

TRANSACTIONS

OF THE

LINNEAN SOCIETY.

I. *Characters of a new Liliaceous Genus called Brodiaea.* By James Edward Smith, M.D. F.R.S. P.L.S.

Read April 19, 1808.

I HAVE had occasion, in treating of the distinctions between a calyx and corolla, *Introduction to Botany*, 263, to advert to a new genus of the liliaceous family, furnished with internal petals. It consists of two species, both which I have received, in a dry state, from Mr. Menzies, who discovered them in 1792 in New Georgia on the west coast of North America. The same liberal friend, to whom the Linnean Society, as well as myself, has so often been obliged, perceiving I had, in the place above mentioned, fallen into an error respecting the number of the internal petals, which are 3, not 6, has favoured me with his original drawings, made from living plants on the spot, with dissections. By these I am enabled better to understand the subject than I could from dried specimens, which I had been unwilling to submit to the process of boiling and anatomizing, till I might have occasion to investigate them thoroughly for precise description. Hence the divided inner petals of one of them

misled me. Mr. Menzies at the same time has communicated a suggestion of Mr. Salisbury's, that these supposed petals are barren filaments. It will appear, from the following characters and remarks, how far this idea is probable or not.

In the first place, as these plants form a most indubitable new genus, of the Liliaceous, or Patrician, order, I have called it *Brodiaea*, after James Brodie, Esq. F.L.S., of Brodie in North Britain, a gentleman whose scientific merits, whose various discoveries, and whose liberal communications on every occasion tending to elucidate the botany of his country in particular, require no elaborate display before the Linnean Society.

BRODIÆA.

TRIANDRIA *Monogynia*. *Sect. 2; flores inferi.*

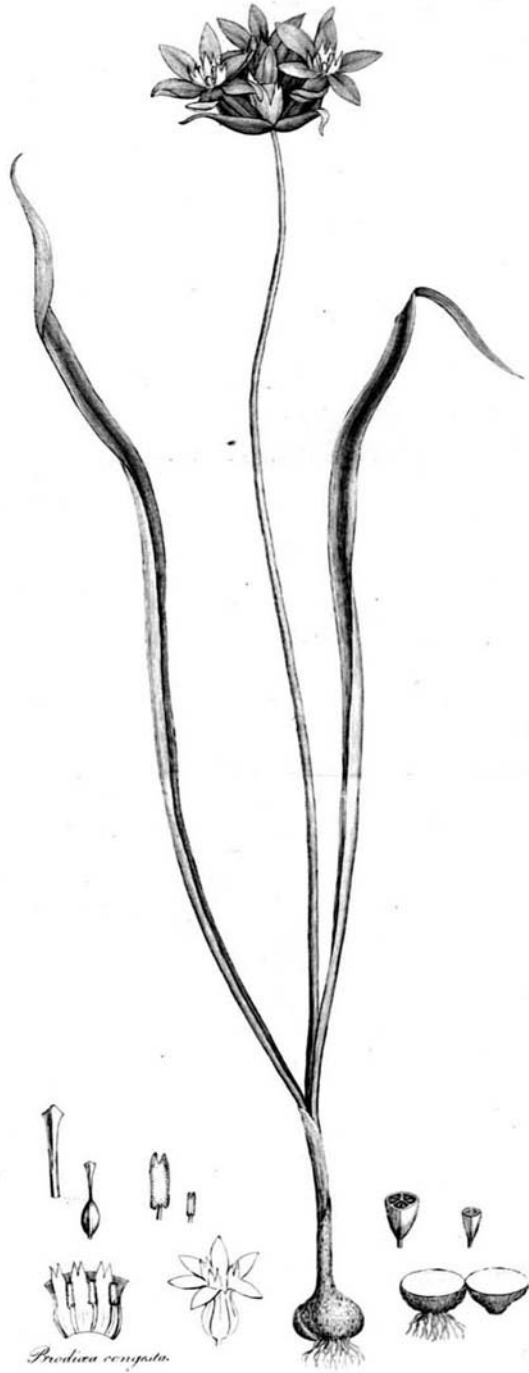
NARCISSI. *Juss. 54. Sect. 1; germen superum.*

Calyx nullus. *Corolla* infera, tubulosa; limbo sexfido, regulari; coronâ triphyllâ in fauce. *Capsula* trilocularis, polysperma.

1. *B. grandiflora**, coronæ foliolis indivisis.

Radix bulbosa, globosa, solida, tunicâ multiplici, nervosâ. *Folia* bina, radicalia, vaginantia, lineari-lanceolata, acuta, involuto-canaliculata, glabra, ferè pedalia. *Scapus* solitarius, foliis paulò brevior, teres, glaberrimus, subsexflorus, plùs minùs tortuosus. *Pedicelli* umbellati, patentiusculi, filiformes, uniflori, longitudine varii. *Bractee* ad basin umbellæ, plures, lanceolatae, scariosæ, nervosæ, acuminatæ, pedicellis longè plerumque breviores. *Flores* Galanthi magnitudine, pulchrè cyanei, erecti. *Corolla* semisexfida; tubo pallescente, laciniis regularibus, subæqualibus, latò lanceolatis, patienti-recurvis; fauce co-

* *Hookera coronaria*. *Salisb. Par. t. 98.*



Pseudisacis corymbosa.

ronatâ foliolis tribus, petaloideis, erectis, oblongis, uniformibus, indivisis, dilutè flavescens, limbo duplò brevioribus, cum staminibus alternantibus. *Filamenta* tria, brevissima, fauce, inter coronæ foliola, inserta. *Antheræ* verticales, fulvæ, oblongæ, coronâ parùm breviores, bilobæ, lobis extùs longitudinalitèr dehiscentibus, haud absolutè bilocularibus. *Germen* pedicellatum, elliptico-trigonum, triloculare, seminibus columellæ insertis. *Stylus* cylindræus, longitudine ferè staminum. *Stigma* trigonum, trilobum.

2. *B. congesta*, coronæ foliolis bifidis.

TAB. I.

Radix et *herba* ferè prioris. *Umbella* minor, condensata, bracteis majoribus, latis, pedicellos superantibus. *Flores* cyanei, coronâ dilutiore, nec flavescens, foliolis semibifidis, acutis antheras longè superantibus, at limbo duplò, ut in priore, brevioribus. *Stamina* parùm e fauce prominentia inter coronæ foliola.

The three petal-like leaves, which crown the tube of the corolla in this genus, are, without doubt, analogous to the cup in *Narcissus*, the membranous expansion attached to the base of the stamens in *Pancreatium*, and still more precisely to what Jussieu calls *squamulæ*, and Linnæus *nectarium*, in *Tulbaghia*. I see no more reason to reckon them barren filaments in one case than in the others; though, if my *Brodicæa grandiflora* were the only liliaceous plant furnished with them, they might, with great appearance of probability, be taken for such. But *Brodicæa congesta* guards us against this error, and approaches a step nearer to *Pancreatium* and *Tulbaghia*. These three genera indeed bear the same relationship to the other *liliacæ*, that *Gnidia*, *Struthiola* and *Quisqualis* do to *Daphne* and the rest of its natural order.

If the petals of *Gnidia* prove *Daphne* to have a coloured calyx, these correspondent parts in the *liliaceæ* must receive correspondent names. Jussieu therefore is consistent when he denominates the analogous part in the *liliaceæ* and in *Daphne* a calyx, and so is Linnæus when he calls it in both instances a corolla; but the latter errs against all consistency and analogy when he terms calyx in *Gnidia* what he had, in the preceding page, named corolla in *Daphne*. Mr. Salisbury's rule, given in the first paper of our 8th volume, that *the stamens are never inserted into the calyx*, is one of the best upon the subject, yet not without its difficulties, some of which, from a love of truth alone, I beg leave to suggest. If we admit this rule in rosaceous flowers, and the more I have thought on the subject the more I feel disposed to do so, we can hardly allow it in *Ribes*, whose whole faded calyx, perfectly homogeneous and indivisible, sticks to the top of the fruit, retaining the withered petals and stamens, which are together inserted into its sides. If we say analogy proves the lower half of this pretended calyx to be a receptacle, a similar mode of reasoning will prove the tube of *Pan-cratium*, *Narcissus*, *Tulbaghia*, and of my *Brodiea* to be a receptacle also, the limb only being the calyx, and the crown a corolla. If this be granted, the lower part of the corolla, as it is usually called, in *Hemerocallis*, *Agapanthus*, *Amaryllis*, *Hyacinthus*, &c.; even the claws of such few, if any, polypetalous *liliaceæ* as really have their stamens inserted there, must also be a receptacle, and the upper part a calyx; which is too paradoxical to be allowed. I say nothing of the *spatha* belonging to some of these liliaceous genera, because even when present I do not think it can invalidate my argument. Their generic characters are independent of it, as those of the *umbelliferæ* are of their *involucra* and *involucella*. I have therefore, in describing the

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the *Brodiaea*, used the word *bractea* instead of *spatha*, as more agreeable to nature.

These difficulties do not trouble the generality of practical botanists; but theoretical ones, before they can found new genera, or even understand the old ones to any purpose, are, and always have been, obliged to consider them, and may be glad of any suggestions on subjects concerning which the chief leaders in botany have never agreed together, nor scarcely been consistent with themselves. I am persuaded the line of discrimination betwixt a calyx and corolla is, in many cases, not to be drawn, for this plain reason, that Nature in such cases unites both the parts into one, the inner surface performing the functions of a corolla, the outer those of a calyx. This is a suggestion of Linnæus, but he has not illustrated it so fully as it deserves. I need not repeat here what is already before the public in another place, *Introduction to Botany*, 264, 266, and 267; nor shall I now add any thing more than a wish, that a subject so interesting to the physiological as well as the systematical botanist might be pursued by both to their mutual assistance.

Norwich, March 5, 1808.