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ter displaying the wealth and resources of Philadelphia, concludes by observing :

“ The property at stake, then in the city and county of Philadelphia, amounts to near two hundred millions of dollars !

“ Foreign commerce, during the golden days of neutrality, and a monopoly of the best share of the western trade, have heaped together, in this small district, to vast a treasure. But our foreign commerce is less extensive and less gainful now, and rivals to the north and south are about to deprive us of our home trade. We must defeat their efforts, we must maintain, protect, and increase these riches. We can and will baffle the attempts of our neighbours. We have a motive in the defence of our property ; we have the means in that property itself ; and nature points out to us the road ; a road, broad, fair, safe, and interminable ! If we follow it, we shall not only retrieve our lost ground, but insure to ourselves, without the possibility of rivalry from any quarter, the most brilliant career and highest destiny. We may command at one and the same time, the trade of the Great Lakes—of the Ohio—half the Mississippi—the whole of the Missouri—three parts of Pennsylvania, and one third of New-York ;—and in such event—an event in train to be realised—we shall see the expectations of the great founder of our city fulfilled. We shall behold store-houses and commercial streets lining the banks of the Schuylkill, and receding east, until they meet those of the Delaware, and thus cover the vast area marked out by Penn, as the ground-plot of his city of brotherly love.”

In sober earnest, we are induced to consider such enthusiastic declamation as inconsistent, to the last degree, with any thing like candid discussion. Great Britain and the United States may be rivals ; New-York and Pennsylvania should never be. The citizens of these two great influential states may emulate the exertions of each other, but forming, as they actually do, the point of the moral arch of the United States, they must give mutual support.

We must close this article by recommending it to our fellow citizens, individually, of every state in our widely extended confederacy, to adopt the language of Governor Clinton, as his motto, and to exclaim, when any useful practicable plan is proposed, “ From a full persuasion that the prosperity of our country will be best advanced by multiplying the markets for our productions, and by an intimate and beneficial connexion between the different members of the confederacy, I CONSIDER IT A SACRED DUTY TO OVERLOOK LOCAL CONSIDERATIONS, and to promote to the utmost of my power, *this, and every other plan*, which may be subservient to these important objects.”

C—cs.

ART. 5. MUSEUM OF NATURAL HISTORY.

Farther Account of Discoveries in Natural History, in the Western States, by Constantine Samuel Rafinesque, Esq. communicated in a Letter from that Gentleman to the Editor.

LEXINGTON, OCT. 5, 1818.

SIR,

I HAVE, as you know, been recently very earnestly engaged in collecting materials, in the wide-spread garden of nature, for increasing the stock of knowledge. Of some of my discoveries you have already heard, by my communications to the Lyceum ; but you can scarcely form an idea of the extent of the whole, —they exceed my most sanguine expectations. The intention of these lines is

to communicate the following sketch of discoveries, in addition to those you have already seen, for publication.

Yours, &c.

C. S. RAFINESQUE.

I. IN GEOLOGY.—I have made a new and complete map of the valley of the Ohio, or its ancient bed, from Pittsburg to the mouth of the Wabash. I have ascertained that the falls of the Ohio were once much below their actual site, between Salt river and Sinking creek, where the river runs through a narrow and deep valley of less than half a mile, being confined between a chain of large hills, which take the name of Silver Hills in Indiana, and Barren Hills in Kentucky ;

and I have observed the localities of about 200 fossil remains.

II. IN MINERALOGY.—I have discovered or observed several rare substances, such as globular geodes of chalcedony, some of which are perfectly solid inside; a variety of beautiful variegated onyx clays; many stalactites of the most singular shape, like flat horns, branched corals, organs, &c.; a beautiful crystal of carbonate of lime, the fascicles hexagonal, club-shaped, and articulated; the lithographic stone, the typographic marble, &c.

III. IN BOTANY.—I have collected about 700 species of plants in the western states, while only 200 had been stated to be found there. Among those are more than 12 new genera, and about 80 new species, undescribed by the late authors, even by Pursh and Nuttall. I beg leave to select the descriptions of one among these new genera, and of three new species.

N. G. NEVROSPERMA. (Nat. fam. of *Cucurbitacea*, in the sexual system *Monoecia Diadelphica*.) Monoical. M. flowers. Calyx 5 partite, corolla 5 partite, stamina 5, diadelphous, 2 filaments in the centre, 2 glands between them, one filament bears 2 anthers, the other 3. Fem. flowers. Calyx and corolla similar, ovary inferior, adherent, oblong, verrucose on 8 rows, a thick trifid style, surrounded by 3 glands, 3 bilobed stigmas. Fruit, a verrucose berry, 3 locular or monolocular by abortion, 3 to 9 seeds, surrounded by a fleshy arilla, elliptical flat, margin truncate, surface nervose, reticulate.

Nevrosperma cuspidata. A smooth vine, stems slender, angular, leaves petiolate, petioles canaliculate, lucid, palmate, sinuate-dentate, teeth cuspidate, flowers axillary, solitary, on long tortuose peduncles, with a reniform cucullate bractea. Obs. A fine annual plant, native of the country west of the Mississippi, cultivated in Kentucky, under the name of Balsam Apple, as an efficient vulnerary. I have collected specimens and seeds of this plant.

1. N. Sp. *Asclepias vanilla*. Stem simple, pubescent above, leaves opposite,

petiolate, lanceolate, base rounded, acuminate, smooth, ciliolate, umbels axillary erect, auricles, ovate, obtuse, cucullate, split inside, cornicles equal to them, curved inside. A fine small plant about a foot high; the flowers are of a lilac colour, and smell like *Vanilla* or *Heliotrope*. It grows in Kentucky, near Green River.

2. N. Sp. *Dodecatheon angustifolium*. Leaves lanceolate or oblong cuneate, acuminate, entire, flat, very smooth, scape elongated, multiflora bractea, lanceolate, peduncles shorter than the flower, anthers longer than the corolla. It grows near the Wabash, in the prairies. It is the third species known of this interesting genus.

3. N. Sp. *Cuscuta aphylla*. Stems evanescent, flowers in large and thick glomerules round the stems of other plants, sessile, crowded, bracteolate, calyx 4 fid, corolla tubulose, short, 4 fid, 4 jutting stamens without appendages, ovary oboval, two long filiform styles with capitate stigmas. A paradoxical plant, which, when in blossom, appears destitute of stems and leaves; it surrounds the stems of many singenous plants in the prairies of Indiana and Illinois, near the Wabash, and in the barrens of Kentucky, near Salt river and Sinking creek.

IV. IN ZOOLOGY, my discoveries are particularly important, consisting of about 25 new undescribed quadrupeds, 30 new birds, about 32 new reptiles or snakes, lizards and turtles, 64 new fishes out of 68 which inhabit the Ohio, 3 new crustacea, 40 new insects, nearly 100 new living shells, fluviatile and terrestrial, and about as many fossil shells, about 12 new living worms and polypes, and more than 100 new fossil ones. Among so many undescribed beings, it must follow, that several may constitute new genera, and I have accordingly ascertained already 2 N. G. of birds, 12 N. G. of fishes, 1 N. G. of shrimps, 10 N. G. of shells, and 8 N. G. of polyps, &c. but many more N. G. may afterwards be perceived among them. I propose to select 8 N. G. and 10 N. Sp. in order to convey an idea of the whole.

1. N. G. *Rimamphus*. (A bird. Natural family of *Leptoramphus*.) Bill subulate, mandibles convex, leaving an opening between them, the lower one straight, the upper one longer, curved, and not notched, nostrils naked. *Rimamphus citrinus*. (Citron Open-bill.) General colour of a citron yellow, back rather olivaceous, five brown and raised feathers on the bend of the wings, quills tipped with brown, bill and feet flesh-coloured. A beautiful little bird, about 5 inches long, the tail, which is truncate, is one inch and an half, the wings are short. It is a native of the south, and was shot near the falls of Ohio, in Indiana, in the month of July. Very scarce. It lives on insects, and darts on them from the trees. It does not sing.

1. N. Sp. *Sirena maculosa*. (A Reptile.) Body olivaceous brown, covered with large unequal blackish spots, and a thick mucus, a longitudinal furrow on the back, tail shorter than the body, compressed, lanceolate, obtuse, blackish, margin reddish. This spotted siren, bears the generic name of *Water Puppet*, along with the *S. lutea* and *S. fusca*. It is about one foot long, the head and body are depressed. It has very small teeth, and the upper jaw is the longest. Found in the Ohio.

2. N. Sp. *Crotalinus cyanurus*. (Blue-tail Rattlesnake.) Head fulvous, with an oblong black spot under the chin, body yellowish, with large transversal brown bands, tail black above, blue underneath. A large species, sometimes 5 or 6 feet long, found in the barrens of Kentucky. The rattle is fulvous.

3. N. Sp. *Crotalinus catenatus*. (Chain-ed Rattlesnake.) Brown above, with a row of white spots similar to a chain, white underneath, clouded with black. A small species, one foot and an half long, found by Mr. Bradbury, on the prairies of the Upper Missouri, it had 144 abdominal scales, and 27 caudal scales.

4. N. Sp. *Crotalinus viridis*. (Green Rattlesnake.) Body slender, green, with several rows of brown oblong spots above, belly white. A curious species, found

also by Mr. Bradbury, in the Upper Missouri. It was 2 feet long, and had 3 rattles.

2. N. G. *POMOXIS*. (A fish. Natural family of *Leiopomes*.) Body oblong, compressed, one dorsal fin opposed to the anal, vent nearer to the head than to the tail, no appendage to the thoracic fins, mouth toothless, gills without scales and mutic. *Pomoxis annularis*. (Ring-tail Pomoxis.) Body silvery, scales ciliated caduc, back and fins olivaceous, a gilt ring at the base of the tail, lateral line straight, lower jaw longer, tail forked; anal, dorsal and caudal fins tipped with blackish, pectoral fins extended beyond the vent. A curious small fish of the Ohio, rather scarce, length 2 or 3 inches, vulgar name Silver Perch. The number of rays in the fins is as follow, dorsal fin 20 rays, whereof 6 are spinescent; anal fin 22, whereof 6 are spinescent; thoracic fin 6, whereof one is spinescent; pectoral fin 15; caudal 28.

3. N. G. *NOTURUS*. (A fish. Natural family of *Silurides*.) Differs from *Silurus* by having the second dorsal fin connected with the tail, or forming a single fin. *Noturus flavus*. (Yellow Back-tail.) Entirely of a rufous yellow, tail truncate, decurrent on the back above the opposite vent, lateral line nearly straight, an obtuse spine at the dorsal and pectoral fins, upper jaw longest, 8 unequal barbs, 2 lateral longest, 2 superior, 4 inferior. Size from half a foot to two feet, common in the Ohio, dorsal and pectoral fins with 7 rays beside the spine, abdominal fins with 8, anal with 14. Vulgar name, Yellow Catfish.

4. N. G. *SARCHIRUS*. (A fish. Nat. fam. of *Siagones*.) Body elongated, rather compressed, scaleless, jaws elongated, toothed, pectoral fins adipose and round, dorsal fin behind the anal, tail irregular, abdominal fins with 6 rays. *Sarchirus vittatus*. (Ribbon Fish.) Jaws narrow, the upper longer, one-sixth of whole length, body olivaceous brown above, a longitudinal black band from the eyes to the end of the tail on each side, white beneath, with 2 rows of black dots, tail ovate, lanceo-

late, acuminate, decurrent beneath, the dorsal, anal, and abdominals with 2 oblique black bands. A wonderful fish of the Ohio, from half a foot to one foot in length, but very slender, the lower jaw alone is mobile, the teeth are unequal, and on 4 rows, the head is nearly square, the abdominal fins have 6 rays, the dorsal 9, anal 10.

5. N. G. TELIORS. (A Shrimp. Natural family *Phronimia*.) No antens, head distinct, with two sessile oblong eyes above it, 6 legs with nails, unequal, the posterior larger, abdomen naked, unarticulated, tail a pencil of hairs. Living in membranaceous angular tubes with two openings. *Teliops bicolor*. Brown, eyes gray, abdomen green, head squared, truncate, shorter than the thorax. Living in a quadrangular pyramidal tube, transversely rugose. A very singular animal, found by Mr. Clifford, in the springs of New-Bedford, Pennsylvania. It has some affinity with the genera *Cerapus* and *Phronima*. Length merely one-fourth of an inch, or less. It is doubtful whether the tube is formed by this animal or another.

6. N. G. POTAMIPHUS. (A Worm. Nat. fam. *Amphitritia*.) Body cylindrical and wrinkled, with a few pair of lateral flat appendages, head without tentacula, surrounded by a large circular membrane, tail mutic. Living in an ariacious tube, cylindrical, formed of sand, open at both ends, the upper end operculated, or, having α . mobile covering. *Potamiphus opercularis*. Head blackish, round, appendages oblong, obtuse, tail obtuse, circular membrane flat, entire, tube slightly tapering behind, grayish, granular; operculum reniform, striated, membranaceous. Tube about three-fourths of an inch long. Found at the falls of the Ohio. Mr. Clifford has found 3 new species in the springs of New-Bedford, very similar to this genus, but he did not see

the animal, and the tubes have only one opening and no operculum, whence they belong, probably, to the natural family *Sabellaria*, and form a peculiar genus, to which the name of *Lithiphus* may be given.

7. N. G. LITHIPHUS. Tubes more or less crooked, not angular, formed by very hard silicious sand or gravel, connected by a hard gluten, only one naked opening; 3 species.

5. N. Sp. *Lithiphus arcuatus*. Cylindrical, arcuate, blackish, diameter one-sixth of the length, surface granulated, length about half an inch.

6. N. Sp. *Lithiphus difformis*. Nearly straight or flexuose, rather flattened, opening round, covered outside with large unequal gravels, commonly 5, two on each side and one at the end. Length about half an inch, breadth little less.

7. N. Sp. *Lithiphus helicinus*. Spiral as an helix, with 3 spires, an ombilic and an oval mouth. A most singular species, which would be mistaken for an helix, unless closely examined; but it is formed by a conglomeration of fine particles of sand. Diameter one-eighth of an inch, rather flattish above, and conical depressed underneath.

8. N. G. ELLIPSTOMA. (Univalve Shell. Nat. fam. *Neritina*.) Shell oval, obtuse, mouth oblique, elliptical entire, thick lips, the inner one plaited, smooth covering the columella and ombilic, decurrent and notched outside the mouth, below the columella. Three species.

8. N. Sp. *Ellipstoma gibbosa*. 4 spires, a large knob behind the outward lip. From the Ohio and Wabash, length half an inch.

9. N. Sp. *Ellipstoma zonalis*. 3 spires, smooth, 3 transverse, zones violet. Kentucky river.

10. N. Sp. *Ellipstoma rugosa*. 5 spires. smooth, sutures wrinkled. Ohio river.