

History and distribution of *Sagina procumbens* forma *daviesii* (Druce) Paul A. Smith

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Abstract

There have been occasional records of flore pleno forms of *Sagina procumbens* from Britain and Ireland for two hundred years. Druce assigned these forms the varietal name var. *daviesii*, and a lectotype is designated here. A varietal rank cannot be maintained for this form, which becomes forma *daviesii* **stat. nov.** The records and observations on this variety are reviewed, including a new report from vc110 (Outer Hebrides), and the distribution is summarised.

Key words: flore pleno, teratology, petalody

Introduction

Modern floras generally mention that *Sagina procumbens* flowers can have petals, and petalliferous specimens are heavily over-represented in herbaria relative to their occurrence in the wild. But there are also a few records and specimens of a flore pleno (“full flower”, that is with an extra whorl or whorls of petals) form, with many petals making delightful tiny white flowers. Their attractiveness has led many of those who find it to write about it, and this forms a literature trail which can be used to summarise its distribution.

Nomenclature

These forms were named *Sagina procumbens* lusus *daviesii* Druce (1919) after the Rev. Hugh Davies (the author of *Welsh Botany*), who first found it (*lusus* means a sport or variant, and is not a commonly used taxonomic level). Druce’s short note in which he first uses the name *daviesii* refers to the description and figure in Baxter (1837), but does not designate a type. It would be fitting if Davies’ plant could be the type, but although Druce mentions it several times, there is no published evidence that he saw it. The only specimen I have traced that Druce did see (Druce 1926) is from Littleton-on-Sea, collected by St. John Marriott (**SLBI**, <http://herbariaunited.org/specimen/325793/>) and so this is designated here as the lectotype for the basionym *daviesii*.

Druce later raised lusus *daviesii* to a variety (Druce, 1926), and the name var. *daviesii* (Druce) Druce has been consistently used by British botanists for this form (eg Elliston Wright 1948, Kitchener 2000), although Druce later said “rather a lusus than a true variety” (Druce, 1930, p272). Flore pleno specimens do not set seed and therefore do not propagate themselves except vegetatively, so variety is indeed a questionable taxonomic rank. Elliston Wright (1948) postulates that the flore pleno state is a single gene character, and the widely scattered records (see below) provide circumstantial support for this. Therefore the level of forma is appropriate and the correct name is *Sagina procumbens* forma *daviesii* **stat. nov.** based on Druce (1919, p279).

Methods

Old records have been sought from the literature, aided by those who have previously written about this form. Specimens of *Sagina procumbens* in the herbaria at **BM** and **E** have been examined and

details of plants fitting the description of f. *daviesii* have been abstracted. Available images of *S. procumbens* on Herbaria@Home (<http://herbariaunited.org>) were also reviewed. Hectads have been assigned where possible and where they were not given by the original recorder. They are given in [] below.

Nineteenth century records

The Rev. Hugh Davies was apparently the first to find f. *daviesii* “on the green at Beaumaris [SH67] in the summer of 1815” (Britton in Druce, 1913), and this specimen is still in **BM**. The existence of a flore pleno form is already noted by Römer & Schultes (1818, p497) in their catalogue of plant names, though they give no further details, so it is unknown whether they had knowledge of Davies’s find, or had a different source. It also appears in a flora of Bohemia (Seidl *et al.* 1838), referencing Römer & Schultes, so presumably it was also known from there.

The next record is a report from Co Down (vc H38) in 1822 (Elliston Wright, 1948), apparently the only Irish record to date. There are several other mentions in Britain from the nineteenth century, some associated with gardening where this delightful miniature seems to have been well thought of. Baxter (1837) says that it is “sometimes cultivated in gardens, but, I believe, it is rather rare”, and gives a painting (Fig. 1); he reports it flowering in the Oxford Botanic Garden [SP50] on 22 August 1836, though he does not say whether it was naturally occurring or an example in cultivation. He also recaps Davies’s record, but giving July 1817, so possibly Davies viewed or collected it more than once; the difference in dates has given rise to some confusion about the original collection date, but it is clearly 1815 from the herbarium specimen.



Fig. 1: Extract from Baxter (1837)’s plate showing *Sagina procumbens* f. *daviesii*.

An account of the Royal Caledonian Horticultural Society meeting 15 July 1842 at Inverleith, Edinburgh (Anon, 1842) says “For the four most curious NATIVE PLANTS, the premium was voted to Mr Middleton, for *Sagina procumbens* flore pleno, *Anagallis tenella*, *Cotyledon umbilicus* [*Umbilicus*

rupestris], and *Asplenium alternifolium*.” If it was a native plant it was presumably sourced somewhere not far away, a presumed first record for Scotland, but no location is given.

The Rev R.C. Douglas was the next to find it, between Stafford and Rugeley [SJ92] ‘growing amongst *Sphagnum* in a small bog’ (Douglas, 1850), which is a clearly native situation and a different type of habitat from the preceding records. The next record is in yet another botanic garden, this time on ‘the new rockery at Kew’ [TQ17] (Anon, 1883), though again there is no sign whether it had arisen there or been cultivated. Perhaps it is just more likely to be noticed in botanic gardens because they have many botanists.

There is a further European mention in Wigand’s (1887, p119) article on teratological forms seen in the region of Marburg; he describes what is clearly f. *daviesii*, but does not give a specific locality for it.

Twentieth century records

Into the twentieth century there was small flurry of records, first from Leith Hill [TQ14], collected by J.F. Duthie (Turrill, 1912). Turrill found that these specimens had an elongated receptacle, a characteristic also noted by Wigand (1887), but which has not been reported otherwise. There is a specimen *ex hort.* from a root taken from Leith Hill in **BM** (5 June 1914, ex herb. J. Roffey). Turrill’s note prompted Druce (1913) to recapitulate previous knowledge, and also Salmon (1913) to report a collection by Miss H.M. Salmon from Barcombe, Sussex [TQ41] in 1911 (also now in **BM**). Then in 1918 Bolton King found it from a second site on Anglesey, near Rhosneigr [SH37] (Druce, 1919).

Williams (1917) monographed the British *Sagina* species, and he mentions this aberration (*lusus*) but without giving it a formal name, so it was left to Druce (1919) to coin the epithet *daviesii*. Then when St John Marriott reported it from the golf course at Littlestone-on-Sea [TR02] in June 1925 (**SLBI**, <http://herbariaunited.org/specimen/325793/>) Druce took the opportunity to raise its rank to a variety (Druce, 1926).

Elliston Wright (1948) wrote a comprehensive note summarising most of the known information about f. *daviesii*, and reported a repeat observation from Littlestone-on-Sea (no date is given) and new records from S Hants (vc11) in 1942 and on a wall at Marlborough College [SU16] in 1943. He also included a photograph of the plant. From the same period, but not mentioned by Elliston Wright, is specimen from a tennis court in Worcester [SO85], 13 June 1940, from the herbarium of Carleton Rea (**BM**).

Finally towards the end of the twentieth century there is specimen in **E** (det P. Harrold) “abundant among stones by the River Lossie, Moss of Bednawinny, Dallas” [NJ14] collected by Mary McCallum Webster on 21 August 1976. Then Anstey (1999) reported it from Fife [NT19], and prompted further notes from Kitchener (2000) who had it in his vegetable patch at Halstead [TQ46], and from Chater (2000) who remembered it from his school cricket pitch at Bradfield [SU67] around 1950.

A new record, from vc110

Ongoing recording in the Outer Hebrides towards a new Flora prompted an expedition to the small island of Maragaidh Mor, to the E of Benbecula, and a place to visit because it is in its own tetrad. Although islands are generally small with small floras (as predicted by island biogeography), they seem to have more than their fair share of oddities. A small patch of *Sagina* plants very near the shore on Maragaidh Mor had delightful tiny white flowers, and on closer examination these proved to have many petals in multiple whorls. *Sagina procumbens* and *S. subulata* can be difficult to

distinguish in vc110 as some of the *S. subulata* is glabrous rather than glandular, but this one had the jizz of *S. procumbens*, and the other characters match (glabrous sepals in 4s, most leaves glabrous, a few with thick cilia on the margins). Close examination showed that this is another specimen of *f. daviesii* (Fig. 2 & 3). It was growing on bare patches of maritime peat among small shoots of *Festuca rubra* at NF89151 52648, 18 Aug 2017.



Fig. 2: *Sagina procumbens* forma *daviesii* among *Festuca rubra* on Maragaidh Mor, vc110.

Morphology

The morphology of all the specimens seems remarkably consistent, with many petals, broad at the outer edge of the flower, becoming narrower towards the centre until they are very narrow. Wigand (1887) notes that all of the floral parts have become petaloid – not just the stamens, but also the pistils, and this perhaps helps to explain the narrow central petals. The plant is therefore not fertile, but may persist vegetatively. Given its wide distribution, there is likely to be a genetic basis (Elliston Wright 1948), either as a recessive gene or as a mutation which is reasonably frequent (if still unusual).

Discussion

This distinctive form is so delightful that most botanists who come across it seem to write about it; indeed it seems that I am no exception. The known vice-comital distribution is 7, 11, 14, 15, 16, 17, 22, 23, 37, 39, 52, 85, 95, 110, H38, which shows a preponderance of records in the south-east of England (though this may be influenced by the distribution of botanists which is also densest there).

The habitats which have been described for f. *daviesii* are quite varied, including on peaty soils, from among stones and in lawns. It seems likely that this variety could arise in more or less any habitat where *S. procumbens* can be found.



Fig. 3: Close-up of a flower of *S. procumbens* forma *daviesii* from Maragaidh Mor, showing the much narrower petals in the centre.

However, despite its fairly regular appearance in publications over a couple of centuries, it is remarkably absent from floras. Druce included it in Hayward's Botanist's Pocket Book (Druce 1930, p272). Many other floras mention that *Sagina procumbens* may have small petals, but there is no mention of anything more in *Flora Nordica* (Jonsell, 2001), and f. *daviesii* is similarly not included in the first volume of Sell & Murrell (forthcoming).

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