existence of two distinct species, as inhabiting the different Gallapagos Islands.

"Those of James' Island appear to be a species entirely distinct from those of Hood's and Charles' islands; the form of the shell of the latter is elongated, turning up forward in the manner of a Spanish saddle, of a brown colour, and of considerable thickness; they are very disagreeable to the sight, but far superior to those of James' island in point of fatness, and their livers are considered the greatest delicacy. Those of James' island are round, plump, and black as ebony; some of them handsome to the eye, but their liver is black, hard when cooked, and the flesh altogether not so esteemed as the others.

"The shells of those of James' island are sometimes remarkably thin, and easily broken, but more particularly as they become advanced in age; for then,

* Vid. Journal of a cruise made to the Pacific Ocean, by Capt. David Porter, in the U. S. frigate Essex, in the years 1812, 13 and 14, vol. 1. pp. 161, 165, 171, 173, 227, 221.

whether owing to the injuries they receive from their repeated falls in ascending and descending the mountains, or otherwise, their shells become very rough, and peel off in large scales, which renders them very thin, and easily broken.

Nothing, continues Capt. Porter, can be more disagreeable or clumsy than they are in external appearance; their motion resembles strongly that of the Elephant; their gait slow, steady, and heavy; they carry their body about a foot from the ground, and their legs and feet bear no slight resemblance to the animal to which they are likened; but hideous and disgusting as is their appearance, no animal can possibly afford a more wholesome, luscious, and delicate food; the finest green turtle is no more to be compared to them in point of excellence, than the coarsest beef to the finest veal; these animals are so fat, as to require neither butter nor lard to cook them; and this fat does not possess that cloying quality, common to that of most other animals. But what seems to be most remarkable in this animal, is the length of time it can exist without food. It has been well ascertained, that when piled away among the casks of a ship, they have lived eighteen months; and when killed at that time, were found to have suffered no diminution of fatness. They carry with them a constant supply of water in a bag at the root of the neck; and on tasting that found in those we killed on board, it proved perfectly fresh and sweet."

Capt. Porter asserts, that these animals are entirely destitute of hearing; as the loudest noise, even that

of a gun, did not seem to alarm them in the slightest degree; and at night, or in the dark, they appear totally blind. In one instance, they had to regret that numbers of these animals had been thrown overboard by the crews of the vessels, previous to their capture, to clear them for action; but a few days afterwards, were so fortunate as to find themselves surrounded by about fifty of them, which were picked up, as they had been lying in the same place where they had been thrown, incapable of any exertion in that element, except stretching out their long necks. On making the experiment, we have found this animal specifically lighter than even fresh water.

The great profusion in which the Gallapagos tortoises are found, as well as their average size, may be estimated by the following extract from the journal above quoted. "Four boats were despatched every morning, to bring in a stock of tortoises, and returned at night, bringing with them from twenty to thirty each, averaging about 60lbs.; and in four days, we had as many as we could conveniently stow. They were piled up on the quarter deck for a few days, in order that they might have time to discharge the contents of their intestines, which are considerable; after which, they were stowed away below, like any other provision. They require no food or water for a year, nor is any further attention to them necessary, than that their shells should be preserved unbroken."

The temperature of the air of the Gallapagos islands, varies from 72° to 75°; that of the blood of the tortoise is always 62°. The eggs of the tortoise

are perfectly round, white, and two and a half inches in diameter.* The islands are situated beneath the equator, between 85° and 90° of west longitude.

The present specimen is living in the possession of Mr. Whitton Evans. For the drawings which accompany the description, we are indebted to Dr. S. G. Morton.†

* The eggs of the fresh water tortoises, (Emys,) are oblong-oval, and of a white colour.

† Since writing the above, *Dr. Dekay* has obligingly communicated to us the following note, containing his observations on the T. *indica;* two specimens of which from the Isle of France, one adult, the other young, are contained in the cabinet of the Baltimore Academy of Sciences.

"T. *indica.* Marginal plates 24 to 25; anterior marginal plate very small and unequal in the young; all deeply furrowed by subquadrate concentric lines, with four other impressed lines radiating from the centre. The dorsal plates elevated in the centre; in the adult or old specimen, these lines disappear, but the bases of the dorsal plates remain, and give an undulating appearance to the dorsal disks. This same appearance is observed in the *Gallapagos* more evidently. Length of the Buckler, (in the adult) 26, breadth 17, height 13, anterior feet 11, tail 2½, head 11 inches.

The separation of the plates very deep in the "*indica*;" in the "*Gallapagos*" these are simple, slight furrows. In the "*Indica*," the anterior plates beneath are deeply emarginate, and this emargination increases with age; in which circumstances it also differs from the "*Gallapagos tortoise.*"

"*Gallapagos tortoise*," (full grown.) Marginal plates 23 in number.

Dimensions.—Breadth 19½ inches, length 25 inches, height 13 inches. No central marginal plate anteriorly; the costal plates descending laterally, to unite with the marginal plates, form a deep concavity, which does not exist in the T. *indica;* in the adult specimen of which the post-marginal plates are turned up, in which respect again it differs from the "Gallapagos tortoise."

Descriptions of new species of COLEOPTEROUS INSECTS *inhabiting the United States. By* THOMAS SAY. *Read January* 18, 1825.

(Concluded from page 284.)

4. D. *pusilla.* Green; elytra brassy; tibiæ and tarsi rufous; second and third joints of the antennæ equal.

Head brassy-green, very densely and confluently punctured; a well impressed frontal line; lateral lines none; no appearance of frontal tubercles: *antennæ* short, much less than half the length of the body; second and third joints equal, fourth joint hardly longer; joints dull rufous, blackish at tip: *thorax* green, a little tinged with brassy, longer than broad, as densely punctured as the head; middle of the anterior edge a little elevated; longitudinal line none; lateral tubercles obvious: *elytra* brassy-green, a little tinged with cupreous; with striæ of punctures; three longitudinal indentations near the suture, of which the anterior one is widest and deepest, with a slight impressed line extending obliquely to the base; tip decurved and rounded: *beneath* green, tinged with brassy: *feet* rufous: *thighs* at tip brassy-green, posterior pair with a prominent angle beneath.

Length rather more than $\frac{1}{4}$ of an inch.

The smallest species I have seen; it occurs in the middle states, and I have also received a specimen from Dr. T. W. Harris, of Milton, Massachusetts.

5. D. *confluenta.* Brassy, tinged with cupreous; head with two tubercles; second joint of the antennæ shortest; elytra truncate at tip.

Head rather obscure; a profound frontal line, on each side of which is an oblong tubercle; punctures confluent, small: *antennæ* not quite half the length of the body, fuscous, first joint metallic polished, third joint distinctly longer than the second: *thorax* nearly square, a little narrowed to the base, with very distinct confluent punctures, and a slightly impressed dorsal line; lateral tubercles not prominent; anterior tubercles not distinct: *scutel* cinereous: *elytra* with punctured striæ; two subsutural impressed spaces, of which the exterior extends obliquely to the middle of the base; tip hardly decurved, truncated: *posterior thighs* with a small angle beneath.

Length less than $\frac{3}{10}$ of an inch.

I have found this insect in Pennsylvania, and also in Missouri. In some specimens, lateral impressed spaces of the elytra are very distinct, but in general they are not perceptible.

Lema, *Fabr.*

L. *melanocephala.* Above rufo-testaceous; head and all beneath, black.

Head deep black, inequal: *thorax* rufo-testaceous, polished, abruptly very much contracted on the middle of each side, presenting the appearance of a profound vertical groove in that part: *elytra* rufo-testaceous, polished, with almost regular series of impressed punctures: *beneath* black, immaculate.

Length nearly $\frac{3}{10}$ of an inch.

Resembles the *trilineata,* Oliv. in form, but it is

readily distinguished from that well marked insect. It inhabits the N. W. Territory, where it was found by Major Long's party. I also received specimens from Dr. T. W. Harris.

Cassida, *Fabr.*

C. *bivittata.* Yellowish; elytra with two lines and suture black.

Cassida bivittata, Melsh. Catal.

Body sub-orbicular, yellowish, tinged with rufous; margin all round paler: *elytra* with regular striæ of impressed punctures, those on the margin much larger and blackish; two black vittæ on the middle, of which the exterior one is a little undulated, and the inner one rather shorter; suture black: *beneath* piceous.

Length $\frac{1}{7}$ of an inch.

Eumolpus, *Fabr.*

1. E. *pini.* Brassy, with short whitish hair; antennæ obscure rufous.

Body rather dark brassy, polished, punctured, with short whitish hair: *head* with an impressed longitudinal line on the front: *antennæ* and *palpi* dull rufous: *thorax,* as well as the head, slightly tinged with cupreous: *scutel* cupreous: *elytra* destitute of striæ or lines: *beneath* reddish-brassy, more densely covered with the whitish hair than the superior surface: *feet* not so thickly hairy, dark rufous.

Length $\frac{7}{50}$ of an inch.

I received this insect from Dr. J. F. Melsheimer,

under the name which I have adopted; he informed me that its favourite food is the different species of Pinus.

2. E. *barbatus*. Brassy, with short ferruginous hair; antennæ obscure rufous.

Eumolpus barbatus, Melsh. Catal.

Body dark brassy; tinged, particularly on the head and thorax, with cupreous; somewhat polished; punctured, and covered with short ferruginous hair: *head* with a longitudinal, darker, slightly impressed line: *antennæ* and *palpi* dull rufous: *elytra* destitute of striæ or lines: *beneath* reddish-brassy, covered with whitish hair: *feet* very dark rufous.

Length nearly $\frac{3}{15}$ of an inch.

Resembles the preceding, but is always smaller, and it may be at once distinguished from it by the colour of the hair, which on the superior surface is decidedly ferruginous.

Chrysomela, *Linn. Latr.*

1. C. *cæruleipennis*. Blue polished; thorax and feet rufous; antennæ and tarsi black.

Head punctured, blue-black: *antennæ* black, basal joint rufous beneath and at tip: *thorax* bright rufous, with numerous punctures; an obsolete transverse dusky line on the anterior submargin, and another on the posterior submargin: *scutel* blue: *elytra* polished blue, numerously punctured, the punctures irregularly situated, sometimes confluent: *beneath* blackish-blue: *feet* pale rufous; *tarsi* black: *anus* rufous.

Length more than $\frac{3}{20}$ of an inch.

A beautiful and rare species, an inhabitant of the North-West Territory. I received a specimen from Mr. John P. Brace of Litchfield, and another from Dr. T. W. Harris.

2. C. *spiræa*. Green; elytra pale yellow, with green spots, and a common sutural line trifid at base.

Head dark green, tinged with brassy: *antennæ* and *palpi* rufous: *thorax* dark green, tinged with brassy: *elytra* pale yellow, sometimes tinged with rufous; each with about seventeen unequal small green spots; a larger lunate one originating on the humerus; a common green sutural line, which sends off a lateral short branch on each side near the base: *beneath* blackish-green: *feet* rufous.

Length $\frac{1}{4}$ of an inch.

I received several specimens from Dr. Jno. F. Melsheimer, under the name which I have adopted. He informed me that he found them on the SPIRÆA *opulifolia*, Muhl. Catal. I have also found them near Philadelphia, and in Missouri. It is very closely allied to the C. *philadelphica*, Fabr., but is smaller, and the sutural line is always common; whereas in the *philadelphica* there is a slender subsutural line on each elytron always insulated from the suture throughout its whole length.

It has also a general similarity to the *multipunctata*, nobis, but that species is larger and more oblong, the elytral spots more numerous, and arranged in a different manner, and the head and thorax are of a different colour.

Helodes, *Fabr.*

H. *trivittata.* Blue-black; margin of the thorax and two elytral vittæ yellow.

Body punctured: *head* entirely blue-black, with an impressed frontal line divaricated before: *thorax* with somewhat sparse punctures; lateral margins yellow, this colour being contracted in the middle on the inner side: *elytra* with punctured striæ; sutural margin yellow; vitta on the middle not reaching the tip, and exterior edge blue-black: *feet* immaculate: *venter* with the caudal segment margined behind with dull yellowish.

Length more than $\frac{1}{7}$ of an inch.

This insect was sent me by Mr. Charles Pickering, of Salem. It is so very closely allied to the H. *phellandrii*, Linn., in size, form, description, and disposition of colours, that I have hesitated to consider it as distinct. The chief difference which I have been able to discover, consists in the circumstance, that the feet in the *phellandrii* are partly yellow, whilst those of the present species are perfectly immaculate. Still it is highly possible that it may prove to be a variety of that well known insect.

Galleruca, *Fabr.*

1. G. *rufosanguinea.* Entirely rufo-sanguineous, punctured.

Head punctured, with an impressed frontal line passing down between the antennæ, and more dilated

above; an indentation each side near the eyes; *antennæ* black, dull rufous at base: *eyes* deep black: *thorax* with rather large numerous punctures, a large indented spot each side, and a dilated longitudinal line in the middle; posterior angles subacute: *scutel* at tip very obtusely rounded, or somewhat truncate: *elytra* with very numerous, profoundly impressed, rather large, irregularly disposed punctures: *wings* blackish: *beneath* hardly paler in colour than the superior surface.

Length rather more than $\frac{1}{4}$ of an inch.

Not uncommon in some situations in the middle states. I have also received it from Dr. T. W. Harris.

2. G. *meraca*. Greenish-black; antennæ and feet yellowish.

Body black, slightly tinged with green: *head* with a few scattered punctures, a longitudinal impressed line, and above the antennæ a transverse one: *antennæ* yellowish: *labrum* and *mouth* yellowish: *thorax* destitute of distinct punctures; lateral edge a little excurved at the posterior angles, which are acute: *elytra* with obsolete irregular punctures: *beneath* black-blue: *venter* a little tinged with cupreous: *feet* yellowish: *thighs* at base blackish: *coxæ* yellowish.

Length more than $\frac{3}{20}$ of an inch.

Attica, *Fabr.*

A. *suturella*. Testaceous; thorax with black spots; elytra with a black sutural edge.

Body punctured, testaceous: *head* tinged with ful-

vous; an impressed frontal line, and two impunctured spots; punctures numerous, dense: *antennæ* black, first joint beneath dull rufous: *thorax* tinged with fulvous, with fuscous spots or characters on the disk; punctures numerous: *scutel* black: *elytra* testaceous, tinged with fulvous on the exterior margin; punctures numerous, crowded; raised line of the suture black, forming a common sutural line, which does not quite reach the apex: *pectus* testaceous, tinged with pale fulvous: *postpectus* black: *feet* black: *posterior thighs* dull rufous beneath: *venter* dull rufous.

Length $\frac{1}{4}$ of an inch.

Very distinct from any other species I have seen.

Tritoma, *Fabr.*

1. T. *unicolor*. Black; elytra striate; tarsi piceous.

Tritoma unicolor, Melsh. Catal.

Body black, polished, minutely punctured: *palpi* yellowish: *antennæ* ferruginous, the club blackish: *thorax* with the punctures scattered on the disk, dense each side: *elytra* with regular series of impressed punctures, obsolete towards the tip: *tibiæ* all dilated and angular near the tip: *tarsi* pale piceous.

Length nearly $\frac{1}{5}$ of an inch.

2. T. *angulatum*. Black; beneath piceous; feet yellowish.

Tritoma rufipes, *piceum*, } Melsh. Catal.

Body black, polished, punctures obsolete: *head* piceous: *palpi* ferruginous: *antennæ* ferruginous, the

club blackish: *elytra* with regular series of impressed punctures: *beneath* piceous: *feet* yellowish: *tibiæ* dilated and angular near the tip.

Length nearly $\frac{3}{20}$ of an inch.

Resembles the preceding, but differs from it both in size and colouring.

3. T. *pulchrum.* Black; elytra rufous on the basal half.

Tritoma pulchrum, Melsh. Catal.

Body black, punctured, polished: *antennæ* ferruginous; club dark piceous: *palpi* yellowish: *elytra* rufous at base, deep black at tip, the line of division extending from behind the sutural middle, in an oblique direction rectilinearly towards the humeral angle, behind which it turns abruptly outward to the exterior edge; striæ of punctures regular: *tibiæ* hardly dilated at tip: *tarsi* ferruginous.

Length $\frac{3}{20}$ of an inch, nearly.

The TRIPLAX *sanguinipennis* and *biguttata* of vol. 4. p. 89, may, perhaps, with greater propriety be referred to the present genus.

COCCINELLA, *Linn.*

1. C. *pullata.* Pale testaceous; elytra with a yellow lateral margin, in which is a black spot.

Head yellow: *antennæ* blackish at tip: *labrum* piceous at base: *thorax* with a pale testaceous disk; a narrow yellow anterior margin; a dilated, oval, yellow lateral margin, separated from the colour of the disk by a black line, and including an insulated

black spot: *elytra* pale testaceous, with a dull yellowish lateral margin: *beneath* blackish.

Length from more than $\frac{1}{4}$ of an inch to $\frac{3}{10}$.

I found an individual several years since, cast up by the waves on the eastern coast of Virginia, and I obtained another when in Florida with Mr. Maclure.

2. C. *binotata.* Black; lateral margin of the thorax and head yellow; each elytron with a rufous spot.

Coccinella binotata, Melsh. Catal.

Body rounded-oval, convex, punctured, black, polished: *head* pale yellow: *labrum* and transverse line on the vertex piceous: *thorax* with a yellow lateral margin extending for a short distance on the anterior margin; anterior margin with an obsolete yellowish line interrupted in the middle: *elytron* each with a rufous, orbicular, central spot.

Length less than $\frac{3}{20}$ of an inch.

This species agrees with the Fabrician description of the C. *oculata,* but it is a widely different species.

3. C. *normata.* Black; elytron each with a rufous spot.

C. *bipustulata,* Melsh. Catal.

Body rounded-oval, convex, black, polished, punctured: *head* and *thorax* immaculate: *elytron* each with a central, orbicular, rufous spot.

Length less than $\frac{3}{20}$ of an inch.

This is very similar to the preceding species, but it is altogether destitute of any spot on the head and thorax. It is quite different in form from the C. *bipustulata,* Fabr.

4. C. *proba*. Black; a lateral spot on the thorax, and three on each elytron, yellowish.

Body rounded-oval, black, punctured, convex: *head* immaculate: *antennæ* honey yellow: *thorax* with a large, oval, pale yellow spot on each lateral margin: *elytron* each with a rather large, yellowish, orbicular spot somewhat before the middle, two smaller orbicular yellow spots placed transversely beyond the middle, and nearer the exterior and sutural edges than to each other.

Length nearly $\frac{1}{10}$ of an inch.

Eumorphus, *Fabr.*

1. E. *distinctus*. Rufous; elytra with a common vitta, and another on the exterior margin, black.

Endomycleus distinctus, Melsh. Catal.

Body bright rufo-sanguineous: *antennæ* dark piceous, terminal joint paler: *thorax* with an impressed line on the lateral sub-margin; disk somewhat darker than the lateral margin: *elytra* with a rather broad, common, black vitta, commencing at the scutel, becoming a little narrower towards the tip, and abbreviated before the tip of the suture; an elongated black spot on the middle of the lateral submargin, and occupying more than one half of its length: *beneath* immaculate.

Length less than $\frac{1}{4}$ of an inch.

A fine species, by no means common.

2. E. *angulatus*. Dark rufous, margin and feet paler.

Endomycleus limbatus, Melsh. Catal.

Body dark rufous or piceous: *thorax* a little convex; an impressed line on the lateral submargin; lateral margin paler than the disk: *elytra* a little convex, with a paler exterior margin, sometimes obsoletely so on its middle, the paleness being then confined to the humerus and tip: *feet* pale rufous: *anterior tibiæ* with a prominent angle on the inner middle.

Length rather more than $\frac{1}{3}$ of an inch.

Smaller and somewhat more convex than the preceding species. It is altogether different from the *limbatus*, Oliv. of Cayenne.

Lycoperdina, *Latr.*

L. *vestita.* Yellowish, hairy; disk of the elytra blackish.

Body oval, covered with rather short hairs; yellowish: *antennæ*, the six terminal joints piceous: *thorax* with the disk somewhat darker; lateral margin with an impressed line; lateral submargin with an abbreviated impressed line at base: *elytra* dark piceous; basal, sutural and exterior margins yellowish: *beneath* immaculate.

Length more than $\frac{3}{20}$ of an inch.

I have found this species on the Oak in June.

Observations on the Geology, Mineralogy, &c. of the Perkiomen Lead Mine, in Pennsylvania. By JOHN P. WETHERILL. *Read December* 19, 1826.

GEOLOGICAL REMARKS.

The Lead Mine of Perkiomen is situated in Montgomery county, and on Perkiomen creek: it is twenty-three miles north-west of Philadelphia, and about five from Norristown. The county in its immediate vicinity is gently undulated, and the soil is remarkably fertile.

The rocks in this vicinity are referred by our illustrious countryman Mr. Maclure, and by other geologists, to the **Old Red Sandstone* formation. This opinion, however, is disputed by Mr. Finch, who, in a paper recently published in Silliman's Journal, observes that they "may be classed with the *Second*, or *Variegated Sandstone* of Europe:" his idea of these rocks is derived from "their mineralogical character, the variety of their colours, their alternation with strata of Marl, the agricultural qualities of the soil, their geological position, by containing the fossil bones of animals, and mines of lead, copper and manganese."†

* In the Map attached to Mr. Maclure's Geology of the United States of America, the *Old Red Sandstone* is coloured *dark blue*, and extends with little interruption from New England to Virginia.

† Silliman's *Journal of Science and the Arts*, Vol. x. p. 212.

Although Mr. Finch appears not to have formed this opinion without careful observation, we are not prepared to coincide with him, and for the following reasons.

He speaks of the Mineralogical character of this sandstone as an evidence of its secondary nature; but it is expressly stated by Professor Cleaveland, that "Sandstones, *more particularly in the older formations*, sometimes contain metallic substances, disseminated through the mass, or in beds, or in veins. Among these are the sulphurets of *Iron*, *Lead*, *Mercury* and *Copper*, *Pyritous Copper* and *Cobalt*."* These ores, with two exceptions only, occur at Perkiomen.

Mr. F. describes this sandstone as alternating with strata of *Marl:* we have not examined the quarries near Newark, in the state of New Jersey, to which he particularly refers, but we do not hesitate to say, that no substance, having the characters of *Marl*, has ever been taken from the mine at Perkiomen; on the contrary, the intervening strata consist of a well characterized *Slate-clay*, differing in colour, and occasionally in hardness, from the *Red-shell* or slate, that imparts its colour to the soil for many miles round.

It is said that the Sandstone at Newark is interspersed with *Clay-galls;* none of these, however, have been seen at Perkiomen, where the rock is so compact that it is used for mill-stones in grinding white-lead.

* Min. and Geol. 2nd edit. p. 758.

The strata at Perkiomen are regular, and have an inclination of from 18 to 22 degrees from the horizon, which, according to Maclure, is as great an angle as is generally formed by the *oldest red Sandstone;* the *New* or *variegated Sandstone* being horizontal, or following the inequalities of the surface.*

As regards the fossil bones of animals, we believe they have been found only in a very limited division of the Sandstone on the shore of the Connecticut river, and in New Jersey, where it is probable the formation is of a more recent date than that farther south; for it is remarked by Professor Silliman, that some of the *upper strata* in New England seem to correspond with the views of Mr. Finch.† It is possible, therefore, that a similar recent formation may exist near Newark, and even in other sections of the *Old Red Sandstone;* but we do not hesitate to consider the latter as constituting the stratification at Perkiomen.

Of the Mining operations at Perkiomen.

The search for lead in this place was commenced in 1809, by a company called "The Perkiomen Mining Company." In a short time they sunk a *shaft* of eighty feet in depth, and followed the vein N. W. and S. E. of the shaft, to a distance of fifty-six feet. At right angles with the *drift* thus made in pursuit of the ore, they cut another 325 feet long.

* Silliman's Jour. Vol. i. p. 212.
† Ibid. Vol. x. p. 209.

commencing 80 feet below the opening of the shaft, and terminating at the edge of the creek, a little above the water level. Through this passage the pumps discharge the water of the mine. By these operations a large quantity of *Galena* was procured; but owing to some misunderstanding between the individuals of the company, the works were abandoned in 1810. Soon after, however, the mine was purchased by Mr. Samuel Wetherill, the present proprietor, and the shaft and drifts were re-opened.

Since that period, the works have been pretty regularly conducted, and at present extend as follows: the *shaft* has been sunk to a depth of 160 feet from the surface. The *Upper drift* made by the company, has been extended on both sides to a distance of 192 feet. In addition to this drift, two others have been cut parallel to it, one of them opening 115 feet, and the other 150 feet below the surface: each of them has much the same lateral extent as the upper one, and all three follow the direction of the principal *lead-vein*—that is to say, from N. W. to S. E. The lower and middle drifts communicate by a vertical passage called the *Air tunnel.*

The *Galena* was found near the opening of the shaft, in what the miners call a *string*, or small vein.

The first five feet penetrated the soil mixed with fragments of *Red Slate-clay*, or *red-shell;* after which the *Sandstone* was encountered, occasionally alternating with strata of Slate-clay, for the most part of a dark gray colour.

At the depth of 10 feet, the vein increased to fifteen

inches in thickness of solid ore, was regularly formed, and inclining 65°.

At 20 feet the vein continued much the same, though rather poor to the south. Specks of carbonate of copper, and oxide of iron, were now first seen. Inclination 85°.

At 30 feet the rock became harder, and the vein poorer; the *gangue* for the most part consisting of quartz intermixed with copper, pyrites, and iron.

At 40 feet the vein improved to the north, and had sulphate of Barytes in addition to the former *Matrix*. Inclination 75°.

At 60 feet the *Galena* diminished, and the salts of lead, as the Carbonate and Phosphate, became abundant.

At 70 feet the vein improved, and strings of Blende were discovered; but the water had increased to an inconvenient degree.

The vein now diminished gradually, until at a depth of 82 feet it was considered scarcely worth pursuing in a vertical direction; but the shaft was continued for the purpose of running the *drifts*.

Accordingly three of these *drifts* were opened at right angles with the *shaft*, and penetrated to the extent, and in the direction already mentioned. In the course of these lateral operations, several large rich veins were met with, which yielded the ore in considerable abundance. By way of illustration, it may be remarked that four men were employed for 458 days, during which time the lead they obtained,

after being cleaned, washed, and ready for the furnace, weighed 1140 cwt.

But a better idea of the veins and their attendant minerals may be obtained by stating the successive products of some one of the drifts; and for this purpose we will take the N. W. course of the *Lower drift*.

This passage is seventy-two inches high, and forty-two wide. Soon after its commencement, it presents a vein of four feet in thickness, of which the *gangue* is Quartz and Barytes, with some Iron.

The same appearances continue for forty feet, where the vein becomes five feet thick, and has carbonate and phosphate of lead in addition to the former substances.

At 50 feet the vein is three feet across, and is accompanied by sulphuret of zinc.

At 60 feet the vein is five feet through; carbonate of copper and the salts of lead in plenty, with small quantities of carbonate of zinc.

At 70 feet the vein diminished to three feet and a half, but has all the above mentioned minerals.

At 90 feet the vein is but thirty inches wide.

After this drift had been run for 60 feet, a rich vein was observed pursuing a vertical course; the excavation was therefore continued upwards, by which means the middle and lower drifts became united by the *Air-tunnel*.

The products of the other drifts are in most respects analogous to those of this one.

The ore of this mine yields 75 *per cent.* of lead,

with a trace of silver; but it is to be regretted that it is extremely difficult to smelt by the ordinary modes, and indeed no plan has yet been tried by which it can be reduced with facility. From this cause, the mine is at present inactive; but the proprietor has lately instituted a series of experiments that may eventually obviate the difficulty.

Of the Minerals of Perkiomen.

Perhaps no mine in the United States has produced so great a variety of minerals as this; notices of most of them, however, have been already published, especially in an interesting paper by Mr. Lea, in vol. i, part second, of this Journal; but it will be necessary to recapitulate them here for the purpose of describing their crystalline forms, an object which has not hitherto been attempted. We will, at the same time, add a few species that have been discovered since Mr. Lea's paper was written.

LEAD.

Sulphuret of Lead—In addition to the cube with truncated angles, (vol. i. p. 467,) the regular cube and Octaedron have been found here.

Carbonate of Lead—(Vol. i. p. 467.) This salt occurs variously crystallized; the following forms have been satisfactorily identified.

1. Elongated Octaedron.
2. Flattened Octaedron.

3. Octaedron with all the solid angles truncated.
4. Octaedron with apices truncated.
5. Oblique rhombic prism, with the terminal edges and solid angles replaced by single planes.
6. Oblique four sided prism, terminated by an acute four sided pyramid, the planes of the pyramid set on the planes of the prism.
7. The regular hexaedral prism, the terminal edges replaced by single planes. (*Annulaire of Haüy.*)
8. Macle crystals of the above.
9. Unequiangular six sided prism, terminated by a four sided pyramid; the planes of the pyramid set on the smaller lateral planes of the prism.
10. Double six sided pyramid, with the apices truncated.
11. Acute double six sided pyramid. (*Bipyrimidale of Haüy.*)
12. Double six sided pyramid, with the common base truncated. (*Trihexaedre of Haüy.*)

Sulphato-Carbonate of Lead.—Beside the above specimens, others occur in groups of very oblique, four sided prisms, supposed to be the sulphato-carbonate of Lead.

Sulphate of Lead—(Vol. i. p. 467.) This mineral has been obtained in the following forms of crystal.

1. Oblique four sided prism, acutely bevelled on the extremities, the bevelling planes set on the acute lateral edges, and the obtuse lateral edges of the prism truncated.

2. Oblique quadrangular prism, terminated by a four sided pyramid; the planes of the pyramid corresponding with those of the prism.
3. Same form modified by bevelments of the edges of the pyramid.
4. Very acute Octaedron.
5. Cuneiform or elongated Octaedron, so modified as to pass into the *Trihexaedre of Haüy*. A fine specimen in the cabinet of the Academy.

Phosphate of Lead—The only form of this salt hitherto found, is the hexaedral prism. (Vol. i. p. 468.)

Molybdate of Lead—(Vol. i. p. 468.) Two forms of this rare mineral have been obtained at Perkiomen.

1. Rectangular four sided table, with bevelled edges; being a modification of the *Sexoctonale of Haüy*. Colour orange-yellow.
2. Low Octaedron, with the angles of the common base, the lateral edges, and apices of the pyramid truncated. Variety of the *Triforme of Haüy*. Colour wax-yellow.

COPPER.

Native Copper has been found in small quantity in a gangue, consisting for the most part of Quartz. It is both massive and dendritic.

Red Oxide of Copper—A few splendid specimens of the Capillary variety were obtained some years ago, (Vol. i. p. 463,) the finest of which is in the cabinet of the Academy of Natural Sciences. It also occurs in minute Octaedral crystals.

Copper Pyrites—(Vol. i. p. 463.)
Green Carbonate of Copper—(Vol. i. p. 462.)
Blue Carbonate of Copper—(Ibidem.)

IRON.

Hematite—The brown variety occurs in small but beautiful specimens, generally iridescent, and surrounded either by crystals of Quartz or Barytes.
Sulphuret of Iron—(Vol. i. p. 464.)
Micaceous Oxide of Iron—(Ibidem.)

ZINC.

Sulphuret of Zinc—The Brown Blende is abundant, and the yellow and black varieties also occur. (Vol. i. p. 468.) About a quarter of a mile from the Perkiomen mine, another is now worked for Lead; but the Zinc, which is above the former, is so abundant as to constitute the chief obstacle in the search for Lead. No crystals of it have yet been observed.

Carbonate of Zinc—In amorphous and riniform masses, either white, pale blue, or brown. The blue variety is scarce; it occurs in beautiful hemispherical concretions, which are sometimes radiated. The *Brown Carbonate* (if such it be) has been found in a single instance only: it is in small globular masses, possessing some traces of the dodecaedral form; the surface is delicately striated and glistening. It is in most respects analogous to a rare specimen in Dr. Morton's collection, from Lokteskoi in Siberia.

QUARTZ.

Quartz—(Vol. i. p. 473.) Besides the crystallized specimens, it is found cavernous and pseudomorphous; the latter variety appears in most instances to have replaced the cube of lead. Many of the cavernous specimens are beautifully coated with Oxide of Iron, or with the Salts of Lead and Copper.

BARYTES.

Sulphate of Barytes—(Vol. i. p. 481.) Its crystalline forms are these:

1. Four sided prism, with a rhombic base. (*Forme primitive of Haüy.*)
2. Hexagonal Table. This form is rare, and very minute.
3. Lenticular. Abundant, and often fancifully grouped.

ANTHRACITE.

A small vein of this substance is found between the Sandstone, 172 feet from the mouth of the *Water drift.*

All the above descriptions, with a single exception, are taken from specimens in my cabinet; duplicates of many of them are also contained in the Museum of the Academy of Natural Sciences.

In preparing this paper, I have been assisted by my friend Dr. S. G. Morton, to whom I am also indebted for the annexed accurate diagram of the mine; the data were obtained by careful observations made by me on the spot.

EXPLANATION OF THE PLATE.

a. Shaft-house.
b. b. b. Shaft.
c. Opening of the water-drift leading to the creek.
d. d. Upper lateral drift.
e. e. Middle lateral drift.
f. f. Lower lateral drift.
g. Air-tunnel.

Genera of North American Reptilia, *and a Synopsis of the species. By* Richard Harlan, M. D. *Read December* 12, 1826.

There are few departments of natural science which, to American naturalists, have given rise to more investigation than the history of the Reptiles of our widely-extended country. Within a very few years, most important facts have been elicited, and many new and interesting species have been added to a list, formerly extensive. The great obscurity and confusion peculiarly prevalent in the descriptions of Authors who have written on this subject, though gradually dissipating, are by no means sufficiently cleared. To the student of *Herpetology*, whether general or local, a systematic arrangement of all the N. A. genera, with scientific descriptions of their species, cannot but be a desirable object.

The present essay is offered to the Academy, more particularly as an outline of, and with the view of eliciting facts and observations preparatory to a contemplated work, to contain a more elaborate description of the animals, their habits, &c. peculiar to this department.

Brongniart's division of the reptiles into four orders, viz: Chelonia, Sauria, Ophidia, and Batrachia, is universally acknowledged, and justly esteemed. As all systems are arbitrary, we shall take the liberty of deviating from the numerical arrange-

ment of this author, and commence with that ORDER which best comports with our present convenience.

BATRACHIA.*

Characters of the ORDER—Heart with a single auricle and ventricle; the latter destitute of fleshy columns, and discharging the blood by one opening: skin naked, usually lubricated by a mucous secretion: no external organs of generation in the male: fecundation external: the eggs are deposited in the water: the young are hatched in that element, and at first possess branchiæ, which, in some genera, are persistent; in others, are absorbed when the lungs have acquired the proper degree of development: all destitute of true ribs, and possessing the faculty, more or less extensive, of changing their colours at will.

1st DIVISION.

† Branchial fenestræ persistent: skull composed of a solid piece.

1st GENUS. AMPHIUMA. Garden. Linn. Harlan.

Characters of the Genus—Teeth in both jaws:

* From βατραχος—animals resembling frogs.

† In common with several authors, we have hitherto used the term "Opercula" (coverings,) to express the idea intended by *branchial fenestræ*, (Gill openings.) The term "Spiracula," (breathing holes,) which is occasionally used as synonymous, is equally objectionable, as it conveys an erroneous idea.

legs four, slender and jointless: toes before and behind jointless, clawless.

The genus consists of a single species, the

AMPHIUMA *means*, Garden.

SYNONYMA. *Amphiuma means*, Garden. Smith's correspondence of Linneus.

Amphiuma means, Harlan. Journal of Philad. A. N. Sc. Vol. 3—and Annals of the N. Y. Lyceum of Nat. Hist. Vol. I. p. 269. pl. XXII.

Sireni simili, Linn. Smith's correspondence of Linneus.

Chrysodonta larvæformis, Mitchill, Med. Recorder, No. 19.

Vulgo, *Congo snake.*

Char.—*Colour* dark-brown, or slaty, with a bluish tinge on the sides, and the belly rather lighter: *head* long, tapering, depressed: *mouth* extending half the length of the jaws: *teeth*, two rows above, and one below, with their points somewhat flattened and reflected: *legs* small, distant, with rudiments only of bones concealed in the flesh, and with two clawless toes, the external the longest.

Habit.—Burrowing in the mud, in swamps, or in the vicinity of streams, where it searches its food, and hybernates; occasionally visiting the dry land.

Growing to the length of three feet.

Inhabits the southern Atlantic states, from South Carolina to Mexico. Specimens are common of late, in most of our museums. The species was for a long time neglected or unknown.

2nd Genus. Menopoma. Harlan.

Characters of the Genus.—Destitute of branchiæ at all periods of its existence: four strong legs: toes clawless: one or more rows of teeth in both jaws.

As yet only a single species of the genus is known.

Menopoma *alleghaniensis.*

Synonyma. *Salamandra alleghaniensis*, Michaux.

Salamandra gigantea, and *S. horrida*, Barton.

Protonopsis horrida, Barton.

Salamandre des monts alleganiens, Sonnini and Latraille.

Abranchus alleghaniensis, Harlan. Annals of Lyceum, Vol. I. p. 233. pl. 17.

Menopoma alleghaniensis, Harlan. Annals of Lyc. N. Y. Vol. I. p. 271.

Triton alleghaniensis, Daudin.

Molge gigantea, Merrim.

Vulgo, *Hell-bender*, *Mud-devil*, *Ground-puppy*, *Young alligator*, and *Tweeg*, by the North American Indians.

Confounded with the *Proteus of the Lakes*, by Dr. Mitchill. Vide Silliman's Journal, Vol. IV. and VII. Also by Baron Cuvier, Animaux fossiles, 2nd ed. Vol. IV. Indicated as the young of the *Triton lateralis*, or "Proteus of the Lakes," by Say; vid. Journ of A. N. S. Vol. I.

Char.—Lower jaw furnished with a single row of teeth: *upper jaw* with two concentric rows: four strong legs: five toes behind, four before: the outer edge of the feet fimbriated: two outer toes of the hind feet palmated, clawless. Vid. Annals of the N. Y. Lyceum of Nat. Hist. Vol. I. p. 222.

Inhabits the Ohio river and its tributaries.

2nd Division.—With persistent branchiæ: skull composed of separate pieces.

3d. Genus. Siren, Linn.

Characters of the Genus.—Body anguilliform; two anterior legs, toes small and clawless.

At present this genus consists of three species, the type of which is the

Sirena *lacertina*, Linn.

Synonyma. *Muræna siren*, Gm. Linn.
Muræna siren, Turt. Linn. and Stewart's Elements.
Mud iguana, Ellis. Amer. Philosoph. trans. Vol. VI. p. 189.
Siren lacertina, Barton.
S. lacertina, M. P. de Beauvois.—Fig. passim.

Char.—*Toes* four, clawless; long in the following order, commencing at the interior, 2, 1, 3, 4: *teeth*, two very minute rows surrounding the lower jaw: the anterior portion of the palate furnished with two oblong eminences arranged obliquely, as respects each other, and studded with minute teeth: a few teeth scattered over the middle of the anterior palate: *body* black above, dusky beneath, sometimes speckled: three branchial appendages, the lowermost the longest, all with lateral fringes: three gill-openings, or branchial fenestræ, the interior edges serrate, as in the gills of fishes: *tail* compressed, with narrow rayless fins, above and below.

Habit.—The Siren conceals itself in the mud, occasionally visiting both land and water.

Inhabits the southern states, from South Carolina to Florida: common in the vicinity of Camden, S. C. Specimens common in public and private collections.

Siren *striata*, Le Conte.

Synonyma. *Siren striata*, Le Conte, Annals of the Lyceum, N. Y., Vol. I. pl. 4.

Pseudo-branchus, Gray. Vulgo, *guana*.

Char.—*Legs* feeble; three clawless toes: *branchiæ* three on each side, with a fleshy trilobate covering; the lobes entire and naked: *colour* dusky, with a broad brown stripe on each side: length nine inches: teeth?

Habit.—Frequents mud-swamps, but does not burrow in the ground.

Inhabits South Carolina.

Siren *intermedia*, Le Conte.*

Char.—*Colour* resembling that of the *Lacertina*; branchiæ resembling those of the *Striata*. Length about one foot.

Inhabits the southern states—specimens in the cabinet of the Lyceum, and in the cabinet of the A. N. S.

* Manuscript notes.

4*th* Genus. Menobrancus. Harlan.

Characters of the Genus.—Persistent branchiæ: four footed, toes clawless: jaws armed with teeth. The genus consists of two or three species, the type of which is found in the

Menobranchus *lateralis.*

Synonyma. *Salamandra alleghaniensis*, (young,) Say. Journ. A. N. S., Vol. I.

Triton lateralis, Say, Long's Exped. to the Rocky Mountains, Vol. I. p. 5.

Proteus of the Lakes, Mitchill, Silliman's Journal, Vol. VII. p. 63.

Menobranchus lateralis, Harlan, Annals of the Lyceum, Vol. I. pl. 16.

Char.—A black vitta from the nostrils passing through the eyes, and dilated on the sides, becoming obsolete on the tail. *Feet* four; four toes to each foot, clawless: *teeth*, two rows in the upper, one in the lower jaw; conic, obtuse and small: *body* brown, spotted with black: *tail* ancipital. Length from one to two feet.

Habit aquatic, carnivorous, gluttonous.

Inhabits the Lakes and the Ohio, with its tributaries. Specimens in the cabinet of the A. N. S.

Variety. A. "*Proteus of the Lakes*" of Professor Mitchill.

Char.—Destitute of the lateral line: colours lighter; blackish spots more numerous.

Cabinet of the A. N. S.

MENOBRANCHUS *tetradactylus*.

SYNONYMA. *Proteus tetradactylus*, Lacepède. Ann. du Mus. Vol. X. p. 230. figured.

Char.—*Teeth* two rows in each jaw; a duplicature of skin forming a collar, partially surrounding the superior part of the neck, anterior to the branchiæ: four toes to each foot, clawless. Length 6-4 inches, French.

Observations.—We have lately examined some fine specimens of the *Mexican Axalotl*, or Siren pisciformis of Shaw, contained in the cabinet of the Lyceum. The animal being furnished with teeth, and the branchiæ having every appearance of being persistent, we have little hesitation in considering it a perfect animal, and not a larva. It will very naturally arrange itself as a species of the present genus, along side of the Menobranchus *lateralis*: it has one toe more on the hind foot, which circumstance indicates the transition of this genus to the Salamandra.

In concluding our observations on this genus, we regret to remark that some authors have very unadvisedly, we think, confounded it with the genus PROTEUS of Laurenti.

In a recent number of the American Journal of Science and Arts,* we observe an error of this description: the author gravely quotes twenty "particulars," in which he thinks the two genera "resemble each other," when nearly one half the genera included

* Vol. XI. No. 2. p. 227. Oct. 1816.

in the whole order resemble each other in the same "particulars;" and which, taken collectively, will characterize no particular genus. In order to obviate the possibility of a similar error in future, we offer to the students of herpetology the following *generic* characters afforded by the type of the genus under consideration. They differ from each other widely in their general form and anatomical details, but more particularly in osseous structure. The Proteus has thirty vertebræ, exclusive of the caudal, and seven false ribs on each side: the Menobranchus is furnished with nineteen vertebræ, and eighteen false ribs: the Proteus has three toes before, and two behind: the Menobranchus, four toes to each foot: the pelvis of the former is attached to the 26th vertebra, the pelvis of the latter to the 19th. Lastly, the habits and geographical distribution of the two genera are altogether at variance. Differences, which, taken collectively, are more than sufficient to establish a generic distinction.

Compared with the other genera of this order, the Proteus of Laurenti, and the Menobranchus, will be found to be precisely those which are the most widely separated from each other; in the most of its internal anatomical characters, the latter genus is much nearer related to the Salamandra than to the Proteus.

3d Division.

Breathing with lungs only in an adult state; branchiæ and their fenestræ deciduous.

Tail persistent, teeth in both jaws.

5th Genus. SALAMANDRA. Brongniart.

Lacerta Salamandra, Linn.

Characters of the Genus. Body elongated, lacertine: tail long: feet four: toes, four before, five behind: ears concealed beneath the skin: no tympanum: jaws armed with numerous small teeth, and with two longitudinal palatine rows: tongue adhering at its sides, reflected at the extremity:* no sternum: numerous false-ribs: branchiæ in the larva state: membranaceous opercula covering the branchial fenestræ: breathing with vesicular lungs in the adult state, at which period the rudiments of the cartilaginous arches of the branchiæ remain attached to the os hyoides: anterior extremities developing before the posterior. The "modus copulandi" is peculiar to the genus; the sexes unite their bodies anteriorly, and separate them below, forming an angle more or less acute; the male ejects a quantity of white, thick liquor on the female organs of generation; these organs are much swollen in both sexes, during the season of their amours. The seminal liquor vivifying only those ova which are situated near the orifice of the vulva: the whole of the eggs not being vivified at the same time, they require frequent reiterations of the act: the union of the sexes continues for 20 or 30 days, and is repeated several times in an hour: the wonderful faculty of

* Latreille erroneously states, as a natural character of the Salamandra, "Langue fixée dans toute sa longueur." Vid. Lat. hist. nat. des Salamandres de France.

reproduction observed in this genus is generally known. For important and interesting particulars connected with the history of the Salamanders, vide "Histoire naturelle des Salamandres de France, by P. A. Latreille," who has furnished us with the best figures of these animals. Laurenti reserving the name Salamdra to the S. *terrestris*, has described under the two generic names, *Triton* and *Proteus*, several aquatic Salamanders.

This genus is naturally divided into the terrestrial, or such as are furnished with tails more or less compressed, sometimes cylindrical, and seek their food on the land, and into the aquatic, or such as are furnished with compressed tails, and seek their food in the water. Like most animals of this order, the Salamandræ prey on living game only, which they seize leaping.

Land Salamanders.

Tail more or less compressed, sometimes cylindrical, tapering.

The type of which in American species, is the

Salamandra *subviolacea*.

Synonyma. *Lacerta venenosa*. Barton, Amm. Phil. trans. fig. 1. Vol. VI.

S. *subviolacea*, Idem.

Lézard aquatique. C. S. Rafinesque. *Lacerta punctata*, Gmel. *Stelio.?* Catesby, Carol. pl. X, fig. 10. *Le ponctuée*, Lacépède. *La Salamandre à points blanc*, Sonnini.

Char.—*Body* black above, rather lighter beneath, with two longitudinal rows of yellow or whitish spots

on the back, which become single on the lower half of the tail: *throat* with a strong cuticular fold: *tail* compressed at the end, cylindrical at the base, and about the length of the body; a few spots on the legs.

Length about 7 inches.

Inhabits Pennsylvania. Cab. of A. N. S.

Note.—This species differs from the S. *terrestris* of Europe, principally in the form of the tail, and form and arrangement of the blotches.

A variety of this species is found in South Carolina, differing principally in being of a larger size, and in the arrangement of the blotches.

Salamandra *tigrina*.

S. *tigrina*, Green. Journ. Acad. Nat. Sc. Vol. VI. p. 116.

Char.—*Tail* rather longer than the body; tapering, compressed, and rounded at tip: *beneath* granulated, immaculate: *above* blackish, with numerous, large, irregular spots of pale ochre: *beneath* cinereous, irregularly marked with patches of an ochraceous colour: *throat* pale ochre. Length?

Inhabits New Jersey.

Salamandra *cylindracea*.

S. *cylindracea*, Harlan. Journ. Acad. Nat. Sc. Vol. V. p. 156.

Char.—General colour blackish, clouded with confluent white blotches on the sides: *head* thick and oval: *tail* cylindrical, longer than the body: all the toes fissile: total length about five inches.

Inhabits South Carolina. Cab. of A. N. S.

SALAMANDRA *fasciata.*

S. *fasciata*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 350.

Char.—*Tail* about as long as the body, oval, tapering, and pointed: *back* brown, marked with transverse, irregular blue bands, which extend over the upper part of the tail: *beneath* ash colour, or dark brown in the young animal.

Length five inches.

Inhabits New Jersey. A specimen was found hybernating beneath the moist leaves, in the woods: sometimes visits the water. Cab. of A. N. S.

SALAMANDRA *sinciput-albida.*

S. *sinciput-albida*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 352.

Char.—*Nose* white: *tail* shorter than the body, thick, tapering, and pointed: *above* dirty ferruginous: *beneath* yellowish.

Length 3 inches.

Inhabits New Jersey. Placed provisionally with the land salamanders, from the form of its tail.

SALAMANDRA *erythronota.*

S. *erythronota*, Raf. Green. Journ. Acad. Nat. Sc. Vol. I. p. 356.

Char.—*Tail* rather shorter than the body, cylindrical, tapering, and pointed: *above* red, mixed with brown; the colours forming a stripe, from the snout to the end of the tail: *beneath* cinereous: *throat* whitish. The young have no brown mixed with the red.

Length 4 inches.

Inhabits New Jersey, under stones, &c. in high places.

Salamandra *cinerea*.

S. *cinerea*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 356.

Char.—*Tail* longer than the body, cylindrical, tapering, and pointed: *back* dark brown, sprinkled with white dots: *beneath*, black and white, mixed: *throat* whitish. Toes very minute; four before, five behind.

Length 4 inches.

Inhabits New Jersey. Specimens in the cabinet of the Acad. from South Carolina.

Salamandra *glutinosa*.

S. *glutinosa*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 357.

Char.—*Tail* nearly twice the length of the body, slightly compressed near the end: *above* blackish, marked with white spots: *beneath* black.

Length 6 inches.

Inhabits New Jersey.

Salamandra *fusca*.

S. *fusca*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 357.

Char.—*Tail* the length of the body, tapering, slightly compressed: *above* uniformly yellowish-brown: *beneath* white, with a line on each side of black spots: *throat* spotted with black.

Length 3 inches.

Inhabits New Jersey.

Water Salamanders.

Tail always vertically compressed, sometimes fringed; passing most of their time in or near the water.

Salamandra *maculata*.

S. *maculata*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 350.

Char.—*Tail* about as long as the body, slightly compressed: *above* whitish, sprinkled with irregular, reddish-brown spots: *beneath* white.

Length 5 inches.

Inhabits New Jersey. Cab. of the A. N. S.

Salamandra *subfusca*.

S. *subfusca*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 351.

Char.—*Tail* rather shorter than the body: *above* of an olive-brown, marked with dark spots: *beneath* yellowish, and spotted.

Length 6 inches.

Inhabits New Jersey.

Salamandra *longicaudata*.

S. *longicauda*, Green. Journ. Acad Nat. Sc. Vol. I. p. 531.

Char.—*Tail* nearly twice the length of the body, compressed and pointed: *above*, yellowish-brown, spotted with black dots, assuming the form of transverse bands on the tail: *beneath* whitish.

Length 6 inches.

Inhabits the swamps of New Jersey. Specimens in the Cabinet of the Academy.

Salamandra *nigra*.

S. *nigra*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 352.

Char.—*Tail* the length of the body, oval and pointed: *above* blackish, sides sprinkled with white: *beneath* whitish.

Length 4 inches.

Inhabits Pennsylvania. Specimens in the cabinet of the Academy.

Salamandra *bis-lineata*.

S. *bis-lineata*, Green. Journ. Acad. Nat. Sc. Vol. I. p. 325.

Char.—*Tail* longer than the body, compressed: *above* cinereous, with two, sometimes three dark lines; if three, the middle one broadest near the head, and about the length of the body: *beneath* whitish or yellowish.

Length 3 inches.

Inhabits New Jersey.

Salamandra *rubra*.

S. *rubra*, Daudin. Hist. Nat. des Reptiles.

Synonyma. S. *rubriventris*, Green, (perhaps a variety.) Journ. of the Acad. Nat. Sc. Vol. I. p. 353.

Char.—*Tail* shorter than the body, compressed: *above* blackish, with brown spots: *sides* red: *beneath* red.

Length 7 inches.

Inhabits New Jersey. Cab. of the A. N. S.

SALAMANDRA *picta*.

S. *picta*, Harlan. Journ. Acad. Nat. Sc. Vol. V. p. 136.

Char.—*Above* blackish or slate colour: *beneath* yellowish or light orange colour: *skin* beneath the neck, folded: *head* large: *tail* nearly the length of the body, compressed at the end.

Length 4 inches.

Inhabits Pennsylvania. Specimens in the Cab. of the Acad.

SALAMANDRA *symmetrica*.

SYNONYMA. *Stelio*, Say, Silliman's Journal, Vol. I. p. 264.
S. *symmetrica*, Harlan. Journ. Acad. Nat. Sc. Vol. V. p. 158.

Char.—*Above* dusky-brown or fuscous: *beneath* orange-yellow: a row of deep orange-coloured spots on each side of the spine, symmetrically arranged: *tail* compressed, longer than the body.

Length 3 inches.

Inhabits South Carolina, sometimes under the bark of dead trees. Specimens in the Cab. of Acad.

SALAMANDRA *flavissima*.

S. *flavissima*, Harlan. Silliman's Journal, March, 1825.

Char.—*Above* brownish-yellow: *beneath* clear bright yellow: *back* marked with three black lines: *tail* compressed, longer than the body.

Length 3 inches.

Inhabits Pennsylvania. Specimens in the cabinet of the Acad.

Salamandra *variolata*.

S. *variolata*, Gilliams. Journ. Acad. Nat. Sc. Vol. I. p. 460. pl.

Char.—*Body* black, with a slight violaceous tinge, and irregular white spots, more numerous on the sides, wanting on the ventre and inferior portion of the tail: *tail* very slightly compressed near the end.

Length 3 inches.

Inhabits southern states. Specimens in the Cab. of the Acad.

A variety of this species, much larger, dark slate colour above, lighter beneath: *tail* whitish beneath, and proportionably longer and less tapering. Occurs in Pennsylvania. Cab. of the A. N. S.

6*th* Genus. RANA. Linneus.

The Linnean genus Rana, includes the modern genera, Rana, Hyla, Bufo, and Pipa.

All the modern genera possess the following characters in common: four legs, with four toes before, five behind; sometimes the rudiment of a sixth: head flat, snout rounded: throat very large: tongue attached at the borders of the jaw, and reflected at the extremity: skeleton destitute of ribs and sternum: eyes furnished with a third lid; inspire by means of the muscles of the throat; expire by the agency of the abdominal muscles: no tail in the adult state. Larvæ or Tadpoles, furnished with large fleshy tails,

and small corneous beaks; branchiæ beneath the skin, attached to four cartilaginous arches. Feeding principally on insects, which they search for on dry land.

Frogs, properly so called.

Genus. RANA. Of modern authors.

Characters of the Genus.—Body slender: hind feet very long, strong, and palmated: skin for the most part smooth: upper jaw serrated: palate armed with one or more transverse rows of teeth, or serrated eminences. The larvæ possess but one branchial fenestra, and that always on the left side.

Rana *pipiens*.

Synonyma. *Bullfrog*, Bartram, Catesby, Brown, Kalm.
Rana maxima, Catesby, Nat. Hist. Carol. Vol. II. p. 72. pl.
Rana catesbiana, Shaw, Gen. Zool. Vol. II. part 1. p. 106. pl. 33.
Rana pipiens, Linn.

Char.—Above brown-cinereous: *beneath* whitish: *arms* and *legs* striped with black: *head* and fore part of the body more or less green.

Length of the body, from 6 to 10 inches; of the hind legs, from 8 to 12 inches.

Inhabits the middle states; common in the vicinity of Philadelphia.

Rana *clamata*.

Synonyma. *Rana clamata*, Daud.
Le criard, Idem. Vulgo, *the bawling frog*.

Char.—*Above* dusky cinereous: *beneath* whitish: *snout* more or less green: *throat* yellow: *legs* white within, obsoletely banded without, or spotted with black.

Length of the body, about 3 inches; of the hind legs, 4 inches.

Inhabits the middle states; the most common of all our frogs.

Rana *ocellata.*

Synonyma. *Rana maxima virginiana*, Seba.
Rana pentadactyla, Linn. Gmel.
Rana ocellata, Linn.
Argus frog, Shaw, Gen. Zool. Vol. III. pt. 1. p. 108. pl. 34.
Grunting frog, Bartram's Travels through North and South Carolina, &c. p. 276.
Rana grunniens? Daudin.

Char.—In form and size resembling the "Pipiens:" *above* brownish, or greenish, with irregular deeper coloured spots: *beneath* whitish, granulated under the belly and thighs; round brownish spots, surrounded with a clear teint upon the flanks, buttocks and thighs.

Inhabits Florida and Mexico.

Rana *melanota.*

Rana melanota, Rafinesque. Vulgo, *Black-frog.*

Char.—*Back* olivaceous-black: a yellow streak on the sides of the head: *chin, throat,* and inside of

the *legs* whitish, with black spots: *belly* white, immaculate.

Total length $2\frac{1}{2}$ inches.

Inhabits Lake Champlain and Lake George.

RANA *halecina.*

SYNONYMA. *Rana pipiens*, Schneider, Schreber, Shaw.
Rana aquatica, Catesby, Carolina, p. 70. Vol. II.
Rana ocellata? Kalm, Trav. in North America, Vol. II.
Shad frog, Bartram, Trav. p. 278.

Char.—*Above* light cinereous: *beneath* white: marked above with irregularly disposed blotches: *body* and *limbs* elongated.

Length of the body $3\frac{1}{2}$ inches; of the hind legs $5\frac{1}{2}$ inches.

Inhabits Pennsylvania, and the southern states.

RANA *utricularius.*

Rana utricularius, Harlan. American Journal of Science and Arts, by B. Silliman, M. D. Vol. X. p. 60, 1825.

Char.—*Above* dark olivaceous-green: *beneath* white: *back* with sub-oval blackish spots: a vocal vesicle on each side of the neck: *legs* with a few blackish bands.

Length of the body about 3 inches; of the hind legs more than 4 inches.

Inhabits Pennsylvania and New Jersey.

Rana *scapularis*.

Rana scapularis, Harlan. Silliman's Journal, ut supra.

Char.—*Above* dark olive-brown: *snout* green: *throat* yellow: *abdomen* white: a golden coloured line above the scapulæ.

Length of the body 3 inches; of the hind legs 4 inches.

Inhabits Pennsylvania.

Rana *flaviviridis*.

Rana flaviviridis, Harlan. Silliman's Journal, ut supra.

Synonyma. *Rana fontinalis?* Le Conte, Ann. of Lyceum, Vol. I. p. 282.

Yellow throated green frog.

Spring frog? Bartram, manuscript notes, penes me.

Char.—*Above* clear lively green: *beneath* white: *throat* yellow: *buttocks* mottled with black spots: *body* rather clumsy: *abdomen* large: *snout* rather obtuse.

Length of the body 3 inches; of the hind legs more than 4 inches: breadth of the head 1 inch.

Inhabits the middle states.

Rana *sylvatica*.

Synonyma. *Rana sylvatica*, Le Conte. Ann. of the Lyc. of New York, Vol. I. p. 232.

Rana pennsylvanica, Harlan. Silliman's Journal, ut supra. Vulgo, *Wood-frog*.

Char.—*Above* olive-brown, or drab coloured: *beneath* white: a black vitta, commencing on the side

of the snout, passes backwards, dilating and involving the eye and tympanum: *posterior extremities* obsoletely fasciated.

Length rather smaller, and more slender than the *clamata*.

Inhabits the middle states. Cab. of the Academy.

Rana *palustris*.

Synonyma. *Rana palustris*, Le Conte, Ann. of the Lyceum, Vol. I. p. 282.

Rana pardalis, Harlan. Silliman's Journal, ut supra.

Vulgo, *Leopard*, *Zebra*, or *Tiger-frog*.

Char.—*Above* dark-cinereous: *beneath* white, lighter on the flanks, snout and extremities: interior surface of the limbs yellowish: a row of dark-green spots on each side of the spine, extending the whole length of the back: two longitudinal rows on the flanks: posterior extremities striped with broad, transverse, greenish lines or bands.

Length of the body 3 inches; of the hind legs 4 inches 3 tenths.

Inhabits Pennsylvania. Cabinet of the Academy.

Rana *pumila*.

Rana pumila, Le Conte. Ann. of Lyceum, Vol. I. p. 282.

Char.—*Body* pale green: *back* with a decurved line on each side, bounded with dusky: *head* with a triangular spot between the eyes: legs barred with dusky.

Length? ——

Rana *gryllus*.

Synonyma. *Rana gryllus*, Le Conte. Ann. of the Lyc. Vol. I. p. 282. *Savanna cricket*, Bartram's Travels, p. 278. Erroneously supposed by Daudin to be the young of the Hyla *lateralis*.

Char.—*Above* warty; colour various: a dark triangular spot on the top of the head between the eyes: a pale line extending from the apex of this spot to the vent: hind part of the thighs yellowish or white, with one or two lines of dusky or brown.

Length about one inch and a half.

Inhabits the southern and middle states: frequents the grass, and verges of ponds. Cab. of the Acad.

Rana *dorsalis*.

Rana dorsalis, Harlan. (New species.)

Char.—*Above* fuscous, smooth, with a broad, white, longitudinal vertebral band, bifurcating anteriorly, and extending over each eye: *snout* above, pale or whitish: *beneath* white: *throat* and inner part of the thighs freckled: *buttocks* white, with two brownish transverse lines: a white line on the side of the neck, extending from the eye to the scapula.

Length of the body $\frac{8}{10}$ of an inch; of the legs $1\frac{1}{2}$ inches. This measurement being taken from the largest of seven specimens.

Inhabits Florida. Specimens in the Cabinet of the A. N. S.

Rana *nigrita*.

Rana nigrita, Le Conte. Annals of the Lyceum, ut supra.

Char.—*Above* black, speckled with white warts: middle of the back cinereous, with an interrupted stripe of black: *upper lips* with a white line: *beneath* granulated, whitish: *legs* barred with whitish; hind part of the thighs brown; hind legs very long.

Length?

7*th* Genus. HYLA. Roesel, Daudin, Cuvier.

Characters of the Genus.—Living chiefly on trees during the summer, and temperate weather; preying on insects; changing the colour of the skin, so as to resemble the substances on which they rest; hybernating in the mud, and generating like the frog; hind toes semipalmate; with the extremity of each toe surrounded with a mucous tubercle: skin more or less granulated: colour changeable.

Hyla *lateralis*.

Synonyma. *Rana arborea*, *varietas* B. Linn. Gmel.
Hyla viridis, Laurenti, Catesby.
Calamita carolinensis, Pennant.
Calamita cinerea, Schneider.
La raine flanc-rayée, Daudin.
La calamite cendrée, Schneider.

Char.—*Body* smooth above, lively green: *beneath* whitish, or pale-green, granulated: a straight, narrow

line, of a yellow or silvery colour, bordering the superior lip, prolonged on the flanks, and posterior extremities: *iris* golden.

Length one and a half inches.

Inhabits the southern states and Surinam: frequents water plants, according to Le Conte. Cabinet of the A. N. S.

Hyla *femoralis*.

Synonyma. *La raine fémorale*, Daudin, Hist. Nat. des Reptiles par Latreille, planche enluminée.

Char.—*Above* dark cinereous, marked with a few confluent spots of dusky, largest between the eyes: *beneath* whitish, granulated: *head* rather obtuse: *thighs*, exterior spotted with yellow: *legs* bordered with dusky.

Length one and a half, to one and three quarters of an inch. Colours various: a variety with the back chiefly occupied with a large irregular blotch: *legs* barred.

Inhabits the southern states. Cabinet of the A. N S.

Hyla *squirella*.

Synonyma. *La raine squirelle*, Daudin.
Hyla ocularis, *var.* Le Conte.

Char.—*Above* brown-cinereous: *beneath* whitish, granulated: a dusky, or various coloured band, extending from the nostrils to the eyes, and a narrow white stripe extending from near the nostrils along

the upper lip, reaching to near the fore-leg: *thighs* yellow on the exterior: *legs* barred.

Length more than 1 inch.

Coloured by Daudin, from a specimen in spirits.

"Var. A. *Above* cinereous, with a bar between the eyes: back with a few spots of dusky, sometimes confluent, sometimes uniting into a lateral line.

Var. B. *Above* cinereous, irregularly spotted with darker: line between the eyes broken.

Var. C. *Above* brown, immaculate: exterior of the thighs not yellow." (Le Conte.)

Inhabits the southern states. According to Bosc, the young resemble the common frog of Europe. Cabinet of the A. N. S.

Hyla *delitescens*.

Hyla delitescens, Le Conte. Ann. of Lyc. Vol. I. p. 281.

Char.—*Above* cinereous, spotted with darker: *beneath* whitish, granulated: *head* rather obtuse: *lips* whitish: *chin* speckled with brown: exterior of the thighs, and inner surface of arms and legs, yellow.

Length about 2 inches.

Inhabits Georgia, under the bark of trees.

Hyla *versicolor*.

Hyla versicolor, Le Conte, ut supra.

Char.—*Above* verrucose, colour varying with the will of the animal from pale-brown to cinereous and green: *back* more or less marked with an acute angled

cross: *beneath* white, granulated: *head* small: hind part of the abdomen, and hind legs, beneath, yellow.

Length two inches.

Inhabits the northern and middle states; has more the resemblance of a toad than the other species. Cabinet of the A. N. S.

8*th* Genus. BUFO. Daudin, Cuvier, &c.

Characters of the Genus.—Body thick, contracted, and for the most part warty above, and granulated beneath: tongue short and thick: fore feet four-toed, fissile: hind feet five-toed, mostly palmated: destitute of teeth, but having the upper jaw grooved, the lower jaw closing within the channel of the upper: a gland behind each eye in most instances.

Bufo *musicus.*

Synonyma. *Rana musica*, Linn. Gmel.
Bufo clamosa, Schneider.
Le criard, Daub. Lacépède, Bosc, &c.
Land-toad, Catesby.
Land-frog, Bartram.

Char.—*Above* deep-brown, verrucose, with irregularly disposed fuscus, or blackish spots, edged with white: *beneath* dirty white, granulated: *sides* pale, spotted: *legs* barred: large oblong warts behind the eyes: a large blackish spot posterior to the tympanum: *head* above canaliculate: two tubercles on the heal of each foot: a longitudinal, vertebral, shallow groove.

Length of the body about 3 inches.

Inhabits the southern and middle states. Mostly leaps, seldom crawls; preying on living insects only. Cabinet of the A. N. S.

Bufo *cognatus*.

Bufo cognatus, Say. Long's Exp. to the Rocky Mountains, Vol. II. p. 190.

Char.—*Body* above dark brownish, verrucose; papillæ and their disks black: *beneath* whitish, granulated: *head* with a short groove: *sides* and *legs* with irregular cinereous lines: *verrucæ* behind the eyes moderate; a cinereous vitta extending along the vertebræ, with three oblique lateral lines.

Length about 4 inches.

Inhabits the plains of Missouri. A specimen in the Philadelphia Museum.

Var. A. The reddish-brown, or brick-coloured toad of Bartram; very large, weighing near one pound when full grown: legs and thighs marked with blotches and ringlets. Inhabits the southern states. The Red toad of Pennsylvania is but little larger than the B. *musicus*.

Order. OPHIDIA,* *or Serpents.*

Characters of the Order.—Body long, more or less cylindrical, covered with scales or plates, sometimes annulated, tuberculated, or granulated: casting their exuviæ for the most part twice annually: destitute of feet: tail sometimes long, at others short: jaws armed with short teeth; also, perforated fangs in the poison-

* From Οφις—Serpents.

ous species: tongue long, extensible, and bifurcated, with few exceptions: top of the head covered with plates, or with scales; in some instances, with both plates and scales; in others, smooth.*

1*st* Genus. OPHISAURUS. Daudin.

Characters of the Genus.—Body rather thick, oblong, cylindrical; on each side a longitudinal fold: tail long, cylindrical, tapering: smooth plates on the head: furnished with eye-lids: ears visible externally: tongue extensible, notched at the extremity: scales square, symmetrically arranged, so as to appear longitudinal or transverse: anus simple, transverse: minute sharp teeth to each jaw; destitute of palatine branches, or poisonous fangs.

Ophisaurus *ventralis*.

Synonyma. *Anguis ventralis*, Linn., Gmel., Schneider.
Chamasaura ventralis, Schneider, Gray, Phil. Trans.
Cœcilia maculata, Catesby, Hist. Carol. pl. LIX.
Glass-snake, Bartram's Travels in North and South Carolina.
Le jaune et brun, Daubenton, Encyc. Meth. Idem, Lacépède.
L'anguis jaune et brun, Latreille.
Anguis ventral; anguis lamproie, Bosc. Dict. d'Hist. Nat. édit. de Déterville.
Ophisaurus ventralis, Daudin. Hist. Nat. des Rept. pl. 88.

* Any attempt to draw *specific* characters from a difference in the *number* of abdominal plates, or subcaudal scales, as first proposed by Lacépède, is altogether nugatory, an immense difference existing in this respect in the same species: nor has the enumeration of the teeth for a similar purpose, proposed by M. P. de Beauvois, proved more successful.

Char.—*Above* with fourteen longitudinal ranges of nearly square scales: *abdomen* with twelve longitudinal ranges of smooth scales, and forming about 120 transverse ranges, similar to rings: *beneath* the tail similar to the abdomen: *colour* above brownish, with the sides of the head and neck spotted with black: abdomen and back separated by a longitudinal fold or groove, which terminates at the anus. Length between two and three feet.

Inhabits the southern states. Cabinet of A. N. S.

2*nd* Genus. COLUBER. Linn.

Characters of the Genus.—Body long, cylindrical and tapering: head oblong, covered above with smooth polygonal plates: above covered with rhomboidal scales, reticulated or carinated: abdomen with transverse plates; beneath the tail with double plates: anus transverse, simple: jaws furnished with sharp teeth: without poisonous fangs. Some species oviparous, others ovo-viviparous.

Coluber *obsoletus*.

C. *obsoletus*, Say. Long's Exp. to the Rocky Mountains, Vol. I. p. 140.

Char.—*Above* black: *beneath* whitish, with large subquadrate black spots, which are confluent and palebluish towards the tail: *throat* and *neck* pure white: *sides* between the scales with red marks.

Length about five feet; tail about one fifth.

Abdominal plates, from 223 to 228: caudal scales from 67 to 84.

Inhabits Missouri. A specimen in the Philadelphia Museum.

Coluber *constrictor*.

Synonyma. *Coluber constrictor*, Linn. Gmel. Kalm. Trav. in N. America, Vol. III. p. 136.

Black-snake, Catesby's Carolina, Vol. II. pl. XLVIII.

Le serpent lien, Daub. Enc. Method. Idem, Lacépède.

La couleuvre lien, Latreille, Daudin.

Coluber ovivorus, Linn. Syst. Nat.

La couleuvre ovivore, Latreille, Lacépède, Daudin.

Chicken snake, of Bartram. Vulgo, *Racer*, or *Black-snake*.

Char.—*Above* blackish-blue: *beneath* slate-colour: *throat* and *lips* white: *head* above covered with plates: scales of the back, rhomboidal or hexagonal, slightly carinated. Length from three to six feet; tail about two sevenths.

Abdominal plates from 176 to 186: caudal scales from 88 to 98.

Inhabits North America; very common in the middle states: feeding on small animals; climbing trees in search of birds nests: suffocating its prey in its folds, like the Boa Constrictor. Cab. of the A. N. S.

Coluber *testaceus*.

C. *testaceus*, Say. Long's Exp. to the Rocky Mountains, Vol. II. p. 48.

Char.—*Above* pale sanguineous, or testaceous: *beneath* sanguineous, immaculate: scales large: size

of the black-snake (C. *constrictor*.) Abdominal plates 198: caudal scales 80. Inhabits Missouri. A specimen in the Philadelphia Museum.

Coluber *ordinatus*.

Synonyma. *Coluber ordinatus*, Linn. Gmel., and Gronovius.
Coluber cærulescens, Boddaert.
Little green snake, Catesby, Carol. Vol. II. pl. LIII.
Blue spotted snake, Shaw.
L'ibibe, Daubenton, Lacépéde, Latreille, Daudin.
C. biponctuée, Latreille.
Garter snake, Say, Long's Exp. to the Rocky Mountains, Vol. I. p. 375. This popular name is applied indiscriminately to several very distinct species.

Char.—Colour bluish, marked with black and cloudy spots, with a row of black dots under the flanks, and a green line on the back. (According to Catesby, the colour is spotted green above.) *Head* covered with plates.

Total length two feet; tail four inches. Abdominal plates 138: caudal scales from 65 to 74.

Inhabits South Carolina.

Coluber *parietalis*.

C. *parietalis*, Say. Long's Expedition to the Rocky Mountains, Vol. I. p. 186.

Char.—Above blackish, with three yellow fillits, and about eighty red concealed spots: *beneath* bluish, a series of black dots on each side.

Total length one foot; tail four inches.

Abdominal plates 165: caudal scales 88.

Inhabits Missouri. Specimens in the Philadelphia Museum.

Coluber *filiformis*.

Synonyma. *Coluber filiformis*, Linn. Gmel.
Anguis flagelliformis, Catesby, Carol. pl. LIV.
Natrix filiformis, Laurenti.
Le fil, Daub. Lacépéde.
La couleuvre filiforme, Latreille. Vulgo, *Coach-whip snake.*

Char.—*Above* entirely brown, or obscure livid: *beneath* whitish, with a black vitta near each eye, prolonged on the side of the neck.

Length from four to six feet, very slender and tapering. Abdominal plates 165; caudal scales 158.

Inhabits Carolina.

Coluber *flagelliformis*.

Synonyma. *Coluber mycterizans*, Linn. Gmel. and Gronovius.
Natrix colore magis virescente, Gmel. syst. Nat. p. 1119.
Anguis viridis, Catesby, Carol. Vol. 2. pl. LVII.
La fouet de cocher, Daudin. *Coach-whip snake* of the Anglo-Americans.

Char.—*Above* entirely grass-green: *beneath* whitish, with a longitudinal pale line on each flank.

Length between two and three feet; tail one third. Abdominal plates 187; caudal scales 147.

Inhabits South Carolina.

Coluber *sipedon.*

Synonyma. *Coluber sipedon*, Linn. Gmel.
Le sipede, Daub. Lacépède, Latreille. Vulgo, *Brown water-snake.*

Char.—*Above* dusky-brown: *beneath* whitish, or yellowish-brown, speckled with black.

Total length four feet four inches: tail 14 inches. Abdominal plates 136; caudal scales 54.

Inhabits middle states. Specimens in the Cabinet of the A. N. S.

This species, the most common in the vicinity of Philadelphia; first discovered by Kalm, and named by Linneus, has never been correctly described by succeeding naturalists.

Description.—Body thick and long: tail short and abruptly tapering: head thick and short: scales oblong, hexagonal, notched at the lower end, strongly carinated: colour above, unvaried dirty brown, or of a dusky, dead-leaf appearance: sides reddish-brown: abdomen whitish or yellowish-brown, freckled with black, particularly beneath the tail; in some instances the flanks or sides obsoletely banded with black: posterior occipital plates large, oblong, and rounded posteriorly, arranged as follow: postoccular 8, interoccular 3, antoccular 12, labial 18. Living chiefly in or near the water, feeding principally on live frogs; hybernating in the mud: sometimes attains to five feet in length.

Coluber *saurita*.

Synonyma. *Coluber saurita*, Linn. Gmel.
Riband snake, Catesby, Carol. Vol. 2. pl. L.
Le Saurite, Daub. Lacépéde, Latreille, Daudin.

Char.—*Above* deep brown, with three longitudinal stripes of a whitish or light green colour: *beneath* light green: *head* small, oblong, covered with plates: *scales* similar to those of the C. *sipedon*.

Length about two feet; tail one third, long and tapering. Abdominal plates from 154 to 159: caudal scales from 117 to 122.

Inhabits southern and middle states. Specimens in the Cab. of A. N. S.

Coluber *sirtalis*.

Synonyma. *Coluber sirtalis*, Linn. Gmel.
Le sirtale, Daub., Lacépéde, Latreille, Daud. Vulgo, *Garter-snake*, in Pennsylvania.

Char.—*Above* brown, marked with a longitudinal vertebral line, and one on each side, of a yellowish green colour: *back* spotted with black dots; scales oblong, strongly carinated, largest on the sides: *beneath* yellowish-green, lighter on the throat and lips: abdominal plates with two black spots; one at the union with the lateral scales, the other a little distant.

Total length 2 feet 3 inches; of the tail 5½ inches. Abdominal plates 150; caudal scales 60.

Inhabits Pennsylvania. Specimens in the Cab. of A. N. S. Hitherto not accurately described.

COLUBER *proximus*.

C. *proximus*, Say. Long's Exp. to the Rocky Mountains, Vol. I. p. 187.

Char.—*Above* black, trilineate; vertebral line ochraceous; lateral line yellowish; a double white spot on the parietal plates: *beneath* tinged with greenish-blue.

Total length two feet; tail seven inches. Abdominal plates 178: caudal scales 86.

Inhabits Missouri. Specimens in the Philadelphia Museum.

"This species differs from the *Saurita* in the numerical proportion which its sub-caudal scales bear to its plates; from the *Ordinatus*,* by being destitute of the two series of black points beneath; it is a much more slender serpent than the *parietalis*, and the tail is proportionably longer." (Say.)

COLUBER *flaviventris*.

C. *flaviventris*, Say. Long's Exp. to the Rocky Mountains, Vol. I. p. 185.

Char.—*Above* olivaceous: *beneath* yellow: *lower jaw* beneath white: scales destitute of carena.

Total length 3 feet 11 inches; tail 11 inches. Abdominal plates 176: caudal scales 84.

Inhabits Missouri.

* COLUBER *sirtalis*, Linn.

Coluber *striatulus*.

Synonyma. *Coluber Striatulus*, Linn. Gmel. Bosc.
Le Strié, Daub., Lacépéde.
Le couleuvre striatulèe, Latreille, Daudin, &c.

Char.—*Above* of a clear brown colour, with rhomboidal, strongly carinated scales: *beneath* whitish-gray: *head* oval, covered with nine plates.

Length nine inches; tail two inches. Abdominal plates from 126 to 132: caudal scales from 25 to 45.

Inhabits South Carolina; frequents woody places. Specimens in the Cab. of the A. N. S.

Coluber *punctatus*.

Synonyma. *Coluber punctatus*, Linn. and Gmel.
Le ponctuée, Daub., Lacépéde, Latreille, and Daudin.

Char.—*Above* plumbeous, finely pointed with gray: *beneath* reddish-yellow, with three longitudinal and parallel rows of plumbeous and sub-triangular points; beneath the tail immaculate: *head* rather oval flattened, with a white spot or band disposed across the occiput.

Total length nine inches; tail two ninths. Abdominal plates 136 to 140: caudal scales 43 to 48.

Inhabits South Carolina, under the bark of trees. A specimen in the Cab. of A. N. S.

Coluber *amœnus*.

C. *amœnus*, Say. Journal of the A. N. S. Vol. IV. p. 237.

Char.—*Above* brown or blackish: *beneath* bright red: *tail* short, with an abrupt solid conic tip.

Length from 4 to 10 inches; tail $\frac{1}{10}$ of total length. Abdominal plates from 118 to 134: caudal scales 32 to 38.

Inhabits Pennsylvania; found beneath stones and logs: not very common. Specimens in the Cab. of A. N. S.

Coluber *rigidus*.

C. *rigidus*, Say. Journal of the A. N. S. Vol. IV. p. 239.

Char.—*Above* dark fuscous or blackish: *beneath* yellow, with two black lines.

Total length 20 inches; of the tail 4 inches. Abdominal plates 133: caudal scales 51.

Inhabits the southern states. A specimen in the Cab. of A. N. S.

Coluber *septemvittatus*.

C. *septemvittatus*, Say. Journ. of the A. N. S. Vol. IV. p. 240.

Char.—*Above* brownish, with three blackish lines: *beneath* yellow, with four blackish lines.

Total length 9 inches $\frac{9}{10}$; of the tail $2\frac{1}{2}$ inches. Abdominal plates 143: caudal scales 70.

Inhabits Pennsylvania. Specimens in the Cab. of the A. N. S.

Coluber *porcatus*.

Synonyma. *Coluber porcatus*, Bosc. Manuscript notes.
La couleuvre á stries, Latreille.
Copper-belly snake, Catesby, Carolin. Vol. 2. pl. XLVI.
Coluber aquaticus? Shaw.
La couleuvre sillonnée, Daudin.

Char.—*Above* brown, sprinkled with darker; with obsolete reddish bands on the flanks: *beneath* whitish, spotted with red; each plate at its base marked with two sub-triangular spots: colours on the tail less distinct.

Total length two feet; tail $7\frac{1}{2}$ inches. Abdominal plates 128: caudal scales 68.

Inhabits South Carolina.

Coluber *coccineus*.

Synonyma. *Coluber coccineus*, Linn. Gmel.
Couleuvre écarlate, Latreille, Daudin. Hist. Nat. des Reptiles, pl. 83. Vulgo, *Scarlet-snake*.

Char.—*Above* of a lively blood-red colour, with twenty-one or twenty-two transverse yellowish bands, bordered with black; the first band being situated on the posterior part of the head: *beneath* whitish, immaculate.

Total length 2 feet; tail $\frac{1}{7}$. Abdominal plates from 161 to 175: caudal scales 35 to 43.

Inhabits South Carolina; feeding on grasshoppers and other insects.

COLUBER *heterodon*.

SYNONYMA. *Couleuvre hétérodon*, Daudin; fig.
Heterodon platirhinos, Latreille.
Coluber simus, Linn. Gmel.
Le camus, Daub., Lacépède, Latreille.
Boa contortrix? Linn. Vulgo, *Hog-nose snake*.

Char.—*Above* blackish, sometimes marked with oblique and bifid bands of a pale reddish-gray colour: *beneath* whitish, immaculate: *head* short and triangular: *nose* flattened, pointed, slightly reversed, and carinated above.

Total length from one to three feet. Abdominal plates from 119 to 150: caudal scales 38 to 40.

Inhabits New Jersey; bold, but innoxious. A specimen in the Cab. of A. N. S.

COLUBER *æstivus*.

SYNONYMA. *Coluber æstivus*, Linn. Gmel.
Le verdâtre, Daub., Lacépède, Latreille.
La couleuvre verte d'été, Daudin.
Green-snake, Catesby, Carol. pl. 47, and Bartram, Trav. in North and South Carolina, Vol. II. p. 16.

Char.—*Above* brilliant green: *beneath* nearly white: *body* slightly compressed at the sides: *tail* long and pointed: *scales* very slightly carinated.

Length about two feet; tail $\frac{2}{3}$ of total length. Abdominal plates from 155 to 159: caudal scales from 128 to 144.

Inhabits South Carolina. Specimens in the Cab. of A. N. S.

Coluber *fasciatus*.

Synonyma. *Coluber fasciatus*, Linn. Gmel.
Le vampum, Daub., Lacépède, Latreille, Daudin.
Wampum snake, Catesby, Carol. pl. 58.

Char.—*Above* bluish-black, with more than thirty yellowish marks, alternately disposed on each flank, and a few transverse yellowish lines on the back, bifurcated on the flanks: *head* blackish, covered with plates: *inferior lip* yellowish.

Length four or five feet; tail $\frac{1}{3}$. Abdominal plates from 128 to 138: caudal scales 66 or 67.

Inhabits the southern states. Specimens in the Cab. of A. N. S.

Coluber *getulus*.

Synonyma. *Coluber getulus*, Linn. Gmel.
La chaine, Daub. Lacépède, Latreille, Daudin.
Chain snake, Catesby, Carol. Vol. II. pl. 52.

Char.—*Above* bluish-black, with thirty or more yellowish and transverse stripes; these lines uniting on the flank to a longitudinal or zig-zag line, which at each inferior angle unites to a white spot, prolonged on the abdomen: *beneath* yellowish-white, spotted with bluish-black: *lips* bordered with white: plates of the head black, spotted with white.

Length four or five feet; tail $\frac{1}{8}$. Abdominal plates from 210 to 215: caudal scales 43 to 46.

Inhabits South Carolina.

Coluber *calligaster*.

C. *calligaster*, Say.

Char.—*Above* fuscous, with three rows of black blotches; the vertebral row transversely oblong, and large; a longitudinal row of smaller black blotches on each side: *beneath* reddish-yellow: *tail* corneous at tip.

Length about four feet. Abdominal plates 213: caudal scales 52.

Inhabits Missouri. Specimens in the Philadelphia Museum; one of which has eight sub-caudal entire plates next the vent. The present description is taken from the prepared specimens in the Philadelphia Museum.

Coluber *melanoleucus*.

Synonyma. C. *melanoleucus*, Daudin.

La couleuvre noire et blanche, Idem.

Pine snake and *Bull snake*, Bartram's Trav. Vol. II. p. 18. Vulgo, *Horned snake*.

Char.—*Above* black and white; black colour prevailing on the anterior half of the body: *beneath* yellowish-white, very sparsely spotted with black: *tail* corneous at tip: scales on the back sub-carinated.

Length from four to six feet. Abdominal plates 246: caudal scales 66.

Inhabits the southern states: common in the pine forests of New Jersey. Specimens in the Philadelphia museum; one eight feet in length, from New Jersey

Coluber melanoleucus. Var. Say. *Char.—Above* black and yellowish-white; the black arranged in large blotches, the white in transverse bands: *beneath* yellowish-white, with square blotches of black.

Length about five feet. Abdominal plates 253: caudal scales 80.

Inhabits Missouri. Described from a specimen in the Philadelphia Museum.

Coluber *eximus*.

C. *eximus*, Dekay, (Manuscript Notes.) Vulgo, *House snake, Chicken snake*, or *Thunder and Lightning snake.*

Char.—Above blackish, banded with white; the white bands bifurcating on the sides, and becoming confluent: *beneath* yellowish-white, spotted with quadrangular black spots.

Length: grows to the length of the black-snake, (C. *constrictor*) but is much thicker; the colours are very lively and beautiful. Abdominal plates 250: caudal scales 60.

Inhabits Pennsylvania. Specimens in the Philadelphia Museum. (Not before described.)

Coluber *floridanus*.

C. *floridanus*, (Nobis.) Vulgo, *Red Chicken-snake* of Florida.

Char.—Above red or cupreous, with obsolete, narrow, transverse faciæ, bordered with black: *beneath* yellowish, or reddish-white.

Total length three feet four inches; tail 5½ inches. Abdominal plates 225: caudal scales 47.

Inhabits East Florida. Cab. of A. N. S.

Coluber *vernalis*.

C. *vernalis*, Dekay, (Manuscript notes.) Vulgo, *Green-snake.*

Char.—*Above* of a universal deep green colour: *beneath* greenish-white: *scales* oblong, rhomboidal, not carinate: plates on the head seven.

Total length one foot seven inches; tail six inches. Abdominal plates 127; caudal scales 57.

Inhabits Pennsylvania and New Jersey. A specimen in the Cab. of A. N. S. (Not before described.)

Coluber *atrifuscus*. (Nobis.)

Char.—*Above* uniformly blackish-brown, with strongly carinated, oblong, rhomboidal scales: *beneath* whitish, plates plumbeous at base, and at their union with the lateral scales: beneath the tail plumbeous, spotted with yellowish: *head* covered with seven plates.

Length from two to four feet; tail one-fifth. Abdominal plates 130: caudal scales 50.

Inhabits the southern states; climbing trees in search of game. Described from a specimen in spirits. Cab. of A. N. S.

Coluber *erythrogrammus*.

La couleuvre a raies rouges, Daudin, pl. 83, fig. 2.

Char.—*Above* dusky-black, with a longitudinal, vertebral, red line; and a similar lateral line on each side of the back: *flanks* yellow; base of each scale red: *abdominal plates* red, bordered with yellow,

with black on the middle, and on each extremity of the plates.

Length five feet; tail one-sixth. Abdominal plates 162; caudal scales 49.

Inhabits the United States.

Coluber *doliatus*.

Synonyma. C. *doliatus*, Linn. and Gmel.
L'annelée, Daub., Lacépède, Latreille.
La couleuvre cerclée, Daudin.

Char.—Whitish, with black rings; the rings disposed alternately beneath: more regular on the back: *head* sometimes blackish: *scales* smooth, rhomboidal.

Length seven inches: tail one inch five lines. Abdominal plates 164: scales 43.

Inhabits Carolina.

Coluber *maculatus*.

Synonyma. C. *maculatus*, or *La Couleuvre tachetée*, Daudin.
La couleuvre tachetée, Lacépède, Latreille.
Corn snake, Catesby, Carol. v. 2. pl. LV.

Char.—*Above* whitish, with large reddish spots, bordered with blackish; a double row of these spots forming a zig-zag line: *beneath* whitish, sometimes spotted: *scales* carinated.

Length two feet. Abdominal plates 119. Caudal scales 70.

Inhabits Carolina and Louisiana.

Coluber *guttatus*.

Synonyma. *C. guttatus*, Linn. and Gmel.
La mouchetée, Daudin, Lacépède.
La couleuvre a gouttelettes, Daudin.
Beed snake, Catesby, Carol. v. 2. pl. LX.

Char.—Colour livid, marked above with red and black spots; with small lines on the flanks; with alternately square, black spots beneath.

Length from two to four feet. Nearly of equal thickness throughout. Abdominal plates 223, or 230; caudal scales 60.

Inhabits S. Carolina. Principally found in potato patches.

Coluber *molossus*.

Synonyma. *C. molossus*, or *La couleuvre molosse*, Daudin, and Latreille.

Char.—*Head* elongated, rather flattened, brick-red, with two rays more deep, bordered with brown: lips white, spotted with brown. *Above* of a pale-brick colour, with blackish-red, subquadrangular spots, bordered with brown: sides with smaller spots disposed in fasciæ: *beneath* white, with square, brown spots.

Total length 23 inches; tail 3 inches. Abdominal plates from 220 to 226; caudal scales 60 to 64.

Inhabits S. Carolina, under bark, in the forests.

Coluber *reticularis*.

Synonyma. *C. reticularis*, or *C. reticulaire*, Daudin, Latreille.

Char.—Covered above with whitish scales, bordered with white; giving to the animal a reticulated appearance: dorsal scales smooth and losange form.

Length four feet; tail one-fifth. Abdominal plates 220; caudal scales 80.

Inhabits Louisiana.

3*d* Genus. VIPERA. Daudin.

Characters of the Genus.—Differing from the genus Coluber in having poisonous fangs, and the head contracted in length, and broader posteriorly; covered sometimes with small plates; in others, with scales similar to the dorsal, and seldom with large plates, as in the Coluber.

Vipera *fulvia.*

Synonyma. *Coluber fulvius*, Linn. and Gmel.
Le noire et fauve, Daudin, Lacépède, and Latreille.
La couleuvre fulvie, Daudin.

Char.—Marked with twenty-two black rings; alternately with an equal number of yellow rings, spotted with brown; these last rings being white before and behind: *head* covered with large plates.

Length about two feet; tail $\frac{1}{12}$.

Abdominal plates 218; caudal scales 31.

Inhabits the southern states. It is by no means innocuous, as is asserted by Daudin, and may be fatally mistaken for the scarlet snake, (Coluber coccineus.)

VIPERA *fulvia.* Var.

SYNONYMA. *Coluber fulvius*, Linn. Var. (H.) Harlan. Journal of the Acad. Nat. Sc. Vol. V. p. 154.

Coluber coccineus, Say. Notes on Herpetology, Silliman's Journal, Vol. I.

Char.—Eighteen deep black rings, with as many scarlet or blood-red intervening ones, separated by narrow rings of whitish-yellow.

Total length two feet; tail three inches.

Abdominal plates 202; caudal scales 40.

Inhabits S. Carolina. A specimen in the Cab. of the A. N. S.

4*th* GENUS. CENCHRIS. Daudin.

Characters of the Genus.—Body rather thick, cylindrical: tail short, cylindrical: plates on the front of the head; scales on the back of the head; entire plates on the centre: double plates beneath the anterior portion of the tail, entire plates on the remainder: anus transverse, simple, and without spurs: jaws armed with sharp teeth; poisonous fangs in the upper jaw.

CENCHRIS *mokeson.*

SYNONYMA. *Cenchris mokeson*, Daudin, pl. 70. Coloured, apparently, from a specimen in spirits.

Hog-nose snake, Catesby, Carol. Vol. II. pl. 56. Vulgo, *mockeson.*

Char.—*Head* large, covered with plates before,

with scales behind: scales slightly carinated: *neck* contracted. *Above* brown, covered with transverse black spots; in some places confluent, occasionally transverse striæ: *beneath* dirty white, with smaller black spots.

Length 1½ feet; tail one-fifth.

Abdominal plates 157. Sub-caudal plates 3. Caudal scales 32.

Inhabits S. Carolina.

CENCHRIS *mokeson*. Var.

Among a numerous collection of Reptiles, presented to the Academy, by their corresponding member, Dr. Samuel Blanding, of Camden, S. Carolina, is a remarkable variety of this genus, if not a distinct species. It offers the strongest resemblance to the *Crotalus miliarius* without its rattle.

Char.—*Above* fuscous, with large, black, distinct blotches; *beneath* whitish: *head* broad, and rather flat: *neck* contracted: *body* thick: *tail* short and cylindrical: *nose* flattened and reflected, as in the Coluber heterodon: *tail* strongly corneous.

Length, about two feet.

Abdominal plates 139; sub-caudal plates 11; scales 20.

Inhabits S. Carolina. Cabinet of the A. N. S. (Not before described.)

5*th* GENUS. SCYTALE. Daudin.

Characters of the Genus.—Body robust, elongated,

cylindrical: head thick, obtuse, swollen posteriorly, covered with plates anteriorly, with scales posteriorly: scales carinated, reticulated, and rhomboidal: beneath the abdomen and tail furnished with transverse plates: jaws furnished with sharp teeth; poisonous fangs in the superior.

Scytale *piscivorus*.

Synonyma. *Scytale piscivorus*, Daudin.
Water viper, Catesby, Carol. pl. 43.
Le piscivore, Lacépède.
Le Sytale piscivore, Latreille. Hist. nat. des Reptiles, in-18, Tom. III. p. 163.

Char.—*Above* brown: *beneath* black, with irregular, transverse, yellow bands, or yellow and black, alternately: sides of the neck, black: *head* large; *neck* contracted: *tail* strongly corneous.

Length, five or six feet. Abdominal plates ——? Caudal plates ——?

Inhabits S. Carolina.

Scytale *niger*.

Synonyma. *Scytale noir*, Daudin.
Black snake, Catesby, Carol. pl. 44.

Char.—*Colour* dusky black, sometimes approaching to redness: *head* short and broad: *tail* short: *body* contracted.

Length about two feet. Plates and scales not enumerated.

6*th* Genus. CROTALUS. Linn.

Characters of the Genus.—Body robust, elongated, cylindrical: tail short, cylindrical, terminated with a sonorous rattle, which is a corneous production of the epidermis; this rattle is cast annually, (consequently, no inference as to the age of the animal, can be drawn from the number of pieces which compose the rattles:) head thick and broad, covered before with small plates, behind with carinated scales: abdomen and beneath the tail covered with plates: jaws furnished with sharp teeth; upper jaw with long, curved, poisonous fangs, replaced, when broken, by smaller ones in the rear. A poison bag, occupying the whole length of the upper-jaw, beneath the skin, and opening into the fang at its base.

Crotalus *durissus*.

Synonyma. *Crotalus durissus*, Linn., Gmel., Kalm, and Catesby, Carol. pl. 41.

Caudisona durissus, Laurenti.

Crotalophorus, Gronovius.

Crotalus atricaudatus, or *Le Crotale a queue noire*, Daudin, and Bosc; variety from young age?

Le Crotale durissus, of the French. Vulgo, *Banded Rattle-snake.*

The epithets "banded," and "diamond," have been used by some authors indiscriminately.

Char.—*Above* cinereous, tinged with yellowish or greenish, with transverse, irregular black bands, bordered with a clear tint; each band terminating on the

flanks in a quadrate black spot: *tail* black: *beneath* yellowish-white, freckled with black: *scales* rhomboidal, carinated; a row of smooth, round scales on each flank.

Length four or five feet. Abdominal plates, from 163 to 174; caudal plates, from 16 to 30.

Inhabits the northern and middle states; very common in Pennsylvania. Cab. of the A. N. S.

Observations.—In the month of June, 1826, there was exhibited in Philadelphia, a collection of "*Banded Rattle-snakes,*" 150 in number. These animals were all taken in the counties of Wane, Pike, and Susquehanna, in the state of Pennsylvania, and in Sullivan county, in the state of New-York, during the months of April and May preceding. They had not been offered any food the present year, and yet appeared very lively.

The operation of casting their exuviæ was frequently witnessed. The process, generally, lasted about fifteen minutes: after its completion, the colours of the skin appeared very brilliant. When at rest, the pupil of the eye is oblong vertically, but they possess the faculty of rendering the pupil oval, and even nearly circular.

It is a remarkable fact, that these reptiles were never known to injure each other, though crowded together in close boxes, and subjected to continual irritation from visiters, and the living animals on which they were fed; as if aware of the fatal consequences of their venom, instinctive harmony prevailed amongst them.

The shades of colour offered to view by the animals in this collection were exceedingly various, from light cinereous to deep black, the bands occasionally interrupted, giving the back a spotted appearance, though the characteristic markings were more or less permanent. Several specimens displayed the following peculiar differential traits, if not specific characters.

Char.—*Above* blackish-slate colour, with the carena elevated and tipped with cinereous, giving to the back a longitudinally striated appearance: *back* marked wtth transverse black bands, rather obsolete: *beneath* yellowish, the plates being plumbeous at base, and yellow at the edges; beneath the throat and lower jaw, impure white: *head* very black: *tail* black, striated longitudinally, without bands.

Length between three and five feet.

Crotalus *horidus*.

Synonyma. *Crotalus horidus*, Linn., Gmel., Boddaert, &c.
Caudisona terifica, Laurenti.
Boiquira boicininga, by the Brazilians.
Cascavel, by the Portuguese.
Teuhtlacot zauhqui, by the Mexicans.
Boiquira, Lacépède, Latreille, &c.
Vipera caudisona, and *Anguis crotalophorus*, Ray. Syn. Anim.
Boiquira ayug, Marcgrave, Hist. Nat. Brazil.
Crotalus rhombifer, and *Le crotale a lozanges*, Daudin and Latreille. Vulgo, *Diamond Rattle-snake.*

Char.—*Above* cinereous, with four black lines on the side of the neck; beneath the lines a row of black points longitudinally disposed: *back* with from twen-

ty to thirty black rhomboidal figures, distinct, and having their centre and border of an impure white colour: *beneath* yellowish-white, immaculate: *tail* black, terminating in a rattle, consisting of from one to twenty pieces: *body* above furnished with twenty-nine longitudinal rows of scales, more or less hexagonal; the twenty-seven intermediate ones carinated.

Length from three to six feet; tail about $\frac{1}{9}$. Abdominal plates from 167 to 170: caudal plates from 20 to 30.

Inhabits the southern states and territories; the Antilles, and intertropical parts of America. Cab. of the A. N. S.

Crotalus *miliarius*.

Synonyma. *Crotalus miliarius*, Linn. and Gmel.

Le millet, Daub. Enc. Meth. Lacépède, Latreille, Catesby, Carolina, pl. 42. Bartram's trav.

Le crotale millet, Daudin. Vulgo, *Ground Rattle-snake*, or *Little Rattle-snake*; and by others, *Bastard Rattle-snake*.

Char.—*Above* reddish-gray, cinereous, or fuscous, with a longitudinal series of black spots, rounded and bordered with white: *flanks* with two or more ranges of black spots: *beneath* white, freckled with similar black spots: *scales* on the top of the head suboval and carinated: front of the head and snout covered with nine smooth plates, disposed in four rows.

Length 18 inches; tail $\frac{1}{8}$. Abdominal plates 132: caudal plates 32.

Inhabits the southern states: there are several varieties, differing in the colour and arrangement of the spots. Specimens in the Cab. of A. N. S.

Crotalus *confluentis*.

Crotalus confluentis, Say. Long's Exp. to the Rocky Mountains, Vol. II. p. 48.

Char.—*Above* brownish-cinereous, varied with greenish-yellow; a triple series of fuscous spots, edged with greenish-white, transversely oblong-oval, anteriorly confluent: *tail* banded: *beneath* yellowish-white, immaculate.

Length ——? about three feet. Abdominal plates 197: caudal plates 27.

Inhabits the western territories, near the base of the Rocky Mountains; frequenting the holes of the Prairie-dog, (Arctomys *ludoviciani*, Ord.) Specimens in the Philadelphia Museum.

Crotalus *tergeminus*.

Crotalus tergeminus, Say. Long's Expedition to the Rocky Mountains, Vol. I. p. 499.

Char.—*Above* cinereous brown, with a triple series of fuscous spots, transversely oblong-oval, and obsoletely edged with whitish: sides spotted, with an alternating fuliginous series: a black vitta passes through the eye, and terminates on the neck: *beneath* spotted with black: *tail* above, fasciated with fuscous, terminating with six bifid plates.

Length two feet, two inches; tail two inches. Abdominal plates 152; caudal plates 20; scales at tip 6.

Inhabits the western territories; frequents the cells of the Prairie-dog. Specimens in the Philadelphia Museum.

Description of some new species of NORTH AMERICAN INSECTS. *By* N. M. HENTZ, *professor of modern languages at the University of North Carolina. Read October* 24, 1826.

The insects of which the description follows are rare; of the four, only one has been found more than once by myself, and the others were unknown to several studious entomologists, which is an additional consideration for supposing them to be new.

BUPRESTIS.

B. *harrissi.* Green; eyes black; antennæ black towards the extremity; tarsi black; elytra with two impressions near the base, the internal one uniting with a groove, which follows the suture.

Description.—*Body* bright green, punctured: *head* punctured: *eyes* black: *antennæ* black, tinged with green near the base: *thorax* green, punctured with a longitudinal impressed line: *elytra* with a deep impression at the base, divided in two by a nearly obsolete raised line; a raised line, forming, with the suture, a deep groove, which terminates at the apex; an impression nearer the apex than the middle, formed by the termination of the obsolete line; a diagonal raised line, and another near the margin; in all four raised lines: *pectus*, *postpectus*, and *venter* green, punctured: *feet* green: *anterior thighs* with a large tooth: *tarsi* nearly black.

Length accompanies the drawing. Fig. 1.

Observations.—Found, in the month of May, in Massachusetts.

ELATER.

E. *vernalis.* Bright black, elytra yellow, striate, with five bluish-black spots, one common at the base.

Description.—*Body* bright black, punctured; *antennæ* black; *head* and *thorax* black, punctured: *elytra* yellow, with striæ formed by punctures; each having three bluish-black spots, of which one at the base is common with the other: *pectus, postpectus* and *venter* black, punctured: *feet* black: *tarsi* rufous near the extremity.

Length accompanies the drawing. Fig. 2.

Observations.—This insect, found in May, in the west of Pennsylvania, was new to Mr. Say, Dr. Harris, and all the other entomologists whom I consulted.

AMPHICOMA.

A. *vulpina.* Piceous: thorax, scutel and abdomen, covered with yellow hair; elytra brownish.

Description.—*Head* nearly black, punctured; *antennæ* piceous; *thorax* and *scutel* nearly black, punctured, covered with thick yellow hair: *elytra* brown, turning to a chesnut colour; somewhat darker near the apex: *venter* piceous, covered with yellowish hair, thicker on the sides: *feet* nearly black; *tarsi* piceous.

Length accompanies the drawing. Fig. 3.

Observations.—The discovery of an insect of this

genus, in this country, is peculiarly interesting, as there were reasons for supposing it to be confined to tropical regions. To my friend, Dr. T. W. Harris, of Milton, Mass., I am indebted for useful remarks on this insect, which I submitted to his examination. It was found in June, in the west of Massachusetts, resting on flowers; it flies very much like CETONIA *barbata* of Say, and, like it, visits the ground frequently.

NOTOXUS.

N. *anchora.* Testaceous; horn of the thorax brown at the apex; a black line on the suture of the elytra, reaching a black transverse spot near the apex; a small longitudinal black line nearer the base on the sides.

Description.—*Body* above slightly hairy, testaceous: *head* fuscous; *eyes* black: *thorax* testaceous: *horn* slightly dentate, fuscous chiefly on the sides, the shade continued to the sides of the thorax: *elytra* with a black suture, broadest near the base, not reaching the apex, but united to a large, black, lunate, transverse spot; a black, abbreviated, longitudinal line near the external margin, above the transverse spot, and nearly reaching it: *feet* testaceous.

Length accompanies the drawing. Fig. 4.

Observations.—This beautiful insect is allied to ANTHICUS *monoceros* as well as ANTHICUS *monodon*, described by Mr. Say, but sufficiently distinct from either. I have, as yet, found but two specimens, in the month of July, in Massachusetts.

Remarks on the LIME STONES *of the Mississippi Lead Mines. By* E. JAMES, *Assistant Surgeon, U. S. Army. Read January* 23, 1827.

The Lead Mines of the Mississippi yield at this time an annual product of more than two millions three hundred thousand pounds of lead, and are becoming every day more extensively wrought. The mining operations are at present principally confined to the country about the Merrimack and St. Francis rivers in Missouri, and to the neighbourhood of Fever river, Apple river, near the northern boundary of Illinois, and a district in the country of the Sauks and Foxes, westward of the Mississippi, heretofore known as Du Buque's mines.

At all these localities, and at others where lead has been detected in the same metaliferous range, as near the mouth of the Illinois, on Rock river, at Prairie Du Chien, near the mouth, and at a place about thirty-five miles eastward from the mouth of the Wisconsan, and numerous other points, in a range of eight hundred miles from N. N. E. to S. S. W. the prevailing rock is lime-stone. The idea that these immense deposites of lead are out of place, and have been transported from distant mountains by currents of water or other causes, has been a favourite one with American Geologists, but is wholly unsupported by any of the appearances about the mines.

At many of the mines below Saint Louis, it is true large quantities of ore are found, not in regular veins or beds, or in any manner connected with the

consolidated strata, but disseminated throughout the soil. These masses are not found in connexion with rolled stones, foreign to the district, nor with beds of gravel, or any other substances bearing evidence of having been transported from distant regions. On the contrary, the red clay in which the heaviest masses of galena have been found, is often traversed by veins containing crystallized substances, such as rhombic spar, rock crystal, and sulphate of barytes, so connected with the clay, as to lead irresistibly to the conclusion, that these substances, as well as the ores of lead, have come into their present situations from chemical solution, and probably at a period contemporaneous to the quiet precipitation of the earthy beds. The highly crystalline character of the lime-stone at the lower mines cannot escape the observation of any one who visits that district. This lime-stone in its structure and appearance, so much resembles a loose aggregation of particles of fine white sand, that it is commonly mistaken by the miners for sand-stone. The larger crystalline masses of carbonate of lime, when broken, are often found to contain water included in cavities within the body of the crystals. The appearances ordinarily presented at the mines near Potosi, are as follow:—The shafts descend perpendicularly fifteen or twenty feet, through a tenacious red clay, intermixed with masses of sulphate of barytes, and sulphuret of lead; then succeeds the soft gray rock, which the miners call sand-stone, but which is an aggregate of small crystalline particles of carbonate of lime: this stratum lies horizontally, but

the miners remark that it is uncertain at what depth they will strike it, as its surface is extremely uneven, and marked by deep concavities. It has numerous drusy cavities lined with minute quartz crystals, and is traversed by veins in which these crystals occur, intermixed with barytes and galena. This stratum varies in thickness at different points where it has been pierced from six or eight, to fifteen or twenty feet. It is succeeded by red clay, barytes, &c., similar to that above: below this is a second bed of lime-stone, similar to the former; and near the surface of this, sometimes in it, and sometimes in the red clay, the largest quantities of lead have been found.

In the lead mines about Fever river, and wherever they have been explored on the upper Mississippi, the ore is commonly found in large veins, traversing in an east and west direction, a lime-stone very similar to that above mentioned: these veins ramify in various directions, the small branches commonly running north and south. The ore contained in the branches is not so distinctly crystallized as that found in the larger trunks; it is called "north and south mineral," and is considered more refractory and less valuable than the other. The ore often fills the entire vein, unaccompanied by any incrustation of quartz crystals, or other foreign substance. In these cases, it is common to observe small masses and points of galena scattered in the substance of the rock, near the walls of the vein: at other places the ore is intermixed with rhombic spar, and that variety of iron ore here called "mineral blossom;" from the latter

substance it is very difficult to separate it; and the mineral which is so mixed, looses much of its value on this account. At some of the mines about Fever river, the red clay, the sulphate of barytes, and the galena occur together, as in the lower mines: the lime-stone differs from that of the Merrimack, principally in the circumstance of exhibiting numerous impressions or casts of marine shells; it alternates with beds of sandstone, in many of which is observed the same tendency to form drusy cavities, and incrustations of quartz crystals, as in the lime-stone of the lower mines. Nothing has hitherto been observed in either of these mining districts to justify the opinion that the lime-stone containing the lead, is of more ancient deposition than that of the coal formations scattered throughout the same great field of secondary rocks.

An opinion prevails extensively in the west, that the lime-stones of the lead mine district and its vicinity sometimes exhibit distinct impressions of human feet. This belief has originated from numerous, deep, and exquisitely sculptured figures, representing such impressions; some of which, near the sources of Big river, about ten miles S. E. of mine A Burton, I have carefully examined: they are some of the remaining vestiges of a people who inhabited the country at a time prior to the earliest visits of the Spanish and French, and beyond the reach of the traditions of the Indians of the present day. Other accounts of "impressions of human feet" have been satisfactorily traced to the nodular, reniform, and fancifully shaped masses of flint, which often occur in the horizontal

seams of the lime-stone about Herculaneum; and which, being easily detached, leave impressions bearing a remote resemblance to many things, and sometimes by accident to the human foot: such are the reputed prints of feet preserved in the chimney of a house at Herculaneum. (Missouri.)

The disturbance manifest in the direction of the strata on the borders of the lead mine district, and the great prevalence of crystalline substances among beds and strata containing organic remains, similar in all respects to those of the western coal formations, would seem to indicate that these mineral veins were filled from below, after the consolidation of the secondary rocks had commenced.

Although in the immediate vicinity of the mines on the Upper Mississippi, no coal has hitherto been found, there is reason to think that deposites of this mineral exist in the same series of beds in which the lead is found. Coal and plaister are brought in small masses, by the Indians, from the country about the upper branches of the De Moyen, two or three days journey westward of Du Buque's mines; and coal has been found in extensive beds at a place called by the Chippeways, Maskotank, (the Prairie,) probably less than one hundred miles from the mines of Fever river.

Description of three species of the genus CREMASTOCHEILUS. *By* T. W. HARRIS, M. D., *of Milton, Mass. Read Feb.* 6, 1827.

The genus Cremastocheilus was instituted by Professor Knoch, for the reception of an undescribed insect, sent him from the United States. This insect is rarely met with, eagerly sought by European entomologists, and is the only species of the genus which has hitherto been known. The discovery of three species in Massachusetts, two of which are undoubtedly new, has induced me to furnish an account of them, with a description of this singular genus in detail.

CREMASTOCHEILUS, *Knoch.*

Generic character.—*Antennæ* with the first joint very large: *clypeus* transverse, the anterior margin entire, arcuated, reflexed: *palpi* short; the last joint elongated, the apex obtuse: *mentum* large, oval, concave: *thorax* with the angles dilated, tuberculiform: *tarsi* with equal nails.

This genus is closely allied to TRICHIUS and CETONIA, which, with several other genera, have been separated from the Linnean SCARABÆI. It belongs to the section of Coleopterous insects, with five joints to all the tarsi; and is included in the family SCARABÆIDES or LAMELLICORNES of Latreille, and in the MELOLONTHIDÆ of Leach.

The body is oblong, flattened above; the head covered by the *clypeus*, (*nasus* of Mr. Kirby,) a cowl-like projection, broader than long, elevated in front, the edge folded downwards over the lip: *labrum* concealed beneath the clypeus, emarginated in the middle, dilated and rounded at the sides, where, with the anterior edge, it is corneous; in the centre it is membranous: the mouth closed below by the *mentum*, (*labium*, Kirby,) which forms a deep transverse-oval concavity, occupying the whole of the under side: the *mentum* is deeply emarginate beneath, and the lateral lobes are ciliated on the edge: the *mandibles* are corneous at the summit: the *maxillæ* terminated by a falciform process, and are ciliated and spinous within: terminal joint of the *palpi*, particularly the labial, very long, cylindrical, obtuse; the other joints very short: *antennæ* composed of ten articulations; first joint very large, triangular, incurved; the six next minute; the three last lamelliform, united into a short club: *thorax* transversely quadrate, notched or emarginated near the angles, which are elongated, and somewhat dilated: *scutellum* nearly an equilateral triangle: *coleoptra* broader than the thorax, contracted abruptly, and sinuated behind the base; the margins embracing the sides of the abdomen: *scapularia* not prominent between the thorax and base of the elytra: *meso-sternum* minute, and not produced anteriorly: extremity of the *abdomen* naked, as in Trichius; the penultimate dorsal segment armed with two minute tubercles; one just below the posterior curve of each elytron: *anterior tibia* with two external teeth; one

long, terminal, and a strong conical spur within: *intermediate* and *posterior tibiæ* above very rugose, each with an abbreviated tooth beyond the middle; the extremity crowned with four short teeth, and armed beneath with two, unequal, conical spurs: *nails* simple and equal.

This genus appears much more closely allied to TRICHIUS than to CETONIA. As in the former, the thorax is not so broad as the coleoptra, and the triangular piece or scapular is not interposed between its posterior angles and the shoulders of the elytra; the mesosternum in both is minute, and there is no conspicuous projection of the posterior coxa at the sides of the body, between the intermediate and hinder legs. The clypeus of Cremastocheilus approaches somewhat to that of Trichius, as may be observed by comparing it with that of our large species, T. *eremicola*, KNOCH, and T. *scaber*, BEAUVOIS. In CETONIA the thorax is triangular, nearly as broad at base as the elytra; the scapulars and meso-sternum large and prominent; and, in most species, the coxa is produced, between the intermediate and posterior legs, to an acute angle, conspicuous at the sides, even beyond the margin of the elytra. CETONIA and CREMASTOCHEILUS agree in having the elytra contracted behind the base, in consequence of an emargination of their borders in this respect differing from TRICHIUS. CREMASTOCHEILUS is further distinguished from TRICHIUS by the quadrate shape of the thorax, and its angular processes; but the most distinguishing character of the genus is taken from the *mentum*,

which, as before observed, forms a transverse-oval, cup-like cavity below the clypeus. It was the singular structure of this part, entirely different from that of all other known insects, that suggested to Professor Knoch the name which he has bestowed on the genus.

This genus appears to be peculiar to North America; but we are informed by Mr. Kirby, that it has its representative in Africa, in GENUCHUS. Not having yet seen Mr. Kirby's description of the latter genus, I cannot institute a comparison between it and ours; but learn that the form of the *mentum* is widely distinct.*

The characters of the genus Cremastocheilus, as here given, do not entirely correspond with those laid down by M. Latreille. Indeed, there is some discrepancy in his arrangement and description of the genus, evident on comparison of the *Genera Crustaceorum et Insectorum, Vol. II. p.* 120 and 121, with the *Regne Animale, Vol. III. p.* 286, 288.

CREMASTOCHEILUS *castaneæ?*

Specific character.—Black, polished, pilous, with distinct impressed spots: thorax with a tuft of yellow hairs near each posterior angle; base of the anterior tubercles continued upon the disc into an elevated sigmoid line.

* See Introduction to Entomology by Kirby and Spence, Vol. III. p. 423, and Vol. IV. p. 498. pl. XXVI, figures 34, 35.

Synonym. Cremastocheilus *castaneæ*, Knoch. Neuv. Beitrage. I. p. 115. T. 3. f. 1. Schonherr, Latreille, Hist. Nat. Cr. and Ins. III. p. 152. X. p. 206. Genera Cr. and Ins. II. p. 121.

Description.—*Body* black, somewhat polished, thinly covered with erect yellow hair, and with distinct impressed spots, which are largest on the elytra: *head* with confluent impressions: *antennæ* black, hairy: external margins of the *thorax* nearly straight, obtuse; anterior border deeply emarginated near each angle, within which is situated a minute tuft of fulvous hair; an elevated line, originating from the anterior part of the disc, extends laterally to the angle, is produced forwards, curves inwards, and is terminated by a rounded tubercle; posterior border with slighter emarginations, and the angles with smaller, obtuse tubercles, before each of which is a tuft of yellowish hairs: *elytra* with two inconspicuous, longitudinal, elevated lines, that nearest the suture being most apparent: *scapularia* above with an oval, hoary spot: *podex* with large impressed punctures: *venter* smooth, hairy, not conspicuously punctured: *tibiæ* and *thighs* punctured, hairy: *tarsi* fringed with hairs around the articulations.

The male of this and the succeeding species differs from the female in size, and in having the *podex* rounded; whereas, it is more pointed in the female.

Length of the male rather exceeding $\frac{3}{20}$ of an inch; breadth across the base of the elytra nearly $\frac{4}{20}$ of an inch. Female over $\frac{9}{20}$ of an inch long, and nearly $\frac{5}{20}$ of an inch broad.

The larvæ probably live in the decayed trunks and roots of the chestnut tree. In the month of September, 1824, considerable numbers of the perfect insects were observed in Northampton, Mass., by Professor Hentz, on Round Hill, which is almost entirely covered with a chestnut grove. From Dr. C. Pickering I have received a specimen, which he "found on West Beach, in Beverly, (Mass.) in the autumn."

It is highly probable that this insect is the C. *castaneæ* of Knoch; but not having access to his works, I cannot identify, with certainty, the species; and have been unable to profit by his description, in drawing up an account of the genus. It is a matter, also, of deep regret, that the repeated attempts which I have made to obtain a specimen of the C. *castaneæ* from Pennsylvania have been unsuccessful; but it is still in the power of those in this country, who may have access to the collection of insects made by the Rev. F. V. Melsheimer, the friend and correspondent of Professor Knoch, to elucidate this subject.

Cremastocheilus Hentzii.

Specific character.—Black, opaque; elytra rugose, with confluent impressions; and a transverse, hoary, submarginal spot on each elytra.

Description.—*Head* opaque, with confluent impressions: *clypeus* more reflected in front, and more dilated at the sides, than in C. *castaneæ?* *Thorax* opaque, with impressed spots, having elevated centres; the disc with a longitudinal furrow; lateral

margins slightly curved, acute; anterior and posterior emarginations deep; angles much produced; the anterior ones curving inwards, sub-acute; the posterior ones furnished with a sharp, triangular process, directed backwards and outwards: *elytra* not polished, rugose, with confluent, impressed spots, and two elevated lines, less apparent than in the preceding species. On each elytron, just behind the middle, and near the external margin, a transverse, hoary spot, formed by minute whitish scales: *pectus*, *postpectus* and *podex* punctured: *venter* smooth; hairs on the body so minute as to be discerned only by the aid of a lens.

This species is distinguishable, at sight, from the C. *castaneæ*, by the sharp, angular processes of the thorax, the absence of the tufts of hair near the posterior angles, the general want of polish, and the existence of the canescent spots on the elytra: it is also larger; the male measuring more than $\frac{9}{10}$, or nearly half of an inch in length, and nearly $\frac{5}{10}$ of an inch in breadth. The female is a little over half an inch long, and $\frac{5}{10}$ of an inch broad.

There is a specimen of this insect in Fenton's collection, made nearly thirty years ago. His insects were obtained in the vicinity of the cities of New Haven and New York.

For specimens of the Cremastocheili, I am indebted to my friend, N. M. Hentz, Esq., Professor of Modern Languages, in the University of North Carolina. During his late residence in Northampton, he collected many interesting insects; and this fine insect

is named in honour of him, whose investigations of American Araneidæ will place him among the first of our naturalists.

Cremastocheilus, *Sayi*.

Specific character.—Black, opaque, and setose; mentum with a slight emargination below; thorax retuse, or excurved each side of the base, and furnished with a prominent, rounded tubercle at each angle.

Description.—*Head* with large, dense cicatrices, and short, erect, yellowish hairs: *mentum* large, transverse-oval, prominent beyond the inferior edge of the clypeus; the lower margin ciliated with a few very short hairs, and a slight central emargination: *thorax* with deep punctures or cicatrices, (as in C. *Hentzii*) each of which furnishes an erect, yellowish bristle, or coarse hair: anterior angles excurved, each with an incurved tubercle, rounded and compressed at base, and subacuminate at tip; and between the tip and base verriculate, or furnished with a tuft of very short, ferruginous hairs; lateral margin regularly curved to the posterior angles, where the thorax is broadest; posterior angles rounded and excurvated to the base; at the termination of which, on each side, is a somewhat rounded tubercle, compressed, excurved, and furnished beneath the tip with a minute verriculum of rufous hairs: *elytra* opaque, with distant, irregular, deep, setiferous punctures: *body* beneath with distant punctures, and depressed hairs.

Length of the male, between seven and eight-twentieths of an inch. Discovered by Professor Hentz and myself, beneath a stone on Round Hill, on the 16th of May, 1826.

This insect resembles C. *Hentzii*, in the distribution of the punctures, but is distinct at sight from that species, by wanting the hoary spots on the elytra; and also from that and C. *castaneæ?* by the greater quantity and length of the bristles with which it is clothed. The mentum is proportionably larger, and more regularly transversely oval; it is also less ciliated than in both the others, and has but a very slight emargination beneath. The thorax differs greatly; the disc is convex, and the lateral margins are regularly arched: the anterior tubercles resemble in shape those of C. *castaneæ*, but are not continued into an elevated, sigmoid line on the thorax: the posterior margin is deeply excurved each side of the basal line, and the tubercle is situated within this emargination, and below the plane of the disc: there are no fascicles of hairs on the thorax, in front of the posterior tubercles.

To the distinguished author of "American Entomology" this insect is dedicated.

LIST OF DONATIONS

TO THE

MUSEUM

OF THE

Academy of Natural Sciences,

During the years 1825 *and* 1826.

Articles presented.	Donors.	When presented. 1825.
Hydraulic Lime, *Womelsdorf, Penn.*	Wm. S. Vaux.	January.
12 specimens Marine Shells, *Alvarado.*	J. S. David.	February.
Fossil Vertebra, *Maryland.*	J. Gilliams.	
Collection of Insects, *India.*	Dr. R. Coates.	March.
2 specimens of Feldspar, *Dixon's Farm, Del.*	Geo. Spackman.	April.
6 species Marine Shells, *China.*		
Large Alcyonium, *Bengal Bay.*	Dr. R. Coates.	
Head of an Echineis.	Dr. Hays.	
Suite of Rocks; from the *Barren ridge, Chester Co., Pa.*	Dr. Darlington.	May.
Species of Scutella, *Cape May.*	Thos. F. Leaming.	
Collection of Diseased Bones of the human subject. Specimen of the Ilex Aquifolium, etc.	Dr. E. Rousseau, Paris.	June.
Fossil Echinus, *Cuba.*	W. H. Keating.	
Nacrite, *Delaware Co., Pa.*	Dr. Darlington.	July.
Specimens of Plants.		

Articles presented.	Donors.	When presented.
		1825.
Skull of a Sandwich Island chief. Specimen of Cassa from *Hayti*, together with some weapons of the aboriginal Haytiens.	Dr. Gibbon.	
Specimens of Anatifa, *Gulf stream.*	Capt. Hewett.	
Solen Costatus, *Coast of New England.*	C. A. Lesueur.	August.
Several specimens of Ostracion, and another of Dog-fish.	Capt. Stelwagen, U. S. N.	
2 Colubers, 1 Ostracion, 2 species Asterias, a Fasciolaria, and a strombus, *Florida.*	Lieut. Gaunt, U. S. N.	
2 Trilobites, *Trenton Falls, N. Y.*	C. L. Bonaparte.	
Shells of seven species of Tortoise. 2 vials fresh water Crustacea. Vial containing Scolopendræ. 4 vials and 2 boxes of Insects. Skull of the Canis Virginianus. Bone of the Penis of the Raccoon. 9 vials, containing as many species of Colubers. 5 vials of Lacerta and Salamandra. 5 specimens Fossil Shells, *Santee Canal.* 5 specimens of Granite, Limestone, &c. A specimen of Elastic Sandstone, near *Catawba Springs, N. C.* 2 specimens Tuckyhoe, and 1 of Convolvulus Panduratus.	Dr. Wm. Blanding, of Camden, S. C. through Dr. Harlan.	Sept.
21 specimens of Minerals, *Easton, Pa.*	G. Spackman.	
Prismatic Porphyry, *Cape de Gate, Spain.*	W. Maclure.	
Specimens of Anatifa, *Gulf stream.*	Capt. Hewett.	

Articles presented.	Donors.	When presented.
		1825.
Amphiuma Means, *Camden, S. C.*	Dr. Harlan.	
Numerous specimens of Anodonta Marginata, Unio Purpurea, and Unio Nasuta.	Thos. Fisher.	
Specimens of Syngnathus and Leptocephalus.	Capt. H. Bache, U. S. Top. Eng.	
Salamandra picta.	Dr. Harlan.	October.
Collection of Fossils, *Paris Basin.*	W. Maclure.	
Calappar Cristata? *Gulf stream.*	Capt. Hewett.	
Specimens of Mollusca.	Capt. Harman.	
Extra-uterine Fœtus.	Dr. Porter.	
Salamandra Flavissima, (new species,) and a specimen of Persian Tobacco.	Dr. Harlan.	
3 species of Birds, (prepared.)	Jas. Griffith.	November.
Scutella Quinque-radiata, in the fossil state. 3 specimens. *Georgia.*	Dr. Boykin	
Lepidolite, *Gardiner, Maine.*	Dr. Holmes.	
Mygale Advicularia, Cerambix, and a bottle containing Scolopendræ and other insects, *Cuba.*	Mrs. M. Eyre.	
Asterias Helianthus, and a specimen of Pyrasoma, *Guasco, in Chili.*	W. W. Drinker.	
Substance from the Oviduct of a Fowl, containing an egg.	Geo. Ord.	
18 specimens of Minerals, *South America.*	Don Jo. S. Rebello, through Mr. Lea.	
Specimens of Oxide, and Sulphuret of Antimony, *Tornavera, Spain.* Carbonate of Barytes, and a specimen of Iolite.	W. Maclure.	
Specimens of Macle and Trilobite.	C. A. Lesueur.	

Articles presented.	Donors.	When presented.
		1825.
Venus Mercenaria, 2 specimens.	Geo. Ord.	
Collection of Rocks and Fossils, *Caen, in Normandy.*	W. Maclure.	
Group of Producti, *Rochester, N. Y.*	Dr. T. H. Harris, of Rochester.	Decem.
Worms from the human urethra.	Dr. Porter.	
Porcupine Fish, preserved in spirits.	C. A. Poulson.	1826. January.
2 specimens Pecten Nodosa, 2 Serpulæ, a Natica and a Chama, *Coast of Alvarado.* Also, a specimen of Semi-opal, *Mexico.*	Capt. J. Hemans.	March.
Micaceous Iron ore, *Reading, Pa.*	E. Durand.	
Salmo, (*Salmo Peleranus?*)	Dr. Mease, through Dr. Harlan.	
Several specimens of Green and Blue Carbonate of Copper, *Arod Mine, S. A.*	R. Swift.	
2 shells, viz: a Malleus and a Turbo.	Captain M'Kibbin, through Mr. Ord.	April.
Sulphate of Barytes; a group of crystals.	S. W. Conrad.	
21 specimens, showing the varieties of the Green-stone of *Scotland.* 45 specimens, showing the stratification of the north end of *Salisbury Craigs, near Edinburgh.* 14 specimens of the Rocks of the Hebrides, etc.	Dr. S. G. Morton.	May.
Specimen of Loligo, *Indian ocean.*	Capt. Jas. Hamilton.	
Methodical Table of Oviparous Animals.	I. Lea.	
29 specimens of European, and 11 of American Minerals.	Dr. S. G. Morton.	May.

Articles presented.	Donors.	When presented.
		1826.
Collection of Minerals, from *Lockport, N. Y. and from Virginia.*	C. W. Pennock.	
Species of Iguana, *West Indies.*	G. Stewardson, through Mr. Conrad.	June.
Minerals, *Washington, Missouri.*	Lieut. Thomas, through Mr. Poulson.	
Collection of Minerals, and a suite of the lavas of *Vesuvius.*	Dr. R. E. Griffith.	
Collection of Minerals, *Lake George.*	J. P. Wetherill.	
4 Geological specimens, vicinity of *Hartford, Conn.*	Dr. I. Hays.	
Suite of the Granite rocks of *America.*	Dr. S. G. Morton.	
3 specimens of Minerals, *Devonshire.*		
6 specimens of Minerals.	Geo. Spackman.	
A collection of the fresh water Tortoises of the U. S. preserved in spirits; consisting of 12 specimens, and embracing 9 species.		
A collection of the Batracian Reptiles of the U. S. viz:—		
5 species of Rana.		
2 do. Hyla.		
2 do. Salamandra.		
A specimen of Bufo Musicus.	Dr. Harlan.	June.
——— Taphozous Americanus.		
Several American Quadrupeds, viz:—		
Mus Campestris, and young of the same.		
Jerbillus Canadensis.		
Sorex Brevicaudatus, Arvicola Xanthognatus, old and young, and Scalops Canadensis.		

Articles presented.	Donors.	When presented.
		1826.
Siliceous Carbonate of Lime, with Shells, near *Paris.*	W. H. Keating.	
Secondary Lime-stone, *Hudson river.*	Dr. Hays.	
Amphibole.		
Chelonura Serpentina, male and female, preserved in spirits.	Dr. Harlan.	July.
Fresh water Tortoise, supposed to be a new species, *tributary streams of the Chesapeake.*	Z. Collins.	
Crocodilus Lucius, preserved in spirits.	Dr. Wetherill.	
Skull of the Manatus Latirostris, *coast of Florida.*	Dr. Harlan.	
Indian skull, from a cave at *Golconda, in Tennessee.*	Dr. Harlan.	
Specimens of Coluber Constrictor, and C. Aquaticus; also, a specimen of Rana Clamata, and another of the Cistuda Clausa; all preserved in spirits.		
Basanite, found in digging a well in this city.	Geo. Ord.	August.
7 species fresh water shells, *South Carolina.*	L. Vanuxem.	
Large collection of fresh water Shells, from *Ohio.*	Major Long.	
Fossil Bone, *Delaware and Ches. Canal.*	Jos. Carr, through Isaac Lea.	
Portunus Pictus, *Cape May.*	Isaac Lea.	
Menobranchus Lateralis, *Lake Erie,*	Maj. Delafield, of N. Y.	
Polished Stalactite, and Fossil Bones in Limestone, *Gibraltar.*	C. Hedelius	
A Porphyry Mortar, from *Sweden.*		

Articles presented.	Donors.	When presented.
		1826.
10 specimens Vegetable Impressions in slate, *Swetara, Pa.* 2 specimens Argillaceous Iron, with organic impressions, and another of Shell Limestone.	Dr. I. Hays.	
Exogyra Costata, 2 specimens, *Delaware and Chesapeake Canal.*	W. S. Newbold, through Dr. Morton.	
Iron Pyrites, in slate, *Lebanon, Pa.*	S. Mifflin.	
Impressions of Fish, in slate, 2 specimens, *Westfield, Conn.*	Dr. Harlan.	September.
A Snow Owl, Strix Nyctea of Wilson; shot in Burlington Co., N. J., in 1825.	J. P. Wetherill, C. W. Pennock, and Dr. S. G. Morton.	
Bottle of Reptiles, *Lycoming Co., Pa.*	Dr. R. E. Griffith.	
Fossil Crab, *China.*	Dr. T. Ritchie.	
Specimens of the Tertiary Formation at *York, Pa.* and Iron ore from *Genessee, N. Y.*	Dr. Harlan.	September.
Vertebra of a whale, *Cape May.*	Wm. Milnor.	
White Statuary marble, *Bloomsbury, Maryland.*	Gen. Parker.	
Specimen of Rana Pennsylvanica, (Harlan.)	Dr. Harlan.	
9 specimens of American fresh water Bivalve Shells.	S. W. Conrad.	
A large Glass Cylinder.	S. P. Wetherill.	
9 Fossil specimens, *Columbia Co., N. Y.*	Dr. R. E. Griffith.	
14 specimens of Organic impressions in slate, *Wilkesbarre, Pa.*	Dr. S. G. Morton.	
Larva of a species of Sphinx.	G. W. Carpenter.	
Crystallized Zirconite, *Buncomb Co., N. Carolina.*	L. Vanuxem.	
Auriferous Pyrites.		
Asteriæ, *Sullivan's Island, S. C.*		

Articles presented.	Donors.	When presented.
		1826.
Portion of the Fossil Jaw of a Crocodile; fossil teeth, shells &c. *Burlington Co., N. J.*	S. P. Wetherill.	
Stem of an Encrinus, in slate.	Jas. Read.	
Carbonate and Sulphate of Lime, *Goat Island, Niagara.*	Dr. I. Hays.	
Fragments of Human Bones, and those of the Deer, dug up near *Phœnixville, Pa.*	Dr. Ellerson, through R. Haines.	
Salamander in Spirits, *Wabash river.*	Jas. M'Murtrie.	September.
2 boxes of Insects, Coleoptera, Neuroptera, &c., *China.*	Dr. Emerson.	
Species of Cancer, *Canton.*		
Tabasheer, from the Indian Bamboo.	G. Blakie.	
2 specimens Chalcedony, *Little Britain, Pa.*	Dr. Harlan.	
Pipe clay, *Alvarado.*	Capt. Harman.	October.
Steatite, *China.*		
Organic remains, *Longbranch, N. J.*	J. Read.	
Box of Seeds, from the Botanic gardens at *Calcutta.*	Dr. Wallack, of Calcutta.	
Specimen of the Halcus Bicolor.	S. V. Merrick.	
Talon of a Bald Eagle.	Jas. B. Smith.	
Wood perforated by the Teredo Navalis.		
5 specimens of polished Fossil Madrepores, *Torbay, in Devonshire, England.*	Dr. S. G. Morton.	
2 specimens Fossil Terebratulæ, and several Belemnites; *Allentown, N. J.*	J. P. Wetherill.	
2 specimens Cadmia, *Holly Furnace, Conn.*		
Charcoal on Anthracite, *Lehigh, Pa.*	Dr. I. Hays.	
Helix Alternata in recent Limestone.		

Articles presented.	Donors.	When presented.
		1826.
420 species of British plants.	F. Hodgson, through Dr. Morton.	
Lignite, *Delaware and Chesapeake Canal.*	J. Clements, through Mr. Lea.	
10 specimens of Minerals, *Northampton, Mass.*	Mr. Walker, through Mr. Carpenter.	Oct.
Bituminous Coal, *Tioga Co. N. Y.* 17 specimens of Organic remains, from same place. 9 specimens of Vegetable Impressions, on slate, *Laurel Hill, Pa.* another from *Mount Carbon.* Terebratula, *Laurel Hill.* Anthracite, *Stoney Creek, Pa.*	Dr. R. E. Griffith.	Nov.
150 specimens of Seeds used in domestic economy.	Z. Collins.	
Fragments of Fossil Bones, and specimens of Exogyra Costata, *Del. and Ches. Canal.*	W. S. Newbold, through Dr. Morton.	
Asbestus in Serpentine, *Chester Co. Pa.* Madrepore on a recent Oyster.	Dr. Harlan.	
8 specimens of Minerals, *Mass.*	N. M. Hentz.	
2 specimens Feldspar, *Dixon's, Del.*	J. P. Wetherill.	
Phosphate of Lead, *Ecton mine, Pa.*	C. Sheffield, through Dr. Griffith.	
Tridachna Squamosa, both valves.	J. S. Phillips and Dr. Morton.	Dec.
Triton Variegatum, and Triton Odiferum.	M. Thomas.	
3 specimens of Amber, 1 of Retinasphaltum, 1 of Lignite, and 12 species of Fossil Shells, *Deep Cut of the Delaware and Chesapeake Canal.*	H. Lea, through Messrs. Wetherill, Harlan and Morton.	
2 species Ammonite, *Whitby, in Yorkshire, England.*	Dr. S. G. Morton.	
Asterias, *Mediterranean.*	Capt. Hewett.	

Articles presented.	Donors.	When presented. 1826.
Fossils, principally Madrepores, *Drummond's Island, Lake Superior.*	Dr. J. K. Mitchell.	
Siren Lacertina, (Lin.) *Camden, S. C.* Vespertilio Arcuatus, *New Hampshire.* Specimens of Rana, dissected to show the Spawn.	Dr. Harlan.	
Agama Umbra, (Daud.) *California.*	S. P. Wetherill.	
Species of Sea Nettle, dried.	Capt. Hewett.	
Anodonta Cataracta, (Say) *Junction of Clark's Creek and the Swatara.*	S. Mifflin.	
Tail of the Raia, 2 specimens. *New England.*	Z. Collins.	

On the 13th December, 1825, forty-two members of the Academy presented to the Institution a framed portrait of their president, William Maclure, Esq., painted by Mr. Thomas Sully of this city.

In July 1826, Mr. C. W. Pennock presented a map, constructed by himself, of *Wier's cave*, in Virginia.

ALPHABETICAL INDEX

TO THE FIFTH VOLUME.

T.

PLATES TO VOLUME V.

Plate I. Sphœria.

fig. 1. S. mucronata, natural size. *a*, with analysis; *b*, magnified piece of clavula; *c*, section magnified.

fig. 2. S. vernicosa, and analysis; *a*, nat. size; *b*, section; *c*, the same magnified.

fig. 3. S. subterranea, nat. size.

fig. 4. S. geoglossum. *a*, with magnified analysis of *b*, and *c*, section.

fig. 5. S. flabelliformis. *a*, nat. size; *b*, and *c*, magnified specimens; *d*, section; *e*, magnified surface of fertile ones.

Plate II. fig. 6. S. pocula. *a*, nat. size; *b*, and *c*, magnified bunches; *d*, section magnified.

fig. 7. S. teres. *a*, nat. size; *b*, section magnified; *c*, magnified specimen.

fig. 8. S. annulata. *a*, nat. size; *b*, one caspes magnified; *c*, and *f*, sections; *d*, a single sphœrula, magnified from above; *e*, in profile.

fig. 9. S. hidnicola. *a*, nat. size; *b*, *c*, and *d*, magnified; *e*, section.

fig. 10. S. callostroma. *a*, nat. size; *b*, *c*, and *d*, magnified heaps; *e*, section.

fig. 11. S. fusco-purpurea. *a*, nat. size on bark; *c*, magnified, showing the barren margin; *d*, section.

Plate III. Salmo microps.

Plate IV. fig. 1. Murœnophis macularia.
fig. 2. zebra.
fig. 3. ocellata.

Plate V. Saurus minutus.

VI. Selenia aurea. *a*, the flower and calyx, nat. size; *b*, capsule, and *c*, seed of the same magnitude.

VII. Streptanthus maculatus. *a*, lateral branch, nat. size; *b*, the silique; *c*, a petal; *d*, seed.

VIII. Anemone nuttalii.

IX. Simia concolor.

X. Organs of generation of the Hermaphrodite Simia concolor.

XI. Testudo elephantopus.

XII. Section of the shaft and lateral drifts of the Perkiomen lead mine.

XIII. fig. 1. Buprestis harrisi.
fig. 2. Elater vernalis.
fig. 3. Amphicoma vulpina.
fig. 4. Notoxus anchora.

SIMIA CONCOLOR. Harlan

R.M Bird. del

P. Kearny. S.

Fig 1.

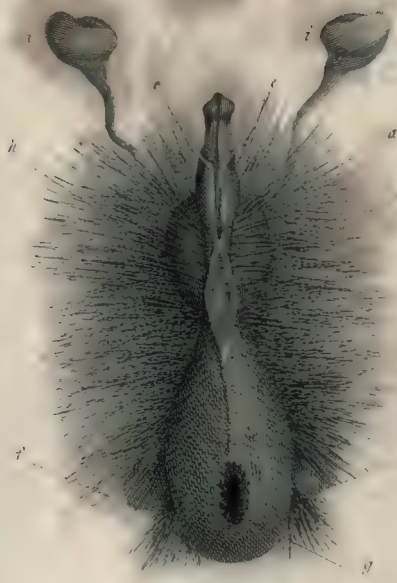
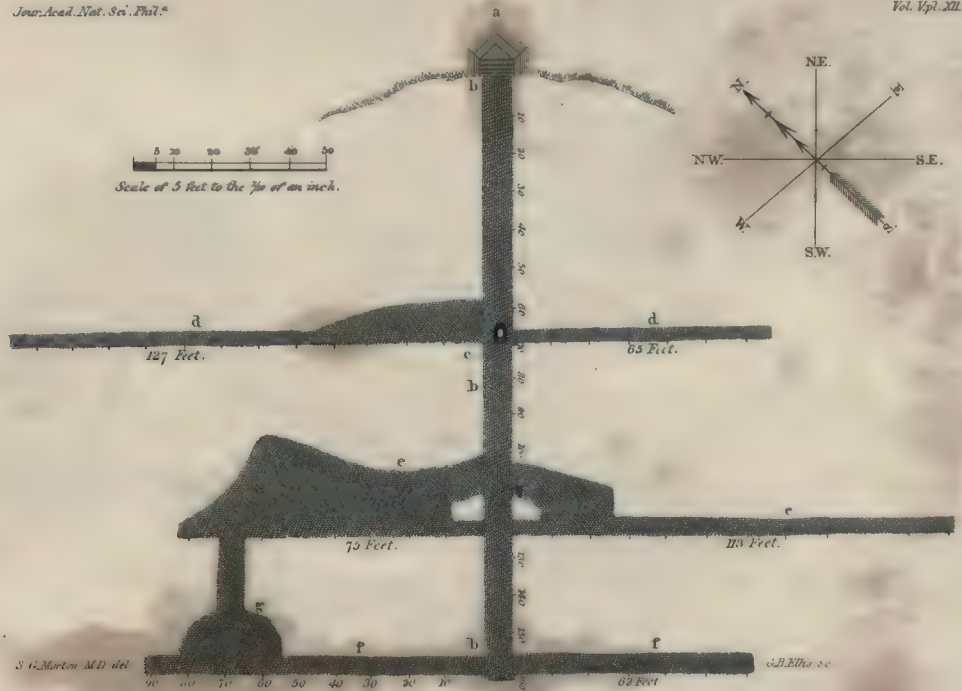


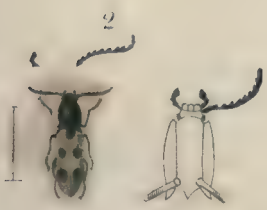
Fig. 2

Sternal Plates

TESTUDO ELEPHANTOPUS. Harlan



Section of the Shaft and Lateral Drifts of the Perkiomen Lead-mine.


2


1


4


3