

R E M A R K S

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SOME FOREIGN SPECIES OF

O R O B A N C H E.

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XII.^r *Remarks on some Foreign Species of Orobanche.* By James Edward Smith, M. D. F. R. S. P. L. S.

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THE British species of *Orobanche* have till lately been very ill understood, and it appears upon examination that the foreign ones still require elucidation. The very first species in Linnæus, *Orobanche lævis*, when put to the test of botanical criticism, is found to be a non-entity; its history having been fabricated, partly from synonyms which belong to *Orchis abortiva*, and partly from those of a real *Orobanche*, which however Linnæus never knew, and which does not answer to the name or character of his supposed *lævis*.

The original authority for the *Orobanche lævis* is the first edition of *Species Plantarum*, p. 632, where it is taken up entirely from other authors, who have described it as being found near Montpellier, of which place Linnæus accordingly gives it as a native, nor does he mention its being known in any other country. He had no specimen from thence in his collection, though he had then before him a specimen of a Siberian plant, figured in the *Flora Sibirica* of Gmelin, (who sent it to Linnæus,) vol. iii. tab. 46. fig. 2, as an *Orobanche*, which Linnæus suspected might be the same with the Montpellier species, and therefore marked it *lævis*, with a mark of interrogation, as it still remains in his herbarium. It answers indeed

deed to the specific definition of *lævis*, *caule simplicissimo*, *lævi*, *staminibus exsertis*; but there is no reason to believe that definition was made from the contemplation of this specimen, rather than from the synonyms and figures quoted in the *Species Plantarum*: and as Linnaeus never farther described the specimen, nor referred to Gmelin, neither did he ever mention Siberia as the native country of his *Orobanche lævis*, this can never be taken for such, even though there should prove to be no other existing, as we now hope to demonstrate; more especially as this Siberian specimen proves a *Lathræa*, having a monophyllous quadrifid calyx, and the true habit of that genus.

In order clearly to understand the history of this mistaken species, the *Orobanche lævis*, it is necessary to analyze its synonyms chronologically. We begin therefore with

OROBANCHE magna purpurea monspessulana. *Baubin's Hist. Plant.*
vol. ii. p. 782.

This plant is evidently taken up by John Bauhin from Lobel, in whose *Icones*, p. 269, we find two figures. The first represents, I think unquestionably, though rudely, the *Orchis abortiva* of Linnaeus, and is marked *Orobanche major e Gramuntio luco Monspelliensium*. The second exhibits a true *Orobanche*, and is marked *Orobanche quarta*. Now it appears that the description of John Bauhin belongs to the first of these plants, though he, or his editor, has by mistake annexed to that description a copy of the second figure. Whether the description be taken from any of Lobel's other publications, I have not been able to determine, nor is that point of any consequence; it is sufficient that it agrees altogether with the *Orchis* above-mentioned, and not with any *Orobanche*, the flowers being described "like those of an *Orchis* with short spurs, and the root like the upper part of that of an *Orchis*, but without any *testiculi* or bulbs."

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Bauhin



Bauhin justly censures Lobel's figure, as wanting the spurs; he also enquires whether this plant may not be what Clusius mentions in his *Historia*, as "a plant like his *Pseudo-leimodoron*, but much paler, found in the wood of Gramont, and several other woods about Montpellier." There can be no doubt of the *Pseudo-leimodoron* of Clusius, *Hist. Plant.* 270, being the *Orchis abortiva*, though a figure of *Ophrys Nidus Avis*, by an error common in books with wooden cuts, is put for it*. The description in that work is indeed copied from his *Stirpes Pannonicæ*, where the plant is named *Limodorum austriacum*, without any figure; and the paler variety, which he remembered to have seen formerly near Montpellier, is also there mentioned. I consider therefore the descriptions of John Bauhin and Clusius, and the first or left-hand figure of Lobel's *Icones*, p. 269, as clearly belonging to *Orchis abortiva*, and having nothing to do with any *Orobanche*. With respect to the second or right-hand figure of Lobel, copied into Bauhin's work by mistake, it as indubitably, I think, represents the *Orobanche* lately published in *Tab.* 423 of *English Botany*, by the name of *cærulea*, which several authors there mentioned have taken for the Linnæan *lævis*: it cannot however remain, when the above errors are cleared away, as the true *lævis*, because it is not in fact smooth, neither do the stamina project out of the flower; though Morison, in his copy of this figure, *sect.* 12. *t.* 16. *f.* 2, has in one flower so represented them; for the compiling and copying tribe of authors are sure to add something every now and then to the general stock of error, how little soever they may supply to that of solid knowledge. The style indeed projects in Lobel's figure, and all its copies; the stem too is represented smooth, and the form of the corolla is very ill expressed: yet these figures can be designed for nothing else than our *O. cærulea*.

* Villars points out this error in his *Plantes de Dauphiné*, vol. ii. p. 40.

The next synonym in the *Species Plantarum*, that comes under consideration, is that of Caspar Bauhin :

OROBANCHE majore flore. *Bauhin. Pin.* 88.

This author quotes only the *Orobanche quarta* of Lobel's *Icones*, and an *Orobanche* of the *Hortus Eystetensis*, a work I have not in my possession. We must conclude that he intended the *Orobanche cœrulea*, especially as he has the *Orchis abortiva* in the preceding page, by the name of *Orobanche Monspeliaca floribus oblongis*, under which he properly cites Lobel and Clufius.

Morison's figure, mentioned above, is also referred to by Linnæus, in the same paragraph in which he quotes C. Bauhin. What this author has said, p. 502, likewise refers to the *Orobanche cœrulea*; and he rightly quotes another paragraph of Clufius, who, in his *Historia*, p. 271, in a slight and superficial way mentions having seen the same plant growing in corn-fields at Montpellier, upon common thistles.—Morison has the *Orchis abortiva* in the same plate with the above, *fig.* 4, and, in p. 502 of his letter-press, copies John Bauhin's account of it as an *Orobanche*. He describes this very plant over again, *p.* 503, *n.* 19, but without a figure.

The only remaining synonym in the *Species Plantarum* is that of Sauvages, from his *Methodus Foliorum*, which is an arrangement of the Montpellier plants, both wild and cultivated, according to their leaves :

OROBANCHE caule simplici cœruleo bracteis brevibus.

Sauv. Meth. 4.

This author quotes John Bauhin only; and as he has the *Orchis abortiva* in the same page, under the name of *Limodorum*, there can be

no doubt of his having, in the paragraph above referred to, intended the *Orobanche cærulea*, though he either did not read, or did not attend to, Bauhin's description. He has moreover a repetition of *Orchis abortiva*, p. 23, n. 114.

I beg leave to conclude with a reference to one original author at least, who really studied and understood the plants he enumerated, as well as the books he quoted, Magnol in his *Botanicum Montpellierense*.

This writer, p. 195, evidently describes the *Orchis abortiva* by the name of *Orobanche magna purpurea Monspessulana*, I. B, referring also to Lobel and Clusius. He mentions having often gathered the plant in the wood of Gramont in April and May, and justly criticises the figures of the above authors. "The lower lip of the flower in Clusius's figure," he observes, "is cloven, which is not the case in the Montpellier plant." This figure I have already pointed out as representing the *Ophrys Nidus Avis*. Magnol farther remarks, that "the figure of Bauhin is faulty, there being no proportion between the stem and flowers; and that it is a copy of the *Orobanche quarta* of Lobel. The figure of Lobel," he adds, "would have been better if the roots had been drawn as in that of Clusius, and the flowers represented with short spurs."—From all this there can be no question about the plant of Magnol; and Gouan, though he quotes him under *Orobanche lævis*, Hort. Monsp. 308, expresses a suspicion that he meant the *Orchis abortiva*: but neither of these writers, nor any following one that I can find, has hit upon the true cause of all the confusion that has enveloped the plants in question, which is John Bauhin's having copied one figure of Lobel for the other. Magnol has our *Orobanche cærulea*, p. 196, by the name of *Orobanche subcæruleo flore, sive secunda Clusii*; and mentions
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having often found it, in the month of May, in grassy places near the sea—the very situation in which it occurs in Norfolk. Gouan very erroneously refers to this synonym of Magnol as belonging to *Orobanche ramosa*. The *Botanicum Monspeliense* of Magnol being to the Montpellier botanists what Ray's *Synopsis* is to our English ones, they are necessarily supposed to know every plant it contains; and what they really do not understand, they refer to some other species as varieties, but too often on insufficient grounds.

To contribute something more towards the history of this confused genus of *Orobanche*, I shall add the characters of two foreign species not hitherto ascertained. The British ones will soon be more fully elucidated than they have hitherto been, by the labours of the Rev. Mr. Sutton, a member of this Society. Our joint observations, particularly the characters we have discovered for discriminating the species, may perhaps be of use to botanists of other countries, who may make still farther discoveries than we have made; so that in time a tolerably complete history of the genus may be obtained, for which we have scarcely materials at present sufficient.

I. *OROBANCHE caryophyllacea*.

O. caule simplici, corolla inflata fimbriato-crispa; labio inferiore laciniis obtusis æqualibus, staminibus intus basi hirsutis.

O. major. *Pollich Palatin.* v. ii. 200.

O. major, garyophyllum olens. *Baubin. Pin.* 87.

Gathered on shrubby hills near Valcimara at the foot of the Apennines, in April 1787. *Tour on the Continent*, vol. ii. 308. *Linnæus* received the same from Siberia.

This has very much the habit of the *Orobanche major* of *Engl. Bot. t. 421.* and all other British authors, and has been so universally
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confounded with it by foreigners, that it is utterly impossible to allot to each its proper synonyms, no botanist having as yet properly described the stamina, in which the true character resides; much less do the figures of old authors lend any assistance towards this discrimination. I here quote Caspar Bauhin, merely on account of his mentioning the clove-like smell: in his synonyms he appears to confound these two, and possibly several more species. We have no reason to think that Linnæus intended the one more than the other for his *O. major*, he having preserved no Swedish specimen; but I have retained that name for the English plant, which is also the more common of the two throughout Europe. When some English writers tell us it has "a faint smell of cloves," I believe that remark has been made rather from regard to books than to nature; for the *O. caryophyllacea* has indeed not a *faint*, but a very strong and fragrant smell of cloves when fresh, as I can witness: but I never met with any body who could perceive the least degree of the same smell in any *Orobanche* found in Britain.

With respect to more modern synonyms of these two species, Villars in his *Plantes de Dauphiné*, vol. ii. 407, evidently appears to have known them both, but thought them one species; he having only been anxious to distinguish from them the *O. cærulea*, *Engl. Bot. t. 423*, about which indeed there can be no dispute. Pollich's most excellent description leaves no doubt of his *O. major* being my *caryophyllacea*; I have therefore quoted him without any hesitation. Haller under his No. 295 seems to have intended neither of these, but rather the *O. minor*, *Engl. Bot. t. 422*, except that he mentions the clove-like odour. He refers to Micheli, who published a little Italian work in octavo at Florence, in 1723, upon this *genus*, chiefly to indicate a method of extirpation. This book enumerates many varieties, among which probably our new species are all to be found.

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The *O. minor* is the only one I have ever met with growing in such situations, or in such abundance, as to be deemed a weed; and it attaches itself, as Haller observes, to the roots of *Diadelphous* plants, particularly clover. Gmelin in his *Flora Sibirica* mentions several varieties of what he took for *O. major*; but it is not possible to determine what they really are.

β. Haller has recorded as a variety of his 295, a Swiss *Orobanche*, of which a drawing had been sent him, "with a very dense conical spike, a very short flower, and style projecting considerably out of it," which, he adds, "is so remarkable as to deserve being reckoned a species, provided more specimens could be discovered." This same plant is to be found in the Linnæan herbarium, gathered in eastern Pomerania by a Mr. Brunnemann, and very well preserved. If a variety of any thing, it must be *O. caryophyllacea*, with which the stamina precisely agree; nor does it differ from the other specimens in my possession, except in being more luxuriant, with a greater number of flowers in a younger, and therefore conical, spike, and in the corolla and stamina being not half so long as usual, while the style protrudes considerably. The germen is smooth; style slightly pubescent, incurved, with a dark-coloured stigma; bractæ, calyx, and divisions of the corolla, exactly as in the species to which I have ventured to refer it.

I have only to observe farther, that the *Orobanche caryophyllacea* agrees very nearly with *O. major* in habit and size, as well as the appearance of its flowers; but differs from the latter in having the three segments of the lower lip obtuse, and much more fringed and curled. The germen also is entirely smooth, which in *O. major* is hairy in the upper part, and the style is much less downy than in that species. The most striking mark, however, of *O. caryophyllacea* consists in the lower part of the stamina, on the inside, being thickly clothed



clothed with hairs, whereas that part in *O. major* is always perfectly smooth. The stigma of *O. caryophyllacea* is brown or purplish; that of *O. major* yellow.

2. OROBANCHE *gracilis*.

O. caule simplici, corolla inflata; labio inferiore brevissimo laciniis obcordatis inæqualibus fimbriato-crispis; staminibus styloque pilosis exsertis.

Gathered in hilly pastures at St. Ortese near Genoa, in July 1787.

I can meet with no synonyms for this species. It has a taller and more slender stem than *O. major*, and is upon the whole less pubescent. The bractæ are shorter than the flower. Corolla the size of *O. major*, but the upper lip is of a dark or purplish colour, and less fimbriated or crisped than in that species. The lower lip is remarkably short, in three obcordate fimbriated segments, of which the middle one is larger than the other two, and is connected at its base with the very prominent two-lobed palate of the flower. The stamens are slender, thinly clothed all over, as well as the style, with scattered hairs, and project out of the mouth of the flower. The germen is smooth. I do not recollect its having, when fresh, any peculiar smell.

The *O. gracilis* has most affinity to the *minor* in some of its characters; but differs in its larger inflated corolla, short lower lip, longer stamens, and hairy style.