

JUNCUS TRACYI Rydb. (Data under Wyoming.)

LUZULA PIPERI (Coville) Jones. Abrupt mossy shore of Bridge Bay, Yellowstone Lake, alt. ca. 7800 ft., 3 miles SW. of Lake Junction, Sept. 12 (12528, NA).

ASTER LEUCANTHEMIFOLIUS Greene. Open rhyolite slope on Norris Basin-Mammoth Hot Springs Road, alt. ca. 7800 ft., Sept. 11 (12502, NA).

PLANT NEW TO UTAH

THERMOPSIS RHOMBIFOLIA Nutt. Open lodgepole pine forest W. of Sheep Creek Canal, alt. ca. 8500 ft., Uinta Mts., Aug. 14 (12129, NA, US).

Additions to the Flora of the Uinta Mountains

Two species not reported in Graham's "Botanical Studies in the Uinta Basin of Utah and Colorado" (Annals Carnegie Mus. (Pittsburgh) vol. 26. 1937) are the following.

AGROPYRON LATIGLUME (Scribn. & Sm.) Rydb. Meadow along Middle Fork of Sheep Creek, atl. 9000 ft., on road to Spirit Lake, Aug. 14 (12136, US).

THERMOPSIS RHOMBIFOLIA Nutt. (Data under Utah.)

NEVADA RANGE EXTENSION

The occurrence of *Trifolium monanthum* A. Gray in eastern Nevada, while not a new record for the State, is a rather notable extension in range since the species has previously been known only in western Nevada. This was collected on the moist bank of a stream in aspen woods, Lamoille Canyon, alt. ca. 7800 ft., Ruby Mts., 7 miles SE. of Lamoille, Elko Co., Aug. 10 (12087, NA)—PLANT INDUSTRY STATION, BELTSVILLE, MD.

NUTTALL NOT THE AUTHOR OF FRASER'S CATALOGUE

LLOYD H. SHINNERS

NUTTALL in 1818 unequivocally acknowledged only 13 out of 71 new names in Fraser's 1813 Catalogue as his. Ten of the 13 had appeared as *nomina nuda*. Two were placed in synonymy, and two were misquoted (including one of those placed in synonymy). In addition he published as new 10 species listed in the Catalogue without mention of the fact that they had appeared there. He obliquely claimed responsibility for another which he does not cite by name, and for which he adopts Pursh's binomial, though pointing out that Pursh had described a mixture representing two genera (*Astragalus crassicaupus*, called by Nuttall *A. carnosus* Pursh, the discordant element being named *Sophora sericea*

Nuttall). In 1840 (Trans. Amer. Philos. Soc. 7: 301, in comments under *Dieteria sessilifolia*) he directly claimed responsibility for one or presumably two more ("Aplopappus spinulosus, to which I applied the name of *Sideranthus* in Fraser's Catalogue": two species are there listed under this generic name). Two names which had appeared in the Catalogue were credited by Nuttall in 1818 to the Botanical Magazine (*Bartonia decapetala*, there credited to Pursh) and its editor, Sims (*Allium stellatum*, there credited to Ker-Gawler), and a third (*Oenothera macrocarpa*) was credited to Pursh. The implication is that the Catalogue (with 89 names altogether) was prepared by someone who used a small number of Nuttall's names and in addition a much larger number of names coined by other persons. This seemed so obvious that the point was not elaborated in my previous article. It was surprising to read Dr. Graustein's statement that "there is no doubt" that Nuttall authored the Catalogue, and that I had furnished "no convincing evidence" to the contrary. The assertion of Cronquist, Keck and Maguire that "it is universally acknowledged that many or all of the new names contained in it were those of Thomas Nuttall" is untrue, and is an attempt to present hearsay as if it were scientific evidence.

Under English and American common law, a man is judged innocent until proved guilty. The ready assumption that Nuttall authored Fraser's Catalogue is therefore legally unsound. I must protest being put on the defensive when in reality it is the opposition who must prove their case. Instead of uncritically adopting a plausible supposition, we should assemble evidence about it. By a detailed comparison of the Catalogue and the works of Nuttall and Pursh, I obtained what seemed to me adequate evidence for rejecting the thesis that Nuttall wrote the Catalogue. It did not seem adequate to others, and for that reason I am going to the unwelcome trouble of presenting further arguments.

Let me insist again that this is really uncalled for. As a matter of basic law, my side of the case requires no argument until seriously challenged. The burden of first proof rests with the opposition. Let me begin by playing Devil's advocate and summarizing their evidence, since they have not made any effort

to do so. First is the fact that Nuttall wrote "by T. Nuttall" on the Philadelphia copy of the Catalogue. This I have already stated does not have to mean that he claimed to be its author, but can mean instead merely that he claimed to have brought back the plants listed in it, which he unquestionably had. The philosophical Doctrine of Parsimony asks that in propounding a theory, we adopt one that requires the least possible amount of assumption. Stated more pithily, that theory is best which theorizes least. It better accords with this doctrine to uphold the second interpretation, which asks us to assume nothing that is not already known to be true, than it does to uphold the first one, which is wholly supposititious. Further, Nuttall's own later actions are strangely inconsistent with the first interpretation, but not at all with the other. I hold therefore that the first piece of evidence to support the claim of Nuttallian authorship has not proved it. The second piece of evidence is the fact that Nuttall in later publications (chiefly in his *Genera*, 1818; one item in 1840, mentioned above) claimed responsibility for certain names in the Catalogue. I have already pointed out that he claimed remarkably few of them, and that he specifically credited three of them to other authors. If he was the direct author of the catalogue, why did he ignore most of the names in it, and why did he credit some to persons other than himself? Again I choose the explanation that demands least in the way of gratuitous assumption: that the Catalogue was prepared by someone else who adopted a rather small number of names coined by Nuttall, along with many more which were not. Again, the thesis of Nuttallian authorship is not proved. And let me repeat that what we must first require is that it be proved, not that it be disproved.

Let me extend my role of Devil's advocate by indulging in further suppositions like that of Nuttallian authorship for the Catalogue, but in another direction. I suggest that the 10 names which Nuttall published in 1818 as new, without mentioning that they had appeared in the Catalogue, had not originated with him at all, but were the inventions of someone else; that Nuttall was expropriating them in exactly the same free manner that Sims, Ker-Gawler and Pursh had done before him. Such was the practise of the time! There has been too

much repetition of the theme that Pursh was an exceptional blackguard. Let us see how his contemporaries behaved.

John Sims described *Oenothera missouriensis* with Plate 1592 of Curtis's Botanical Magazine, dated Nov. 1, 1813. Sims states that it was "found by Mr. Nuttall in the neighbourhood of the Missouri," and adds, "We do not find that this species has been before noticed: it seems to differ from every one described by MICHAUX or by PURSH, whose valuable Flora, speedily to be published, we have been favoured with the opportunity of consulting. . . . Communicated from the Sloane-Square Nursery by Messrs. J. and J. T. FRASER." It was not relayed to Pursh for him to publish in his Flora! In Fraser's Catalogue it appears as *O. macrocarpa* (which name must be adopted if the Catalogue names are considered valid). It was described as new by Pursh under the same name, and by Nuttall in 1818 as his new species *O. alata*, with "*O. macrocarpa* PH." as synonym, but no mention of *O. missouriensis*. In view of Nuttall's several references to the "Bot. Mag.," his disregard of Sims's binomial is very odd, and possibly not wholly "innocent," to borrow from Dr. Graustein's quotation. And how are we to regard his bald rejection of both the original Catalogue name and that of Pursh? John Bellenden Ker, or Ker-Gawler as he styled himself (identified only by the cryptic initial "G."), described *Scilla esculenta* with Plate 1574 of the Botanical Magazine, dated Aug. 1, 1813, citing as synonyms *Phalangium esculentum* "Fraser's Catalogue, &c.," and *Phalangium Quamash* Pursh, "*nondum evulgata*." He says, "We have added the synonym from the work of Mr. PURSH, in consequence of a communication that gentleman was so obliging as to make to us, in which he assured us, that Mr. FRASER'S plant, from which our drawing has been made, was of the same species as that he had in view. . . . We have not had the opportunity of seeing the figure in Mr. PURSH'S work, which is not yet published. . . . Our drawing was made from a plant imported by Mr. NUTTALL, which flowered at Mr. FRASER'S Nursery, in Sloane-Square."

Instead of belaboring Pursh so persistently for his treatment of Nuttall, should we not extend our sympathies for the treatment he received from Sims and Ker-Gawler? Perhaps not. They were birds of a feather, and on at least one notorious

occasion joined forces in a deed now regarded as nefarious, but taken more casually then. In publishing *Bartonia decapetala* (Bot. Mag. t. 1487, Aug. 1, 1812), Sims declares, "Living plants have been brought to this country, by Mr. THOMAS NUTTALL, who collected them. . . . It has not however as yet flowered here, on which account our drawing was taken from dried specimens. It is by particular request only that we have been induced to publish such, contrary to our rule, seldome deviated from, and never without mentioning it, of admitting none but drawings from the life. . . . For the above generic and specific characters, and indeed for the whole communication, we are indebted to Mr. FREDERICK PURSH, author of a new Flora of North-American plants, now in the press." Considering the very free and easy practices of the time, it does not seem to me at all unreasonable to think that Nuttall in 1818 sometimes indulged in the same kind of thing. I think it plausible to explain the 10 names lifted from Fraser's Catalogue without acknowledgment as evidence that he did. True, I have no proof of it. But it is just as true that there is no real proof of the contrary.

A point in the above examples calling for particular emphasis is the fact that none of the authors accepted Fraser's Catalogue names as having legal status. Pursh and Nuttall both quote them, sometimes adopting and publishing them as new. Sims and Ker-Gawler regularly quote as inconsequential synonyms names from "Fraser's Catalogue, &c." when describing new species. What is meant by the unexplained abbreviation "&c."? Could there have been other, less renowned nursery lists in which names appeared? Could one or more such have come out ahead of Fraser's? For the benefit of the opposition, I declare that both suppositions are true, and that we must search for still older and unknown authors of the names, and perhaps for additional descriptions for many which were *nomina nuda* in the one catalogue which has come down to us. Fantasy, yes, but surely plausible. In accordance with the practise of the opposition, my thesis is therefore valid, and must be accepted until someone can absolutely disprove it.

Dr. Graustein's assertion that Nuttall did not consider the Catalogue names validly published should dispose of the matter for those who believe that he wrote it. But Cronquist, Keck

and Maguire have put forth an astonishingly incoherent argument for validity of "Nuttall's" names containing the statement that authorship is irrelevant. Their assertion that the names "were accepted in that published work by whoever wrote it" is dogmatic and quite meaningless. As pointed out above, none of the four known botanical authors involved (at least three of whom reportedly coined names used in the Catalogue) accepted those names as legally published. We must look at the case with our present rules of nomenclature in mind. Despite the seemingly scandalous customs of the time, our four early botanists behaved in this case remarkably in keeping with our current views on valid publication and formal acceptance by an author of new names. I see no justification for acting contrary to both early custom and modern rules. It is really supererogation to bring in anonymity as equivalent to non-acceptance in order finally to reject the Catalogue names, but I repeat that this is logical and legitimate. The three contending authors have presented no reason to refuse Rousseau's suggestion. They state flatly in one sentence that "anonymity of the author is no bar, under the Rules, to validity of publication of a name," but add lamely in the same paragraph that they "do not wish to comment on the status" of Rousseau's example, and follow this with the dogmatic statement about the Catalogue (wholly unproved, and refuted by contemporary evidence) which has just been quoted.

Still we have not done with this much belabored subject. If so much in it is controversial, we may well turn to established usage, to glean any help we can. Let us review in detail the names which appeared in Fraser's 1813 Catalogue with enough description to require consideration. Of the twenty, three were validly described by Nuttall in 1818 with the same binomials, were not named by anyone else in the interim, and therefore need not concern us further: *Cactus* (now *Mammillaria*) *viviparus*, *Lilium andinum*, *Rudbeckia purpurea* var. *serotina*. A fourth had an older name: *Vitis campestris* was *V. riparia* Michx. (*V. vulpina* of authors). The two species of *Sideranthus* may be disregarded, since they were given a combined description and were not differentiated. (The generic name may also be rejected as an inextricable mixture, though as Britten pointed out, it should have been adopted under the American Code for

Chrysopsis because the first species to be listed when the two were differentiated was in the later-described genus: a case for so doing could even be made out now, if my transfer of *Chrysopsis* to the older *Heterotheca* is no more acceptable than my views on Fraser's Catalogue.) For three species, the only question is one of authorship: *Eriogonum flavum* (published by Pursh, not claimed by Nuttall), *Malva* (now *Sphaeralcea*) *coccinea* (published by Pursh, later claimed by Nuttall), and *Phalangium* (now *Camassia*) *esculentum* (described by Ker-Gawler as *Scilla esculenta*, next by Pursh as *Phalangium Quamash*, then claimed by Nuttall with the original Catalogue name). For the last-named species, Gould unaccountably uses the binomial *Camassia Quamash* (Pursh) Greene in his revision of the genus (Amer. Midl. Nat. 28: 728, 1942). This must give way to *C. esculenta*, with (Nutt.) Lindley as authorities if dated from the Catalogue (very precisely with "J. & J. T. Fraser" in parentheses, as publishing authors), or (Ker-Gawler) Lindley if dated from the Botanical Magazine.

If we reject the Catalogue names, we must abandon *Amorpha nana* Nutt., *Astragalus crassicaarpus* Anon. (Nutt.?—he does not actually admit responsibility for this binomial, though obliquely claiming the species was his), *Dalea enneandra* Anon., *Agastache anethiodora* (Anon.) Britton, *Penstemon grandiflorus* Anon., *Ratibida columnifera* (Anon.) Wootton & Standley, and *Yucca glauca* Anon. (Names which were never acknowledged by Nuttall as his are marked "Anon."; they would have to be credited to J. & J. T. Fraser if to anyone.) These would have to be called respectively *Amorpha microphylla* Pursh, *Astragalus carnosus* Pursh emend. Nutt., *Dalea laxiflora* Pursh, *Agastache Foeniculum* (Pursh) Kuntze, *Penstemon Bradburii* Pursh, *Ratibida columnaris* (Pursh) Rafinesque, and *Yucca angustifolia* Pursh. It should be pointed out again that Nuttall himself accepted the second, third, fifth, and sixth of the latter names, in contemporary combinations; that he credited *Penstemon grandiflorus* to "Fras. Cat." and not to himself; that he never mentioned *Hyssopus* (later *Agastache*) *anethiodorus*; and that he claimed only *Amorpha nana* as his.

If we accept the Catalogue names as validly published, we must abandon *Oenothera missouriensis* Sims, *O. caespitosa* Sims,

Grindelia squarrosa (Pursh) Dunal, and *Gaillardia aristata* Pursh. These must be called respectively *Oenothera macrocarpa* Nutt. (or J. & J. T. Fraser), *O. cespitosa* Nutt. (or J. & J. T. Fraser), *Grindelia* (new combination based on *Thuraria herbacea* Anon. in J. & J. T. Fraser), and *Gaillardia* (new combination based on *Virgilia grandiflora* Anon. in J. & J. T. Fraser). Under present extremist rules, since publishing authors are held more important, we need cite only the names of the Frasers if we choose, crediting none to either Nuttall or Pursh.

In mentioning only the case of *Penstemon grandiflorus* vs. *P. Bradburii* ("bradburyi"), the three New York authors were telling us a great deal less than the whole truth. If their views are accepted, we shall be required to replace three very familiar names of widespread and economically important species (*Oenothera missouriensis*, cultivated; *Grindelia squarrosa*, weed; *Gaillardia aristata*, cultivated) with much more offensive substitutes than *Penstemon Bradburii*, two of them new combinations! How much better to take the course which requires no new names, and the displacement of none that are nearly so common and widely known as the three just cited. (I discount *Astragalus carnosus* and *Dalea laxiflora* because each of these species appears in current works not under one name but under three. No possible course of action can avoid the rejection of names for them which have become well known for some parts of the country.) The three authors claim to "believe that the interests of nomenclatural stability would be better served by the admission of Fraser's Catalogue as a proper publication than by its rejection." I ought to have been utterly crushed by the weight of so much eminent authority. Instead I survive to observe mildly that authority is, after all, an imprecise term.

My earlier conclusions still stand. There is no proof that Nuttall himself wrote Fraser's Catalogue. This was compiled by a person or persons unknown, using some unpublished names coined by Nuttall (possibly even with his assistance in so doing), but using a much larger number of names originated by others. The Catalogue names were not accepted as validly published in it by Nuttall, nor by Pursh, nor by Sims, nor by Ker-Gawler. There is no necessity to accept them today. By rejecting them, we keep name changes to a minimum.

A last additional note on *Astragalus carnosus*. It is known that Pursh himself was describing primarily a specimen of *Sophora sericea*. He added the fruit characters from an *Astragalus* collected by Nuttall, and chose an epithet describing the fruit in particular. The binomial therefore rests on discordant syntypes, regardless of the fact that Pursh may not have had in his hands material of anything but the *Sophora*. Under the rules, the first author to select a lectotype for a species based on a mixture fixes the application of the binomial. This Nuttall did in 1818, by restricting the binomial to the *Astragalus* element. If we reject the Catalogue name (as Nuttall himself did, and as I argue we therefore must do), and do not split up the genus *Astragalus*, the plant must be *Astragalus carnosus* and cannot legally be called anything else. Pursh's primary type material ceased to have any bearing on the application of the binomial when Nuttall explicitly defined it as belonging to an *Astragalus*.

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