

THE
AMERICAN JOURNAL
OF
SCIENCE AND ARTS.

CONDUCTED BY
PROFESSOR SILLIMAN
AND
BENJAMIN SILLIMAN, JR.

VOL. XL.—APRIL, 1841.

(TO BE CONTINUED QUARTERLY.)

NEW HAVEN:

Sold by A. H. MALTBY and B. & W. NOYES.—*Philadelphia*, CAREY & HART and J. S. LITTELL.—*Baltimore, Md.*, N. HICKMAN.—*New York*, CARVILL & Co., No. 108 Broadway, THEODORE FOSTER, Fulton St., and G. S. SILLIMAN, No. 44 William St.—*Boston*, C. C. LITTLE & Co.—*London and New York*, WILEY & PUTNAM, No. 35 Paternoster Row, *London* and 161 Broadway, *New York*.—*Paris*, HECTOR BOSSANGE & Co., No. 11, Quay Voltaire.—*Hamburgh*, Messrs. NESTLER & MELLE.

PRINTED BY B. L. HAMLIN.

THE
AMERICAN
JOURNAL OF SCIENCE, &c.

ART. I.—*Notice of the Botanical Writings of the late C. S. Rafinesque.*

CONSTANTINE S. RAFINESQUE-SCHMALTZ, a Sicilian by birth, first arrived in this country in the year 1802, where he remained for three years; and returning from his native land in 1815, continued to reside in the United States until his decease in September last, (1840.) The name of this eccentric, but certainly gifted person, has been connected with the natural history of this country for the last thirty-five years; yet, from the manner of their publication, many of his scattered writings are little known to men of science. It is chiefly as a naturalist that Rafinesque is known, although his attention has by no means been restricted to Natural History; since works on Antiquities, Civil History, Philology, Political Economy, Philosophy, and even a poem of nearly six thousand lines, have proceeded from his pen. Botany, however, was his favorite pursuit, and the subject of a large portion of his writings; and to these we purpose to confine ourselves in the present article. Our task, although necessary, as it appears to us, is not altogether pleasing; for while we would do full justice to an author, who, in his early days, was in some respects greatly in advance of the other writers on the botany of this country, and whose labors have been disregarded or undervalued on account of his peculiarities, we are obliged, at the same time, to protest against all of his later and one of his earlier botanical works.

A few years ago, Mr. Rafinesque published his autobiography, entitled, *A Life of Travels and Researches*, (Philadelphia, 1836;)

a characteristic and interesting pamphlet, which is not at present in our possession. An abridged account of his travels and researches in this country, is also given in the introduction to his *New Flora of North America*, which we extract with slight condensation.

“I came to North America in 1802, and travelled chiefly on foot until 1804, over New Jersey, Pennsylvania, Delaware, Maryland, and Virginia, from the Juniata to the sea shore, and from the Alleghany Mountains beyond Easton to the Potomac beyond Washington and Alexandria.—In 1805 I left America for Europe, where I remained till 1815. On my return to this country in that year, I was shipwrecked on the shores of Connecticut, and lost all my former herbals and collections, both American and European.—I had to begin again my researches and collections, which I pursued ever since with renewed zeal, and always at my own sole expense. I spent 1815 and 1816 in the States of New York, New Jersey, and Pennsylvania chiefly. In 1816 I went to explore as far as Lake Champlain, Vermont, and the Saranac Mountains near the sources of the Hudson River. In 1817 I went to the Matteawan or Catskill Mountains, and explored Long Island, where I dwelt awhile. But my great travels in the West began in 1818; I made a tour of 2000 miles, as far as the Wabash River, crossing twice the Alleghany Mountains on foot, and exploring Ohio, Indiana, Illinois, Kentucky, &c.—Having been appointed Professor of Natural Sciences in the University of Lexington, in Kentucky, I went there in 1819, crossing a third time the Alleghany Mountains, through the Cumberland road of Maryland, still on foot, as I never would cross these beautiful mountains in any other way, in order to botanize all the while, and I was rewarded by many new plants. I spent seven years in Kentucky, exploring that State thoroughly, and making excursions to Ohio, &c.: my longest journeys were in 1823, when I went west as far as the rivers Cumberland and Tennessee near their mouths, and next east to the falls of the Cumberland River, and the Wasfoto or Cumberland Mountains. In 1825 I undertook a long journey through Ohio and Virginia, crossing the Alleghany Mountains of Virginia, and returning by the Alleghanies of Pennsylvania, always on foot. Next year, 1826, I left Kentucky and settled in Philadelphia; but took a very long botanical journey in the way, going through Ohio to Sandusky on Lake Erie; thence to Buffalo, Niagara, Canada, the New York Canal, &c.”

His excursions from 1827 to 1830, were confined to Pennsylvania, New Jersey, New York, Massachusetts, &c.

“Several botanical excursions and journeys were undertaken in 1831, in Delaware, New Jersey, and the Taconick Mountains. While in 1832

I visited Maryland twice; the second time I explored the Cotocton Mountains of Maryland, and the Alleghany Mountains as far as Sherman Valley and the Juniata, quite at leisure, residing sometimes at the top of the mountains. In the year 1833 I proposed to visit the Apalachian Mountains as far as Alabama, but was prevented by an accident and heavy rains. I only went as far as those of Virginia, and again in the Cotocton Mountains. In a second journey I undertook to visit the sources of the Delaware and Susquehannah.—The year 1834 saw me twice in the Alleghany Mountains of the North, once by following the course of the Delaware, the second time westward by the Welsh Mountains, Cone-wago Mountains, Albany Mountains, Locust Mountains, to the Pottsville mines and sources of the Schuylkill River, returning by Mauchchunk and Allentown. My travels of 1835 were in the central Alleghanies, up the rivers Juniata and Susquehannah, exploring the mountains of Peters, Buffalo, Wisconsin, Mahantango, Tuscarora, Jack, Seven-mountains, &c., with their valleys.—Since then I have chiefly explored South New Jersey and the pine barrens.”

He draws a lively picture of the discomforts, as well as the enjoyments of a travelling naturalist.

“During so many years of active and arduous explorations, I have met of course all kinds of adventures, fares and treatment. I have been welcomed under the hospitable roof of friends of knowledge and enterprise, else laughed at as a mad botanist by scornful ignorance.—Such a life of travels and exertions has its pleasures and its pains, its sudden delights and deep joys mixed with dangers, trials, difficulties and troubles. No one could better paint them than myself, who has experienced them all. Let the practical botanist, who wishes like myself to be a pioneer of science, and to increase the knowledge of plants, be fully prepared to meet dangers of all sorts in the wild groves and mountains of America. The mere fatigue of a pedestrian journey is nothing compared to the gloom of solitary forests, when not a human being is met for many miles, and if met he may be mistrusted; when the food and collections must be carried in your pocket or knapsack from day to day; when the fare is not only scanty but sometimes worse; when you must live on corn bread and salt pork, be burned and steamed by a hot sun at noon, or drenched by rain, even with an umbrella in hand, as I always had. Mosquitoes and flies will often annoy you or suck your blood if you stop or leave a hurried step. Gnats dance before the eyes, and often fall in unless you shut them; insects creep on you and into your ears. Ants crawl on you whenever you rest on the ground; wasps will assail you like furies if you touch their nests. **But ticks, the worst of all,** are unavoidable whenever you go among bushes, and stick to you in crowds, filling your skin with pimples and sores. Spiders, gallineps, horse-flies, and other obnoxious

insects, will often beset you, or sorely hurt you. Hateful snakes are met, and if poisonous are very dangerous; some do not warn you off like the Rattle-snakes. You meet rough or muddy roads to vex you, and blind paths to perplex you, rocks, mountains and steep ascents. You may often lose your way, and must always have a compass with you as I had. You may be lamed in climbing rocks for plants, or break your limbs by a fall. You must cross and wade through brooks, creeks, rivers and swamps. In deep fords or in swift streams you may lose your footing and be drowned. You may be overtaken by a storm; the trees fall around you, the thunder roars and strikes before you. The winds may annoy you; the fire of heaven or of men sets fire to the grass or forest, and you may be surrounded by it unless you fly for your life.”*

Now for the other side of the picture.

“The pleasures of a botanical exploration fully compensate for these miseries and dangers; else no one would be a travelling botanist, nor spend his time and money in vain. Many fair days and fair roads are met with, a clear sky or a bracing breeze inspires delight and ease, you breathe the pure air of the country, every rill and brook offers a draught of limpid fluid. What delight to meet with a spring, after a thirsty walk, or a bowl of cool milk out of the dairy! What sound sleep at night after a long day’s walk; what soothing naps at noon under a shaded tree near a purling brook. Every step taken into the fields, groves and hills, appears to afford new enjoyments. Landscapes and plants jointly meet in your sight. Here is an old acquaintance seen again; there a novelty, a rare plant, perhaps a new one, greets your view; you hasten to pluck it, examine it, admire, and put it in your book. Then you walk on thinking what it might be, or may be made by you hereafter. You feel an exultation, you are a conqueror, you have made a conquest over Nature, you are going to add a new object or a page to science.—To these botanical pleasures may be added the anticipation of the future names, places, uses, history, &c. of the plants you discover. For the winter, or season of rest, are reserved the sedentary pleasures of comparing, studying, naming, describing, and publishing.”†

The following list comprises, we believe, all the botanical writings of Mr. Rafinesque which appeared previous to his return to this country in 1815. Those which relate to American botany have reference to his discoveries between 1802 and 1805.

1. Prospectus of Mr. Rafinesque Schmaltz’s two intended works on North American Botany; the first on the new genera and species of plants discovered by himself; and the second on

* *New Flora of North America, Part I, Introduction, p. 11, et seq.*

† *New Flora, l. c., Part I, p. 14.*

the natural history of the Funguses or Mushroom tribe of America.—Published in the *Medical Repository*, New York, (edited by Dr. Mitchell,) 2d hexade, vol. 2, 1808.

2. Essential generic and specific characters of some new genera and species of plants observed in the United States of America, in 1803 and 1804. In a communication to Dr. Mitchell, dated Palermo, Sept. 1st, 1807.—Published in the same work and volume.

3. Notice on the medical properties of some North American plants.—Published in the same work and volume, p. 423.

4. Enumeration of the species of *Callitriche*, and the American species of *Potamogeton*.—Published in the same work, A. D. 1811.

5. An essay on the Exotic Plants which have been naturalized and now grow spontaneously in the middle region of the United States.—Published in the work and volume last cited.

6. Caratteri di alcuni nuovi generi e nuove specie di animali e piante della Sicilia, &c. Palermo, 1810. 8vo., 20 plates.

7. Précis de découvertes et travaux somiologiques de Mr. C. S. Rafinesque-Schmaltz, entre 1800 and 1814, &c. Palermo, 1814.—A small pamphlet, 24mo. pp. 55.

8. Principes Fondamentaux de Somiologie, ou les loix de la nomenclature et de la classification des corps organisés. Palermo, 1814.—An 8vo. pamphlet of 50 pages.

9. Chloris Etnensis, o le quattro Florule del M. Etna. In the Natural History of Mt. Etna by Recupero. Catania, 1814.

10. Specchio delli Scienze Enciclopedico di Sicilia. Palermo, 1814.—A periodical, of which two volumes were published. The following botanical articles are stated to be published in the work, (which we have not seen,) viz :—Plan of the natural method of Somiology; Description of 20 new genera of plants; of 15 new species of Sicilian plants; of a new genus of *Conferva*; three new genera of marine plants; and a new genus of *Fungi*.

We do not include the following tracts, which Rafinesque has enumerated among his works, since they have never been published, viz :—*Florula Delawarica*, a Catalogue of plants found in Delaware; and *Florula Columbica*, or a Catalogue of plants found in the District of Columbia; both sent in 1804 to the *Medical and Physical Journal*, edited by Prof. Barton. A Monography of the genus *Bertolonia*, sent to the Linnæan Society

of London in 1810; and Monography of the genus *Callitriche*, increased to sixteen species, sent in 1812 to the Linnæan Society.

The two first named articles comprise nearly all that Rafinesque published on North American botany previous to 1815, and consequently anterior to Pursh; and justice to the author perhaps requires that they should be noticed somewhat in detail. He states that his first proposed work, to be entitled *Nova Genera et Species Plantarum Boreali-Americanum*, will comprise, in addition to all the new genera and species discovered since the time of Linnæus, the ten new genera which are indicated in the annexed essay, [No. 2,] and fourteen more which he mentions as follows. [The remarks in brackets are of course our own.]

“*Geanthia (colchicoides)*, differs from *Colchicum* merely in the number of the stamens, which are only three in Pennsylvania.” [There is little risk in asserting that no such plant exists in the United States. The name again occurs in the list of twenty new genera published in the *Specchio delle Scienze*, &c., which we have not seen.]

“*Micrampelis (echinata)*, differs from *Momordica* in the fruit, which is inflated, muricated, 2-3 locular, 2-3 spermous; in Pennsylvania.” [We have in vain searched the subsequent works of Rafinesque for any farther notice of this genus. Perhaps the *Echinocystis*, Torr. & Gr. was intended, but the fruit of that plant has four seeds, two in each cell.]

“*Phemeranthus (teretifolius)* is very similar to *Talinum*, and is known by some botanists under the name of *Talinum teretifolium*. Penn. and Carol.”

“*Merasperma (dichotoma, bifurcata, cylindrical, &c.)* belongs to the tribe of *Conserva*, is tubular, inarticulated, with the seeds adhering to the interior of the tubes. Pennsylvania, &c.” [He elsewhere calls this genus *Mesasperma*.]

“*Heterodon (bryoides)*, small moss with peristome eight dented, dentatures unequal. It grows in the waters of New Jersey.”

“*Leptuberia (amorpha)*, small crustaceous lichen. Penn.”

“*Heptaria (erecta, cuneata, &c.)*, very like to the *Tremella*.”

“*Catenaria (arenaria, vagabunda, concatenata, &c.)* intermediary between some *Conservæ* and *Fuci*. On the sea shores.”

“*Atheropogon (apludoides)*, genus of *gramens*, near akin to the *Apludo*. I found it in Pennsylvania; the name is of Willdenow in MSS.”

"*Leptopyrum (tenellum)*,) it belongs to the tribe of *gramens*, and is akin to the *Avena*. Found in Virginia." [We have met with no subsequent notice of this genus.]

"*Florkea (palustris)*,) was discovered by Messrs. Marshall and Muhlenberg, in Pennsylvania, and named by Willdenow. Hexandria, Digynia: natural order doubtful."

"*Forrestia (thyroides)*,) near akin to *Ceanothus*, but tri-gynous; was found by Mr. Forrest in the northern part of the State of New York." [From a brief communication in an earlier volume of the Medical Repository, the third of the same series, 1806, p. 422, which escaped our notice in making the above cited enumeration, the locality of this plant, (Ballston Spring,) and a good description are given, which leaves no doubt that this new genus, the earliest of the long series published by this author, is founded upon *Ceanothus Americanus*.]

"*Hexorima (dichotoma)*,) is very near to *Uvularia* and *Streptopus*; was found by Mr. Marshall, in the Alleghany Mountains of Pennsylvania." [The close alliance of this genus to *Streptopus* may be inferred from the subsequent reference of *S. roseus* to the same genus. Vid. *Journal de Physique*, 1819, 8. p. 262.]

"*Gaissenia (verna)*,) akin to *Trollius*; was communicated to me by Drs. Muhlenberg and Gaissenheimer, who named it *T. Americanus*. It is found in Pennsylvania."

Then follows a list of genera, which he proposes to establish upon known species. This we introduce entire, on account of the evidence it affords of Mr. Rafinesque's sagacity at that early period. Several of these proposed genera had indeed been long established, two of them even by Linnæus himself; but we have no reason to suppose that Rafinesque was aware of their publication.

"*Adlumia (cirrhosa)*,) which is the *Fumaria fungosa*, *Ait.*

Cucularia (bulbosa),) is *Fumaria Cucullaria*, *Linn.*

Calistachya (alba),) is the *Veronica Virginica*, *Linn.*

Diarina (festucoides),) from the *Festuca diandra*, *Michx.*

Kampania (fraxinifolia),) *Zanthoxylum tricarpum*, *Michx.*

Negundium (fraxinifolium),) *Acer Negundo*, *Linn.*

Jacksonia (trifoliata),) *Cleome dodecandra*, *Linn.*

Cutlera [misprint for *Cutlera*,] (*saponaria* and *ochroleuca*,) *Gen-tiana*, *Willd.*

- Denckea (crinita,) *Gentiana crinita*, Willd.
 Persea (macrocarpa,) *Laurus persea*, Linn.
 Heteryta (polemonioides,) *Polemonium dubium*, Linn.
 Scoria [doubtless misprint for *Hicoria*,] (tomentosa, mucronata, alba, pyriformis, globosa, &c.,) the Hickory.
 Vleckia (nepetoides,) the *Hyssopus nepetoides*, Linn.
 Chryza (borealis,) *Helleborus trifolius*, Linn.
 Platonia (nudiflora,) *Verbena nudiflora*, Linn., [misprint for *nodiflora*.]
 Turpinia (pubescens and glabra,) *Rhus aromaticum* and *sua-veolens*, Willd. and Michx.
 Umsema [misprint for *Unisema*,] (obtusifolia and mucronata,) *Pontederia cordata*, Linn.
 Macrotrys (actæoides,) *Actæa racemosa*, Linn.
 Spathyema (fœtida,) *Dracontium fœtidum*, Linn.
 Caullinia (hippuroides,) *Hippuris Europæus*, r. Michx.
 Achroanthes (unifolia,) *Malaxis unifolia*, Michx.
 Kraunhia (frutescens,) *Glycine frutescens*, Linn.
 Savia (volubilis,) *Glycine monoica*, Linn.
 Apios (tuberosus,) *Glycine apios*, Linn.
 Triadenium (purpurascens,) *Hypericum Virginicum*, Linn.
 Hingstonia (exaltata,) *Siegesbeckia occidentalis*, Linn.
 Gonotheca (helianthoides,) *Polymnia Tetragonotheca*, Linn.
 Trachysperma (natans,) *Menyanthes trachysperma*, Michx."
 Nearly all the genera of this list, with the exception of those formed from *Gentiana*, are admitted by botanists, although mostly under different names.* In the next paragraph, Rafinesque

* *Adlumia*, adopted by De Candolle, is doubtless a good genus. *Cucularia* had been long anticipated by Borkhausen, under the name of *Dielytra* or *Dicentra*. *Calistachya*, Raf. is of later date than *Callistachys* of Ventenat; *Leptandra*, Nutt. is the next in order of publication, but the genus is not considered a good one. *Dirarina* is adopted with a change in the orthography. *Kampmania* is typical *Zanthoxylum*, that genus having been founded upon the Southern species, as a distinguished botanist has recently informed us. *Negundium*, or *Negundo*, was proposed by Mœnch. *Jacksonia*, Rafinesque changed in 1819 to *Polanisia*, probably on account of the *Jacksonia* of Brown, 1812, by which General Jackson has lost a genus. The genera founded upon *Gentiana*, are of no account. *Persea* was founded by Gærtner. *Heteryta* is a *Phacelia*. *Hicoria*, or *Hicorius*, was ten years later called *Carya* by Nuttall. *Vleckia* is the recent *Lophanthus* of Bentham. *Chryza* is the *Coptis* of Salisbury. *Platonia*, (which Rafinesque afterwards changed to *Bertolonia*,) = *Zapania* of Jussieu, &c. = *Lippia*, Linn. *Turpinia* forms a good genus or section; but the name being pre-occupied, the author changed it to *Lobadium*, and Desvaux to *Schmalzia*. *Unisema* may be well distinguished from the other species

proposes to reestablish the genus *Sarotha* "and to compose it of all the *Hypericums*, which have few stamens and an unilocular capsule, . . . and to divide the genus *Monotropa* into two, reestablishing the old genus *Hypopythis*; and both shall form a separate natural order or tribe, under the name of *Monotropeous*." Here we have the order or sub-order *Monotropeæ*, indicated ten years before its publication by Nuttall. In a short list of some species to be distinguished from allied ones of Europe, he proposes *Erythronium angustatum*, for the *E. Dens-canis* of early American authors; *Trientalis borealis*, for *T. Europæus*, of the same; *Lysimachia capitellata*, for *L. thyrsiflora*, Michx.; and *Viburnum edulum* for *V. opulus*, Michx.; in which cases, except perhaps the first, he has anticipated other botanists. In other instances he has made mistakes; he proposed *V. lentagoides* for the American *V. Lentago*, forgetting that Linnæus established the species on an exclusively American plant; and his *Asclepias fragrans* for the American *A. Syriaca* is in the same predicament. The second part of the essay is occupied with *Fungi*, and several new genera are proposed; upon which we have no observations to offer.

Ten new genera are proposed and characterized in the second essay, which follows the former. 1. *Phyllepidium (squamrosum)*, said to be an Amaranthaceous plant, found near Baltimore; we do not recognize it.—2. *Schultzia (obolarioides)*, said to be "very near akin to *Obolaria*," is undoubtedly the plant itself.—3. *Burshia (humilis)*, which is *Myriophyllum ambiguum*. The genus is dedicated to Pursh, but the orthography is incorrect.—4. *Diphryllum (bifolium)*, is the same as *Listera*, of Brown, and much older; but in a later memoir the author insists that it is

of *Pontederia*, but it is the original species of that genus. *Macrotyis* (here written *Macrotrys*), which afterwards Rafinesque changed, without reason, to *Botrophis*, although still adopted by some good botanists, is too near *Cimicifuga*. *Spathyema* = *Symplocarpus*, of Salisbury. *Achroanthes* is long anterior to Nuttall's *Microstylis*. *Kraunhia* is also anterior to *Wistaria*, or *Thyrsanthus*; but Rafinesque seems ever after to have overlooked the name; and in the *Journal de Physique*, he states that he had called it *Savia*, forgetting, probably, that his *Savia* (posterior to Willdonow's) is the same with Elliott's *Amphicarpæa*. *Apios* forms the third instance, in this list, in which Rafinesque has proposed new genera upon the same plants and under the same names as Mœnch had done fourteen years before! *Triadenium* = *Elodea* of Adanson. *Hingstonia* = *Verbesina*, Linn. *Gonotheca* = *Tetragonotheca*, Linn. *Trachysperma* = *Limnanthemum*, Gmel. 1769.

different from *Listera*.—5. *Isotria*, and 6. *Odonectis*, are apparently both founded upon *Pogonia verticillata*.—7. *Carpanthus* (*axillaris*,) is said to be a submersed fern, growing in Pennsylvania and New Jersey.—The three remaining genera belong to *Fungi*. Sixty new species are also described, many of which may be identified, and should not be overlooked.—The few notes on the properties of some North American plants, [No. 3,] contain nothing worthy of particular notice.

The plants described in the *Précis des découvertes*, are chiefly Sicilian: there are, however, several new American genera and species of *Algæ* and *Fungi*, and one new phanerogamous genus, viz. *Tussaca*, which is the *Goodyera* of Brown; the latter published, not in the same year with his own, as Rafinesque elsewhere states, but one year previous, viz. in 1813. We have never seen the *Specchio delle Scienze*; but learn from a list given by Rafinesque in an advertisement, that several of the new genera of plants it contains, are republished from the Medical Repository: but here *Psycanthus* and *Trichisperma* first appear, (both founded on *Polygala*, the latter equivalent to *Chamæbuxus*;) also *Crafordia*, which is still a puzzle, and *Bivonea*, which is founded on *Jatropha stimulosa*. The remainder, so far as they are noticed by succeeding botanists, are referred as synonyms to different exotic genera; but of several we find no subsequent mention, either by Rafinesque or others. Among these are *Kinia* and *Wilsonia*, which, being doubtless dedicated, the one to a German collector in this country, who corresponded with Muhlenberg, and the other to the well known ornithologist, were probably founded on plants of the United States.

We have thus noticed, somewhat in detail, the earlier labors of Mr. Rafinesque, in North American botany.* In these, he had certainly shown no little sagacity; and, considering his limited advantages, he must be deemed a botanist of unusual promise for that period, notwithstanding the defects which, increasing in after life, have obscured his real merits, and caused even his early wri-

* As early as 1808, Rafinesque had commenced the practice, (not uncommon at that day) of changing generic names when they were not conformable to the Linnæan canons, or even when they were too long or too short. Thus *Calinuz* was proposed for *Pyralaria*, Michx. (*Hamiltonia*, Willd.), *Lyonia* for *Polygonella*, Michx., *Osmodium* for *Onosmodium*, Michx. &c.—Most of the new genera, &c., published in the Medical Repository, were republished by Desvieux, in his *Journal of Botany*, vol. 2, 1809.

tings to be in a great measure disregarded. The botany of the United States offered, at that time, a fine field to a botanist acquainted with natural affinities; and Rafinesque was the only person in this country, who had any pretensions to that kind of knowledge. All we can justly say is, that he possessed talents which, properly applied, would have raised him to a high rank in the science, and that he early apprehended the advantages of the natural classification, although he was by no means well grounded in structural and systematic botany. As early as 1814, indeed, he sketched a general classification of organized beings, to which he continued to attach great importance; but there is nothing new in it except the names, the botanical portion being merely an anagram of Jussieu's leading divisions. His fuller developments of this system certainly contain much that is novel, but at the same time very absurd.*

Rafinesque's botanical writings between 1815 and 1818, (from his return to the United States, until the publication of Nuttall's *Genera of North American Plants*,) consist of some reviews of the works of Pursh, Eaton, Bigelow, &c. (some of which appeared early in 1818,) communicated to the *American Monthly Magazine*; one or two small papers describing plants or animals in the same magazine; and the *Florula Ludoviciana*,† upon which we feel compelled to make some animadversions. The history of this singular production is briefly this.

A Mr. Robin, who traveled in Louisiana soon after the commencement of the present century, appended to his book of travels ‡ a popular account of the plants he had observed, under the

* Vide *Flora Telluriana*, 1836, part 1st, p. 26, et seq. We have not seen the "Analysis of Nature, 1815," from which the "Table of New Natural Families," a curious mass of nonsense, is said to be substantially taken.

† *Florula Ludoviciana*; or a *Flora of the State of Louisiana*; translated, revised, and improved from the French of C. C. Robin. By C. S. Rafinesque, &c. &c. New York, 1817, 12mo. pp. 178, (including the supplement.)—Perhaps we should also include among the published works of this period, a "*Florula Missurica, Mandanensis et Oregonensis*," as a pamphlet under this name is mentioned in a "Chronological Index of the principal Botanical works and discoveries published by C. S. Rafinesque," (Herbarium Rafinesquianum, second part;) but this index comprises several works which we elsewhere learn have never been published, and we suspect the above mentioned work is in the same condition.

‡ *Voyages dans l'intérieur de la Louisiane, de la Floride Occidentale, et dans les îles de la Martinique, et de Saint Domingue, pendant les années 1802—1806, &c. &c.*—Paris, 1807, 3 vols. 8vo.

title of *Flore Louisiane*. This account, as Robin informs us, was prepared from notes made on the living plants, and it is evident (although there is no direct statement on the subject,) that he brought no collection of specimens to Europe, excepting a few seeds for the *Jardin des Plantes*. It is written in French; and the characters of the orders and genera are translated from Jusieu, which gives the work an appearance of scientific precision much beyond its just pretensions. Its value of course depends altogether upon Robin's botanical knowledge and his success in referring the plants he notices to their proper orders and genera; and we remark that the work itself affords no evidence of his competency to the task. Indeed, on Rafinesque's own showing, we can place little confidence in Robin's determinations; for, according to the former, he mistook the leaf of a *Sarracenia* for the spathe of an *Arum*, and described a species of *Podophyllum* as a second species of *Arum*; he took two species of something near *Commelina* for Orchideous plants; described a *Celtis* as an unknown Proteaceous plant, a plant of the Cherry tribe for a true Laurel, a new genus (?) of *Ranunculaceæ* for a Polygonaceous plant, and the common *Ceanothus* for *Polygonum frutescens*; he mistook *Amsonia* and *Dichondra* for species of *Menyanthes*, a new genus (?) of *Scrophularineæ* for a *Polygala*, a *Phlox* for a *Manulea*, a *Justicia* for an *Amethystea*, an *Hydrolea* for an *Apo-cynum*, a new genus (?) intermediate between *Orycoccus* and *Vaccinium* for a *Campanula*, and a species of *Eryngium* for a thistle. On the sole authority of the descriptions and determinations of such a botanist, Rafinesque has established thirty new genera and one hundred and ninety-six new species; and professes to reduce all his plants to their proper orders and genera, correcting Robin's mistakes by his own descriptions. It is worth noticing that a large portion of the one hundred and four plants which are referred to old species, are merely enumerated, and scarcely if at all described by Robin; but in almost every instance in which Robin has given a somewhat detailed description, Rafinesque has not been able to recognize the plant, but has considered it a new genus or species. From this fact, one may form a good idea of the value of Robin's account, and of Rafinesque's new genera and species. We do not pretend to say that Robin really made the blunders which Rafinesque charges upon him, (of which the specimens we have given are only some of the most striking;)

for upon the whole, we place quite as much confidence in his determinations as in Rafinesque's corrections. But we do say, that there is no reason for supposing that Robin has been more successful in the instances which Rafinesque has adopted, and upon which his new species of existing genera rest; and we confidently state, that it is impossible, with all the knowledge we now possess of the botany of that region, to recognize one species out of fifty, with tolerable satisfaction, from Robin's descriptions, which must nevertheless have been drawn from the more common plants of Louisiana; and we never heard of the re-discovery of any one of these new genera and species; although many intelligent botanists and diligent collectors reside in, or have since visited that region. The *Flore Louisiane*, in the state Robin left it, could do no harm, and whatever information it contained was quite as available as at present. As improved by a botanist who had never been within a thousand miles of Louisiana, and who at that period, could scarcely have seen a dozen Louisianian plants, the only result has been to burthen our botany with a list of nearly two hundred *species semper incognitæ*. There can, we think, be but one opinion as to the consideration which is due to these new genera and species: they must be regarded as fictitious, and unworthy of the slightest notice.*

As the works of Nuttall, Elliott, Barton, and others appeared, Mr. Rafinesque published critical notices of them in the *American Monthly Magazine*. He soon after collected and condensed these criticisms, and republished them, with some additions, in the *Journal de Physique* for 1819, with the title of *Remarques critiques et synonymiques sur les Ouvrages de MM. Pursh, Nuttall, Elliott, etc.* In these many suggestions of more or less impor-

* We are constrained, by the length to which this article has extended, to omit a series of extracts we had prepared in fuller confirmation of our remarks.—We are bound to mention the excuse Rafinesque offers for this production. In the *Herbarium Rafinesquianum*, p. 17, he says: "I have been reproached wrongly to have published my *Florula Louisiana* out of Robin, without specimens; but Gronovius did so with Clayton, and Willdenow with Loureiro. Robin's herbarium may be seen in France as well as Michaux's," etc.—The case of Loureiro's *Flora Cochinchinensis* may perhaps be something to the purpose; but every botanist knows, or may easily know, that the assertion is altogether untrue as regards the *Flora Virginica* of Gronovius, who had the specimens as well as the notes of Clayton in his possession. We find no evidence that Robin brought back a single dried specimen to France: he professes to have drawn his descriptions from the living plants.

tance are thrown out, new genera are proposed, and many genera and species reclaimed on the ground of priority in publication. It is indeed a subject of regret, that the courtesy which prevails among the botanists of the present day, (who are careful to adopt the names proposed by those who even suggest a new genus,) was not more usual with us some twenty years ago. **Many of Rafinesque's names should have been adopted; some as matter of courtesy, and others in accordance with strict rule. But it must be remembered, that the rule of priority in publication was not then universally recognized among botanists, at least as in present practice, (the prevalence of which is chiefly to be ascribed to the influence of De Candolle;) the older name being preferred *cæteris paribus*, but not otherwise.** It is also true, that many of the scattered papers of Rafinesque were overlooked by those who would have been fully disposed to do justice to his labors, had they been acquainted with them; and a large portion of the genera proposed in his reviews of *Pursh, Nuttall, Bigelow, &c.*, were founded on their characters of plants which were doubtfully referred to the genera in which they were placed, or were stated to disagree in some particular from the other species. One who, like Rafinesque, followed the easy rule of founding new genera upon all these species, could not fail to make now and then an excellent hit; but as he very seldom knew the plants themselves, he was unable to characterize his proposed genera, or to advance our knowledge respecting them in the slightest degree. In his later publications, this practice is carried to so absurd an extent as entirely to defeat its object.

The *Journal de Physique* for 1819, also contains a memoir entitled *Prodrome des nouveaux genres de plantes observées en 1817 et 1818, dans l'intérieur des Etats-Unis d'Amérique*, which is probably one of Rafinesque's most creditable productions. It comprises fifty genera, founded mostly, but not entirely, upon plants which he had seen, many of which, however, he had previously proposed, under the same or different names. The most favorable specimens are the following, viz. *Nemopanthes, Polanisia, Lobadium, Blephilia, Agroseris, Stylinnus, Ratibida* and *Lepachys* (taken together,) *Cymopterus, Marathrum, Clintonia, Styrandra, Peltandra, Diarina, and Neuroloma*. Nearly half of these are not here proposed for the first time: in some cases he had been anticipated; and in others the names were pre-

occupied.* The following have never been identified, viz. *Discovium*, *Leptrina*, *Flexularia*, *Anthipsimus*, and the five acotyledonous genera. In the same year (1819,) he again published three of these genera, viz. *Cylactis*, *Nemopantes*, and *Polanisia*, in the first volume of the *American Journal of Science*, to which he also contributed several short botanical and zoological, or miscellaneous articles.† His botanical writings between the years 1820 and 1830, inclusive, as far as we can ascertain them, are the following, viz.

Annals of Nature, or an Annual Synopsis of New Genera and Species of Animals, Plants, &c., discovered in North America, 1820. A pamphlet of sixteen pages, printed at Lexington, Kentucky: it is chiefly occupied with zoology; but it contains brief characters of about fifty proposed species of plants, three or four of which are possibly new; but we can only vouch for a single species of the number. The four new genera proposed, are no better than the species.‡

* The worst are *Cylactis* (which is a *Rubus*), *Cyphorima* (*Lithospermum*), *Endiplus?* (*Phacelia*), *Dacistoma* (*Gerardia*), *Dasanthera* (founded on the figure and description of Pursh's *Gerardia fruticosa*=*Pentstemon*), *Neurosperma* (*Momordica*), *Delostylis* (*Trillium*), *Critesion* (*Hordeum*), *Trisiola* (*Uniola*), *Torreya* and *Distymus* (*Cyperus*), *Aplostemon* (= *Scirpus cæspitosus* and *S. triquetus*!) under which two additional genera are proposed, viz. *Diplarinus* for the *Scirpi* with two stamens, and *Dichismus* for those with two stigmas.

† One of these articles is devoted a consideration of the natural affinities of *Flærkea*; which he considers as forming a small family along with *Galenia*!! while *Nectris*, to which Pursh united it, is said to stand next to *Myriophyllum*!

‡ *Ilysanthes* is probably *Lindernia*, incorrectly described. *Peramibus* is founded on a genuine *Rudbeckia*. *Hedychloe* is *Kyllingia pumila*. The characters of the two following genera we copy entire, for the edification of cryptogamic botanists: the first is said to be a Fungus, the second an Alga.

“*N. G. ANASTOMARIA*.—Fructification in flexuose lamellar veins, anastomosed like a net.—This genus will be next to *Merulius* and *Dedalea*; some species of them may probably belong to it.—*A. campanulata*. Stipitated fulvous; stipe thick; pericle campanulated; netted outside, margin erose, insides scaly and dark spotted.—This may be the type of the genus. Size, four or five inches. It grows in the State of New York.—*A. dimidiata*. Sessile, dimidiated, imbricated, wrinkled above and fulvous with brown or black zones, netted beneath; veins often bifid near the margin.—Near Catskill, State of New York. It may be the type of a subgenus, *Campsilicus*.

“*N. G. STYPNION*. A floating gelatinous and floccose mass, easily divided and homogeneous, without any perceptible filaments or organs.—A very singular genus, next to my *G. Potarcus*. It differs from *Conferva*, which consists of five fixed filaments, and *Oscillatoria* of interwoven articulated ones. I could not perceive any filaments in it, perhaps a microscope might show some [! !] surrounded by a jelly. The name means *tow* in Greek.—*S. fluitans*. Floating, elongated perpendicularly; amorphous, floccose or lacerated; of a dirty yellowish or brown color.—Very com-

Tracts in the Western Review, about the year 1820. Among them is a *Monograph of North American Roses*; in which thirty-three species indigenous to the United States are described! Also a *Monograph of Houstonia*, in which fourteen species are described, exclusive of the *Hedyotis crassifolia* of his *Florula Ludoviciana*, of which he forms a new genus! These tracts, with another on the classification of some natural families, have been reprinted in the fifth, sixth, and seventh volumes of the *Annales Générales des Sciences Physiques*, at Brussels.—The following are unknown to us.

1821. "*Western Minerva*; several new genera; suppressed by my rivals!"

1822. "*The Cosmonist*, twenty numbers, Lexington.—New Plants of Kentucky."

1823. "*Prenanthes Opicrina*, and other plants, Cincinnati."

1824. "*Florula Kentuckensis* and *Prodromus N. sp.*, Lexington." No intimation is given of the place or form of publication.

1824. *First Catalogues and Circulars of the Botanic Garden of Transylvania University, Kentucky.*

1825. *Neogenyton*, or indication of sixty-six new genera of plants of North America.—A loose sheet of four pages, printed at Lexington; and we believe reprinted in Seringe's *Bulletin*. A few good genera are indicated in this tract, but not properly characterized. The best are, *Cladrastis* (*Virgilia lutea*; upon which he endeavors to establish three or four species,) and *Stylipus*. A few are good, but anticipated by other authors; such as *Helichroa* (in which some seven or eight species are made out of at most three,) which is *Echinacea* of Mænoch; and *Megadenus*, which is *Eleocharis* of Brown; several others may be found to indicate sections or sub-genera; but about fifty of the sixty-six are absolute nonsense.*

mon on the surface of the Ohio in summer, having the appearance of pieces of ropes or oakum. It smells like *Conferva*." *Rafinesque, l. c. p. 16.*

* Thus, *Tomostigma* is founded upon *Draba Caroliniana*; *Hartiana*, upon *Anemone Caroliniana*, &c.; *Stylisma*, on *Convolvulus tenellus*, is said not to belong to the *Convolvulaceæ*; *Helepta*, with three species, is made from *Heliopsis lævis*; *Endodia* and *Aplexia* are founded, one on *Leersia lenticularis*, the other on *L. Virginica*; three genera are founded upon genuine species of *Croton*, and one on *Stillingia sylvatica*, &c. &c. It is but fair to notice, however, that it appears from the species cited, that his *Ptilemnium* is the same with *Discopleura, DC.*, his *Spermolepis* with *Leptocaulis, Nutt.*, and his *Oxyopolis* with *Archemora, DC.*, but mixed with an *Angelica* and *Tiedmannia*. None of them could have been identified by the characters assigned.

A pamphlet (?) entitled "*Neocloris or New Species of Western America*," is mentioned by Rafinesque, but neither the place nor form of publication are given: **we are wholly unacquainted with it.**

1826. "*School of Flora*, with figures, Philadelphia."

1828. "*Neophyton Botanicon*, or *New Plants of North America*."—*Medical Flora of the United States*, vol. 1, 12mo. Philadelphia. The second volume was published in 1830. It is illustrated with rather rude wood cuts, and contains much information respecting the plants employed in popular medicine.

1830. *American Manual of the Grape Vines, and the Art of Making Wine*. Philadelphia: a pamphlet of sixty-four pages, 12mo.—He describes sixty-two species of grape, of which forty are natives of the United States! One hundred varieties of our species are characterized!—"Botanical Letters to De Candolle."

A gradual deterioration will be observed in Rafinesque's botanical writings from 1819* to about 1830, when the passion for establishing new genera and species, appears to have become a complete monomania. This is the most charitable supposition we can entertain, and is confirmed by the opinions of those who knew him best. Hitherto we have been particular in the enumeration of his scattered productions, in order to facilitate the labors of those who may be disposed to search through bushels of chaff for the grain or two of wheat they perchance contain. What consideration they may deserve, let succeeding botanists determine; but we cannot hesitate to assert that none whatever is due to his subsequent works. These, like many of the preceding, are little known; but we shall continue our enumeration, and future writers can correct our opinion wherever they think we have done the author injustice.

1832. "*The American Florist*: thirty-six figures, 12mo. Philadelphia." With this we are unacquainted.—*Atlantic Journal, and Friend of Knowledge*. A periodical of which eight

* It was in this year (1819) that I became alarmed by a flood of communications, announcing new discoveries by C. S. Rafinesque, and being warned, both at home and abroad, against his claims, I returned him a large bundle of memoirs, prepared with his beautiful and exact chirography, and in the neatest form of scientific papers. This will account for the early disappearance of his communications from this Journal. The step was painful, but necessary; for, if there had been no other difficulty, he alone would have filled the Journal, had he been permitted to proceed.—SEN. EDITOR.

numbers appeared in 1832 and 1833; published at Philadelphia. The whole forms an 8vo. volume of 212 pages. Its contents are miscellaneous, but there are several botanical articles, in which, of course, new genera and species are described. In one of these articles, Rafinesque takes up Dr. Torrey's account of the plants collected by Dr. James, in Long's expedition to the Rocky Mountains, (published in the second volume of the *Annals of the Lyceum of Natural History, New York*,) upon which he creates twenty new genera! In another, he describes two new genera of *Umbelliferae* called *Streblanthus* and *Orimaria*; one of which is an *Eryngium* falsely characterized; the other, a *Bupleurum* (which had doubtless escaped from some garden) in an undeveloped state, which we happen to know Rafinesque had mistaken for a grass, and described as a new genus of that family; but, being told it was a *Bupleurum*, he has accordingly published it as a new genus "near to *Bupleurum*."

1833. *Herbarium Rafinesquianum*. Loose sheets, printed in 24mo., we believe at different times, and reaching to about eighty pages. The first part is chiefly a reprint from the last number of his *Atlantic Journal*; the second contains a list of his botanical works, and account of plants offered for sale, a monograph of *Samolus* increased to ten species, of the American species of *Cypripedium* increased to ten species, of *Spiranthes*, ten species, and of *Jeffersonia* and *Podophyllum*, each increased to four species. The remainder is of the same character.

1836. *Flora Telluriana*: four parts; each of about one hundred pages, 8vo.; the fourth part, or supplement published in 1838.—*New Flora and Botany of North America; being a supplemental flora to the various botanical works of Michaux, Muhlenberg, Pursh, &c. &c. &c.* Philadelphia: printed for the author and publisher. Four parts are mentioned; but we have seen only three, of about one hundred pages each.

The object proposed in the *Flora Telluriana* is general generic reform; and the author informs his readers, that "although the attempt may astonish or perplex some timid botanists," he intends to establish about *one thousand totally new genera*, including some of those he had formerly published:* it is needless to add, that in this and the *New Flora of North America*, together, he has nearly fulfilled his promise. According to his principles,

* *Flora Telluriana*, Introduction, p. 15.

this business of establishing new genera and species will be endless; for he insists, in his later works particularly, that both new species and new genera are continually produced by the deviation of existing forms, which at length give rise to new species, if the foliage only is changed, and new genera when the floral organs are affected. He assumes thirty to one hundred years as the average time required for the production of a new species, and five hundred to one thousand years for a new genus; and on a preceding page he remarks,* that "new varieties and species were often met with by me at long intervals, in wild places well explored before, grown from seeds of akin species." "It is even possible," he continues, "to ascertain the relative ages and affinities of actual species and genera. . . . As a general rule, the real genera of single or few species, are the newest in order of time, and the most prolific, the eldest in the series."†

It is therefore of little consequence, that half his genera and species do not really exist at present, since they may perchance make their appearance a century hence.‡ Our notice of these extraordinary works must be very brief. The first and most amusing part of the *Flora Telluriana*, is chiefly occupied with the author's views of natural classification, upon which we have already made some remarks. This is followed by "The fifty rules of generic nomenclature, by *Linnaeus and Rafinesque!*" In the second, the business of making genera is begun in earnest, and continued through the work. Thus *Allium* is divided into fifteen genera; *Solidago*, into seven, with about twice as many sub-genera; *Saxifraga*, into twelve genera, which are placed in three natural orders, and two different classes; *Polygonum* into twenty-three; *Gentiana*, (as left by Grisebach,) into fourteen; *Linum*, into thirty-four; *Hypericum* into eleven; and *Salvia*, into fourteen genera absolutely, and fourteen more proposed as doubtful or perhaps sub-genera. "As I have not yet heard of a genus dedi-

* *Op. cit.* p. 12.—Vid. also *New Flora*, &c. p. 16. † *Op. cit.* p. 14.

‡ "Thus it is needless to dispute and differ about new genera, species and varieties. Every variety is a deviation which becomes a species as soon as it is permanent by reproduction. Deviations in essential organs may thus gradually become new genera. Yet every deviation in form, ought to have a peculiar name, and it is better to have only a generic and specific name for it, than four when deemed a variety." *Rafinesque, in Atlantic Journal*, p. 164. "All our actual species of Roses, Grapes, Oaks, Plums, Apples, Currants, Asters, Azaleas, Heaths, &c., have thus been formed. Nay, it is so probably with every genuine genus of many species." *Herbar. Rafin.* p. 15.

cated to me," he remarks in the introduction, "I shall perhaps have to imitate Roxburgh, and choose one for myself, as a *Rafinesquia*." It is not true that Roxburgh dedicated a genus to himself. This honor was reserved for Rafinesque, who accordingly appropriated the *Lotus pinnatus* of the Botanical Magazine, and described it in due form as **RAFINESQUIA** seu *Flundula*, the second name being proposed as a substitute in case this honor had been already conferred by some other person. But as the plant turned out to be an *Hosackia*, he is obliged to make another trial; and in the preamble to the third part, he continues: "As to a *Rafinesquia*, I have provided half a dozen, out of which I hope some one will suit the fancy of botanists and be adopted; although I may be blamed for this conceit, I blame instead for it those makers of new genera, that dedicate them to obscure individuals, that have not added one page to the science; and have not thought of me for forty years, who have added one thousand pages to it, and three thousand new genera or species."* His next choice falls upon the beautiful *Gardoquia Hookeri*! which is published in due form as the second **RAFINESQUIA** of *Rafinesque*;† and of which he makes two species in his New Flora of North America.

The last named work is precisely of the same character with the preceding, except that the new genera are not quite so numerous, but the new species amply supply the deficiency. Several of the former are made in this way: "Actimeris, Raf., misspelt *Actinomeris* by Nuttall; *Actispermum*, Raf., misspelt *Actinospermum* by Elliott." As to species, the following may suffice for examples. A single *Amphicarpæa* is divided into ten species in two genera, *Bellis integrifolia* into four species, *Capsella Bursa-pastoris* into seven species and one new genus besides, *Prunella vulgaris* into ten species, two species of *Triosteum* into eight, a single (?) *Eclipta* into ten or twelve species and apparently three genera, &c. &c. These are by no means unusual instances, but fairly exhibit the character of the work.

1839. *American Manual of the Mulberry Trees*. Philadelphia. Of this pamphlet we have seen no more than the title-page and the first sheet.

1840. *The Good Book and Amenities of Nature; or Annals of Historical and Natural Sciences*, is the last we have to notice.

* *Flora Telluriana*, part 3, p. 6.

† *Op. cit.* part 3, p. 82.

We have only seen a few sheets of this miscellaneous work, which purports to be the commencement of a periodical or occasional publication. The first article is a general classification of the sciences comprised in "*Cosmosy*, or Natural History." Here we meet with such names as the following branches of *Astrography*, viz. "*Astrosy*, *Heliosy*, *Tholosy*, *Selenosy*, *Cometosy*, *Toxosy*, &c., applying to the stars, the sun, the planets, the moons, the comets, and the various *Tixomes* (other bodies) of the skies;" as well as "*Atmology*, the science of the atmosphere," with its branches, such as "*Yetology*, of rains; *Phosology*, of luminous meteors;" not to mention *Dimnology*, *Potamology*, *Stromology*, *Spilology*, *Volcanology*, *Stocology*, *Etherology*, *Gazology*, *Gazomy*, *Uzromy*, *Flogomy*, "the flogomes, or burning substances," *Campsology*, &c., &c., &c. This reminds us of a paper which Rafinesque many years ago sent to the editor of a well known scientific journal, describing and characterizing, in natural history style, *twelve new species of thunder and lightning!* But the only botanical article we have seen is a "*Revision of the Carexides*," in which the simple genus *Carex* is divided into two sub-families and eighteen genera: and we observe that the same species, under different names, are frequently cited as the types of two or three different genera. With this, so far as we can ascertain, the last botanical article of this indefatigable writer, we close our remarks, which many readers will probably consider unreasonably prolix.*

A. G.

* Mr. Rafinesque's papers on Zoology, Fossil Remains, &c. are numerous; but we are not prepared to enumerate them. The following are some of his more considerable miscellaneous works, exclusive of those previously mentioned, viz.

The American Nations; or outlines of their general history, ancient and modern, including the whole history of the earth and mankind in the western hemisphere, &c. &c. Vol. I. Philadelphia, (published by the author,) 1836. 8vo. pp. 560. Vol. II, is also said to be published.

Safe Banking; including the principles of wealth. Philadelphia, 1837. 12mo. pp. 136.

Celestial Wonders and Philosophy of the Visible Heavens. 1839.

Genius and Spirit of the Hebrew Bible, &c.

The World, or Instability; a Poem in twenty parts: with notes and illustrations. Philadelphia, (J. Dobson,) 1836. 8vo. pp. 248.