

Euphrasia brevipila and *E. borealis* in the British Isles

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ABSTRACT

The correct name at specific rank for British and Irish plants known until now as *Euphrasia brevipila* is *E. borealis* (Townsend) Wettst. Plants from Orkney and Shetland known as *E. borealis*, *E. borealis* var. *speciosa* and *E. borealis* var. *zetlandica* are referable to *E. arctica* Lange ex Rostrup, which is endemic to the Faeroes, Orkney and Shetland. Plants from the rest of the British Isles referred by Pugsley to *E. borealis* are correctly placed, though plants corresponding to the north English form regarded by him as typical of *E. borealis* are not as widespread as he indicated.

The publication in 1930 of H. W. Pugsley's *Revision of the British Euphrasiae* brought about a major clarification of the taxonomy of the British Eyebrights, and since that time British students of the genus have endeavoured to apply Pugsley's findings. Wettstein (1896) had recognized both *E. borealis* (Townsend) Wettst. and *E. brevipila* Burnat & Gremler as British, distinguishing *E. borealis* from *E. brevipila* by its lack of short glandular hairs on the leaves. Pugsley (1930: 519) accepted this distinction but amplified it, saying that *E. brevipila* differed from *E. borealis* "in its rather narrower and more finely toothed leaves, which are lighter in colour and nearly always more or less glandular; and its flowers are lilac instead of white. On an average, its habit of growth approximates less closely to the early-summer type than that of *E. borealis* . . ." In fact, Pugsley (l.c., p. 517) considered that there had been some confusion in the material of *E. borealis* that Wettstein had cited and asserted that the most characteristic gathering cited in Wettstein's original description was Townsend's from Borrowdale (dated 1884 according to the citation by Pugsley, l.c., p. 515). Pugsley stated that *E. borealis* was "widely distributed in Scotland, less so in England and Ireland", and that "In the Orkneys and Shetlands it appears to be particularly abundant and variable".

In the course of my studies I have had no difficulty in recognizing plants corresponding with Pugsley's *E. borealis*. The characters I have used have included also the usually more elliptic capsule, as compared with *E. brevipila*, but, on the other hand, it has not been possible to accept the flower-colour character. Further, it has to be accepted, as was done by Pugsley (1930: 518), that absence of glandular hairs is not diagnostic of *E. borealis vis à vis E. brevipila*. Where I have had difficulty in following Pugsley is with regard to distribution. Clearly, it has seemed to me, the stronghold of *E. borealis* is the English Lake District and the northern Pennines, where it seems largely to replace *E. brevipila*. From here it spreads north into the Scottish border counties and, increasingly sparingly, south to the Peak District and Charnwood Forest (Leicestershire); it has also been collected as far south as Hitchin in Hertfordshire where it is, no doubt, long since extinct. I found that the plants from Orkney and Shetland referred to *E. borealis* and its vars. *zetlandica* Pugsley and *speciosa* Pugsley were also clearly recognizable. But in between the Scottish border

counties and the Pentland Firth, and in Wales, I have hardly ever, if at all, seen specimens corresponding with either the Lake District form or the Orkney and Shetland forms of *E. borealis*. From the north coast of Scotland itself I have seen specimens which I formerly thought might be included in *E. borealis*, but I now think they are young and luxuriant plants of a form of *E. nemorosa* that occurs on the coasts of north and north-west Scotland. I have never seen *borealis*-like plants from Ireland. The specimens cited by Pugsley (1930) from Tiree, v.-c. 103, (Macvicar, **BM**) are much branched, while those of Marshall's which he cites from Brora, v.-c. 107, are marked by him in **BM** as "? hybrid", so neither corresponds with the north English plant. Otherwise, I have seen only Townsend's Braemar specimens from among the material cited by Pugsley from Scotland apart from Orkney and Shetland, and Pugsley himself says that some of the Braemar material is uncharacteristic. In fact, Pugsley (1930) records *E. borealis* from only seven vice-counties from the mainland and Western Isles of Scotland, and from seven vice-counties from the very much smaller area of northern England. Thus, although Pugsley's outline of distribution quoted above gives the impression that *E. borealis* is found mainly in Scotland, his vice-county records clearly show a concentration of the species in N. England.

Regarding the taxonomy of *E. borealis*, I have gradually come to the view that the Orkney and Shetland plants are not the same as the north English-south Scottish ones from which they are, in my view, spatially disjunct. Further, I have doubted the practicability of recognizing the plants from the latter area as specifically distinct, and I finally abandoned this attempt, having in recent years determined such specimens as *E. brevipila*. The variation which has in any case to be allowed in *E. brevipila* is so great that it seems pointless to try to treat the rather minor departures from it represented by *E. borealis* as having specific rank. However, the geographical significance of this variation should not be lost sight of and may eventually receive taxonomic recognition at some infraspecific level. During work on North American eyebrights in recent years, Mr P. D. Sell and I had to investigate the name *Euphrasia arctica* Lange ex Rostrup, and we concluded that the type came from the Faeroes, and that it represented the same taxon as the "*E. borealis*" of Orkney and Shetland.

The conclusions outlined so far have been rather tentatively embodied in the notes on *E. borealis* in the *Critical Supplement to the Atlas of the British Flora* (Perring & Sell, 1968). (The distribution map given there, however, includes records authenticated by Pugsley and the late E. F. Warburg, as well as by myself). It will be seen that if these conclusions are fully accepted the Orkney and Shetland plants will become *E. arctica* and the rest will be merged with *E. brevipila*, a name which has priority over *E. borealis*. The name *E. borealis* would then disappear into synonymy. This situation is also implicit in determinations that I have made in recent years, and the purpose of this note is to prevent these conclusions being acted upon. This is because further relevant factors have come to light, as a result of my beginning work on an account of *Euphrasia* for *Flora Europaea*. In doing this work I have learned that Wettstein was apt to accept pairs of species differing only in the presence or absence of glandular hairs, and have found that if this character is ignored all the original material of *E. brevipila* from Haut Valais in Switzerland can easily be accepted as a slightly precocious, subalpine state of *E. stricta* Lehm. The *E. brevipila* of the British Isles, on the other hand, is not conspecific with *E. stricta*; it usually has larger capsules than *E. stricta* and has the basal pairs of teeth of the lower floral leaves

patent, instead of forwardly directed (antrorse) as in *E. stricta*. The name *E. brevipila* must therefore be abandoned for British plants, and the earliest name available at specific rank for British "*E. brevipila*" is then *E. borealis*. Thus the British "*E. brevipila*" and "*E. borealis*" (excluding specimens referable to *E. arctica*) are to be united not under the former name but under the latter. It may be that in *Flora Europaea* *E. borealis* will be reduced below the rank of species, but pending a final decision on this it seems best to go over straight away to using the name *E. borealis*. From now on it will be necessary to show on determinations of some Continental specimens that *E. brevipila* is a synonym of *E. stricta*, and it is therefore important to make it clear that I do not regard British "*E. brevipila*" as synonymous with *E. stricta*.

For the benefit of readers concerned with Continental species, it should be mentioned that I accept that members of the *E. borealis* group occur in Scandinavia and eastern Europe.

Mr Sell and I have dealt with the typification of *E. arctica* and *E. brevipila* in our manuscript paper on American *Euphrasia*. The nomenclature and typification of *E. borealis* is set out below.

E. borealis (Townsend) Wettstein, Mon. Gatt. Euphr. 108 (1896) ("Townsend pro var. *E. Rostkoviana* in sched., in H. Schinz, H. Townsend").

E. rostkoviana Hayne forma *borealis* Townsend in Rep. Botl. Exch. Club Br. Isl., 1: 307 (1891 for 1890).

Lectotype: *E. rostkoviana* Hayne f. *borealis* m.s. Grassy border of field nr. the Manse, Braemar. Aug. 25.—90. Frederick Townsend (CGE).

E. brevipila auct. non Gremli, quoad pl. Britannicae et Hibernicae.

The lectotype of *E. rostkoviana* f. *borealis* was chosen by Mr Sell and me in 1968. Ideally it should have been chosen from Townsend's own herbarium, but Mr Sell has been unable to locate this despite repeated enquiries. Of the four plants on the lectotype sheet all have the bracts setose and in two plants they are also freely glandular. They are characteristic specimens of the plant normally known in the British Isles as *E. brevipila*!

The original description of *E. rostkoviana* f. *borealis* appears in the Report of the Distributor for 1890 but has apparently been overlooked by later authors; the entire protologue reads as follows:

"*Euphrasia rostkoviana*, Hayne, f. *borealis*, m.s. Grassy border of field near the Manse, Braemar, 25th Aug., 1890. *E. rostkoviana* f. *borealis*, has an included corolla tube, and the whole plant is eglandular, or when glands are present, they are very shortly stalked. It is probably a common form in Scotland.—Fredk. Townsend".

It is not known whether Wettstein saw this printed matter attached to the herbarium sheets he studied, but since he cited the type of *E. rostkoviana* forma *borealis* and used the epithet *borealis* at specific rank, the basionym of *E. borealis* must be *E. rostkoviana* f. *borealis*, its authority "(Townsend) Wettst.", and its type the Braemar specimen. It is thus impermissible to typify *E. borealis* except by the Braemar gathering of 25 Aug. 1890, and Pugsley's treatment of the Borrowdale form as typical of the species cannot be accepted as a lectotypification. In fact Wettstein used the Braemar gathering for both of his illustrations (Taf. III, figs. 147–153; Taf. XI, fig. 7), and described it as the "Original-Exemplar", that is, the type, in the legend on p. 308 to the photographic illustration.

Plants described as *E. borealis* var. *speciosa* Pugsl. may be included in *E. arctica* without separate recognition; they differ only in having rather larger corollas than usual. *E. borealis* var. *zeilandica* Pugsl., on the other hand, is probably derived by crossing between *E. arctica* and *E. confusa*; it could well be retained as a variety of the former but I feel it is still too soon to make the required new combination.

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