

THE NOMENCLATURE OF THE BRITISH SPECIES OF GALINSOGA

By J. E. LOUSLEY.

Two species of *Galinsoga* are thoroughly established in Britain. The first is the well-known *G. parviflora* Cav. which has been known since 1861 from the vicinity of Kew Gardens (Irvine in Baker, 1862) and has long been a common weed in gardens in the London area and elsewhere. The stems have a few short (c. $\frac{1}{2}$ mm.) adpressed hairs which are denser towards the top, where there are usually a few glands. The leaves have blades seldom more than 4½-5 cm. long with shallow serrations. There are usually 3 external bracts to the flowers, the ligules are dirty white, small and inconspicuous and there are about 50 tubular flowers. The scales on the receptacle are trilobed; those on the achenes of the ligulate flowers are very small (under $\frac{1}{2}$ mm.) and unlike the larger ones (over 1 mm.) of the tubular flowers, which are spathulate. Cavanilles' (1794) description and plate leave no doubt of the identity of the plant described by him.

The second species was first recorded for Britain in 1939 by Brennan (1939), who followed the accounts given by Thellung (1915) and Mosseray (1937) and therefore used the name *G. quadriradiata* Ruiz & Pavon var. *hispida* (DC.) Thell. It can be easily distinguished from *G. parviflora* by the greater size of the plants when growing under normal conditions. The stems are clothed with numerous whitish, spreading (and often somewhat deflexed) hairs about 1½ mm. long and are very glandular towards the top. The blades of the larger cauline leaves are usually 6½-7 cm. long, cuneate at the base, rhomboidal in outline, and with prominent rather acute serrations. There is said to be only 1 (rarely 2) external bract to the flower, the ligules are larger than in *G. parviflora*, a true, pure white and conspicuously trifid, and there are fewer (15-30) tubular flowers. The scales on the receptacle are entire; those on the achenes of the ligulate flowers are similar to those of the tubular flowers and aristate. The achenes are hispid.

The important characters distinguishing the fruits of the two species have been very clearly set out by Jovet (1934) in a table of which the following is a translation:—

	<i>G. parviflora</i> Cav.	" <i>G. aristulata</i> " (<i>G. quadriradiata</i> var. <i>hispida</i> of Brennan's paper)
Scales forming the corona of the achenes of the tubular flowers	spathulate, fimbriate, equalling or even exceeding the tube of the corolla.	aristate, terminating in very acute threads, equalling or almost equalling the tube of the corolla.

Corona of the achenes of the <i>ligulate</i> flowers	absent (often), or formed of linear simple, toothed, often few, short scales.	with very numerous scales which are fimbriate, aris- tate (similar to those of the discal flowers) and can equal the tube of the corolla.
Achenes	scarcely hairy, with hairs short, appressed or scarcely spreading.	hispid, with abundant long spreading hairs.

The nomenclature of the second species involves a number of very difficult problems. Ruiz & Pavon published *G. quadriradiata* in their *Systema Vegetabilium Flora Peruviana et Chilensis* (1798). They attempted to contrast it with their *G. quinqueradiata* which is certainly *G. parviflora* Cav. which they cite under this. From this their description of *G. quadriradiata* differs only in "Corollis 4 radiatis" (instead of 5) and "Planta . . . sesquipedalis" (instead of bipedalis) and "foliis . . . rugosis" (not described in *quinqueradiata*). These differences have little significance and are insufficient to show that their plant was not a minor variant of *G. parviflora*. But they add, "Obs. 1 . . . Corollulae femineae profunde trifidae, purpurascetes." As is shown below, this reference to the colour of the ligules is important.

Much of Pavon's herbarium was purchased by A. B. Lambert and after the sale of his collections an important part (including manuscript lists of specimens supplied) went to the British Museum (Natural History). Other material eventually found a home at Oxford and Kew. Search has been made at all these herbaria but no specimen which could be regarded as a type of *G. quadriradiata* has been found. Thellung (1915) in a footnote states that he saw an "original example" in Herb. Boissier which showed "the characteristic hairs and glands, the reddish colour of the ligules and the very short ($\frac{1}{2}$ mm.) and blunt pappus-scales" (the italics are mine).

Bicknell (1916), in discussing two North American plants identical with ours, drew attention to the uncertainty about Ruiz & Pavon's second species and wrote, "In some respects the characterization of *G. quadriradiata* Ruiz & Pav. (*Syst. Veg.*, 198, 1798) might seem to refer to our plant but, as a whole, it is more descriptive of, and clearly applicable to, a mere form of *G. parviflora* Cav. (*G. quinqueradiata* Ruiz & Pav. *l.c.*), as was long ago determined by De Candolle." Bicknell therefore gave our second species a new name—*G. aristulata*.

St John & White (1920) revised the North American (and one Bolivian) species of *Galinsoga* using the colour of the ligules as the primary character for dividing the genus. At first sight this would appear less satisfactory than the use by Thellung (1915) of the shape of the pappus-scales but in practice it works out very much better. Thus Thellung amalgamated the purple rayed *G. hispida* Benth. (1844) (type in Herb. Kew) and *G. brachystephana* Hort. Berol. ex Regel, with *G. quadriradiata*. Examination of the type of the first suggests that it differs

in other characters than the ray colour, while the second is *G. caracasana* (DC.) Sch.-Bip., which St John & White (1920) say has achenes of the ray-florets glabrate or hispidulous on one side. Separation of herbarium material of South American Galinsogas into those with ray-flowers purple or roseate-purple and those with them yellowish or whitish as is done by St John and White for the North American plants indicates that the character of colour is here a good one.

It follows from Ruiz & Pavon's observation (see above) that their *G. quadriradiata* was neither *G. parviflora* nor the plant we have known under their name in this country.

S. F. Blake (1922) demonstrated that the genus *Adventina*, described from North American material by that eccentric botanist Rafinesque (1836) and overlooked by later workers, was in fact an account of two species of *Galinsoga*. Rafinesque's *Adventina parviflora* is clearly to be identified with *G. parviflora* Cav. The description of his second species can leave no doubt that his *A. ciliata* is Bicknell's *G. aristulata* and our *G. quadriradiata*. Rafinesque's account is graphic and draws attention to the production of abortive short terminal branches in the forks of the stem. I pointed out this feature when distributing well-grown plants from Claygate (Lousley, 1947) and it appears to be very constant. By adopting the earliest available trivial name will therefore be *G. ciliata* (Raf.) Blake.*

There is well-founded reluctance to employ any name based on Rafinesque's work but in this case it is difficult to find any valid reason for setting it aside. The original description is adequate, the work in which it appeared has been made available to a wide public, and Blake's combination has been widely used in American literature.

The main synonymy of the British plants is as follows:—

354. GALINSOGA Ruiz & Pavon (1794).

1. *G. parviflora* Cav. (1794).
2. *G. ciliata* (Raf.) Blake (1922); *Adventina ciliata* Raf. (1836); *G. parviflora* Cav. var. *hispidula* DC. (1836), non *G. hispidula* Benth. (1844); *G. quadriradiata* var. (vel subsp.) *hispidula* (DC.) Thell. (1915, 11); *G. aristulata* Bickn. (1916).
 - f. *Vargasiana* (Thell.) comb. nov.; *G. quadriradiata* var. *quadriradiata* f. *Vargasiana* Thell. (1915, 14), Brenan (1939); *G. quadriradiata* var. *hispidula* f. *Vargasiana* (Thell.) Brenan (1947).

The native country of both these Galinsogas is almost certainly in South America and is generally given as Peru but there is room for further research into this question. Both are weeds of cultivated land and spread rapidly. *G. parviflora* is now almost cosmopolitan. *G. ciliata* is less aggressive but has spread rapidly in several European countries in the present century. Both were known near New York as early as

*Blake's *comb. nov.* was actually printed as *Galinsoga cilata* but this is clearly an orthographic error.

1836. Some species of *Galinsoga* are undoubtedly native in remote mountain districts of the southern United States and in South America and it is likely that *G. parviflora* and *G. ciliata* had such a home. They probably found their way into cultivated fields before the discovery of America by Europeans. It is significant that the two references to *G. parviflora* in Pavon's diary give it as found in cultivated fields, and I have seen no specimens of either species marked from clearly native localities.

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