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SALVIA GLUTINOSA L. AND S. NUBICOLA SWEET: TWO PREVIOUSLY CONFUSED SPECIES

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The distribution of *S. glutinosa* L. is generally regarded as stretching from Europe, through the Balkans and the Caucasus, to the Himalayas. Study of recently collected material from Afghanistan, however, showed that it differed in several respects from the European plant. Accordingly, an examination of abundant material was made throughout the supposed species area. This revealed quite clearly that not one but two species were involved: *S. glutinosa* L. and *S. nubicola* [Wall. ex] Sweet.

The species *S. nubicola* Sweet, with a Himalayan distribution, was recognized by Bentham in his Labiatarum (219: 1833) but later reduced by him to a synonym of *S. glutinosa* L. in De Candolle's Prodromus (xii, 276: 1848). Stibal in her revision of the Indian species of *Salvia* (Fedde, Rep. xxix, 183: 1936) also treated *S. nubicola* as synonymous with *S. glutinosa*. Subsequent authors have followed this treatment, considering the European and Himalayan species as conspecific.

The best single character on which to differentiate the two species is the length, and the shape, of the corolla tube. In the European plant—*S. glutinosa*—the corolla tube is long and straight with more or less parallel sides and exserted from the calyx; in contrast, the corolla tube in the Himalayan species—*S. nubicola*—is short, usually included within the calyx, curved, and gradually expanded to a wide throat. Another differentiating feature which is more readily apparent in the field than in herbarium material is the shape of the hood: in *S. glutinosa* it is abruptly and clearly falcate; in *S. nubicola*, the hood is gradually curved and not falcate. Further, the labellum in *S. glutinosa* protrudes as a more or less straight extension of the corolla tube whereas in *S. nubicola* the labellum is reflexed. The differences in the corolla shape of the two species are illustrated in the figure.

In addition to these constant differences of corolla form, there are several others which are not so regular. These are given in tabular form.

	S. glutinosa L.	*S. nubicola* Sweet
leaf length/breadth ratio	(1·4 —) 1·5 (— 2)	(1·5 —) 1·8 (— 2)
calyx length	(12 —) 14 (—17) mm.	(10 —) 11 (— 13) mm.
fertile theca	5–7 mm.	3–5 mm.
leaf texture	always thin	usually thickish, sometimes thin
mature nuts	matt texture often with oil globules	smooth texture, usually without oil globules

S. glutinosa Linn. Sp. Pl. 26 (1753), holotype in LINN!

Distribution: E. Pyrenees, Maritime Alps, Jura, the French, Swiss, Austrian and German Alps, Carpathians, in Hungary, Bulgaria, Czechoslovakia, Romania, and extending eastwards far into European Russia, Apennines, Corsica, Dinaric Alps, Balkans, Pindus, Crimea, the Black Sea coastline of Turkey, Amanus, Caucasus and Transcaucasus, the Elburz mountains of Persia to its eastern limit in N.E. Persia. (In several parts of Europe *S. glutinosa* is naturalized as an escape from cultivation. Conf. Hegi, Flora Mittel Europa, v, 4, 2487: 1927.)

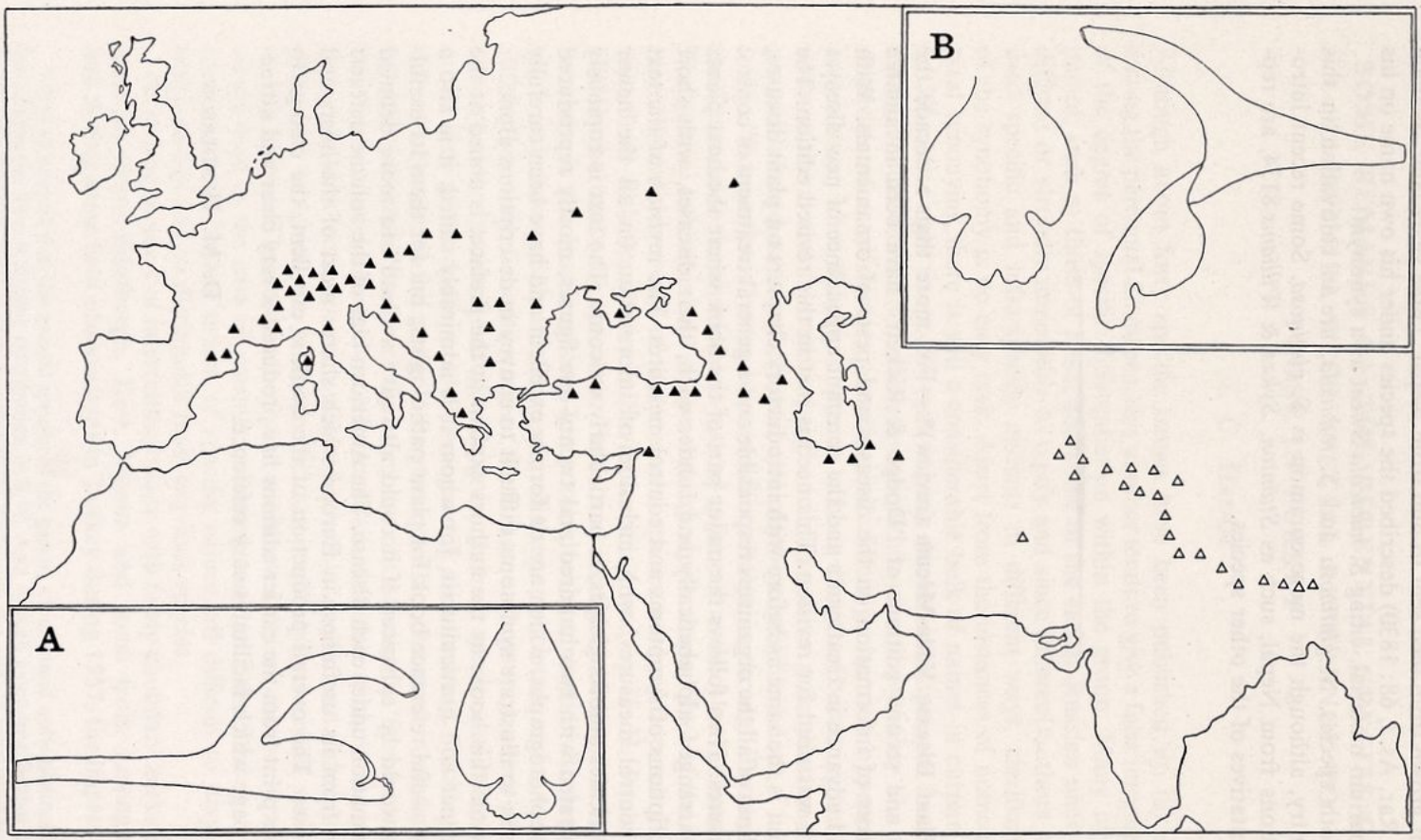
S. glutinosa is a stable species, varying remarkably little in its taxonomic features throughout its very considerable range. Likewise, it is uniform in regard to habitat—damp places in deciduous or evergreen forests, usually montane, up to c. 1600 m.

S. nubicola [Wall. ex] Sweet, British Flower Garden, ii, 140 (1825–27), holotype—icon. l.c.

Distribution: E. Afghanistan (Nuristan), Chitral, N.W. Frontier provinces, Baluchistan, Chamba, Kashmir (and extending across the frontier into Tibet), Nepal, Sikkim, Bhutan. Stibal (in Fedde, Rep. Sp. xxxix, 183: 1936) cites a list of exsiccatae under *S. glutinosa* Linn.

Contrasting with the stability of *S. glutinosa*, *S. nubicola* is a plastic species varying appreciably in leaf size, shape and texture, indumentum, corolla size and shape. It occurs in a great variety of habitats—dry stony slopes, woods, shrubby places and on the banks of waterways. In altitude it ranges from about 800 m. to about 2600 m.

The authority of *S. nubicola* is usually wrongly cited as Wallich. Although Wallich first used the name on a herbarium specimen, Sweet first validly published and described *S. nubicola* in 1827 on a cultivated



Distribution map of ▲ *Salvia glutinosa* L. and △ *Salvia nubicola* Sweet.
Inset A, corolla and labellum of *S. glutinosa*; inset B, corolla and labellum of *S. nubicola*. (N.B.—most of the east European records of *S. glutinosa* have been extracted from the literature.)

plant grown from seed sent to him from Nepal. Three years later, Wallich (Pl. Rar. As. i, 68: 1830) described the species under his own name on his herbarium material, citing *S. nubicola* Sweet as a synonym!

Both species, *S. glutinosa* and *S. nubicola*, are in cultivation in this country, although the more common is *S. glutinosa*. Some recent introductions from Nepal, such as *Stainton, Sykes & Williams* 8134, are representatives of the other species.

A Plant Disease Vade-Mecum (review)*.—For more than a decade the first and second editions of "Dodge & Rickett" have been invaluable sources of information on the diseases and pests of ornamentals. With rapid advance in treatments and the constant appearance of new diseases there was need for revision. This need is met in this revised edition. The layout is the same as before with introductory chapters on plant diseases, outlines of all the organisms responsible and a general treatment of control measures. Then follows the major part of the book where the host plants are arranged alphabetically and, under each, their diseases, with short descriptions of symptoms and control measures. The revision of the text on control measures, with inclusion of information on all the newer insecticides and fungicides, is particularly welcome. The text is copiously illustrated with two hundred and twenty-one figures, mostly reproduced from photographs, which are uniformly excellent and have been carefully chosen to illustrate symptoms difficult to convey in descriptions alone.

While this book, as the authors explain in the preface, is aimed at the gardener and horticulturist, for whom it is admirably suited, it is also a most useful reference book for plant pathologists; but for them its usefulness would be enhanced if it could also give a "lead" to more detailed information under each disease. The American bias of the volume detracts little from its usefulness in Europe which shares most of the hosts and diseases. The overall production of the book is excellent, the change to larger print from the earlier editions has produced a very clear and attractive page which facilitates easy reference.

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* Diseases and Pests of Ornamental Plants, by P. P. Pirone, B. O. Dodge & H. W. Rickett. 3rd edition. New York, Ronald Press Co. 1960. Pp. x + 775, 221 figures. Price: 10 dollars.