

## NOMENCLATORIAL NOTES ON *DIPSACUS FULLONUM* AND *DIPSACUS SATIVUS*<sup>1</sup>

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WHILE ONE OF US was preparing an account of the Dipsacaceae for a generic flora of the southeastern United States (Ferguson, Jour. Arnold Arb. 46: 226-231. 1965), it was found that the name *Dipsacus fullonum* had been and is still being used by a number of authors in different ways and that the combination *D. sativus* has been attributed to several different authors. It seems desirable to review these problems, in the hope of resolving the confusion surrounding the usage and typification of *D. fullonum* and the authority for the combination *D. sativus*.

### DIPSACUS FULLONUM

The name *Dipsacus fullonum* has been used in at least two ways. Some authors have applied the name to the wild teasel, which has erect receptacular bracts; the cultivated teasel, which has recurved receptacular bracts, is then referred to as *D. sativus*. Among the workers who have adopted this treatment are F. A. Scholler (Fl. Barbiensis 47. 1775), C. Schkuhr (Bot. Handb. 1: 67. 1791), N. E. Brown (English Botany, ed. 3. Supplement. 197, 198. 1892), E. de Halácsy (Consp. Fl. Graec. 1: 757. 1901), F. N. Williams (Prodr. Fl. Brit. 1: 201. 1903), E. G. Bobrov (Fl. URSS 24: 21-23. 1957), and, most recently, A. R. Clapham (in Clapham, Tutin, & Warburg, Fl. Brit. Isles, ed. 2. 797. 1962). Numerous other authors, including, it appears, all American workers, have applied the epithet "*fullonum*" to the cultivated teasel and the name *D. sylvestris* Hudson to the wild plant.

A number of authors have commented on the different usages of the name *Dipsacus fullonum*. Brown, Williams, and Bobrov (see references cited above) have each pointed out that the name has been misapplied, maintaining that Linnaeus intended the epithet "*fullonum*" to refer to the wild plant. Arthur Cronquist (in Hitchcock, Cronquist, Ownbey, & Thompson, Vasc. Pl. Pacif. NW. 4: 480, 481. 1959), although referring to the wild teasel as *D. fullonum* subsp. *sylvestris*, has observed that *D. fullonum* could be typified by the wild plant. He says, "The weight of historical practice, however, has been to accept the more logical, if perhaps less legally proper typification of Hudson, who in 1762 considered the two

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phases to represent different species and restricted the name *D. fullonum* L. to the cultivated plant with recurved receptacular bracts."

Pursuing still another course, H. Schinz & A. Thellung (Bull. Herb. Boiss. II. 7: 503. 1907) and R. Mansfeld (Repert. Sp. Nov. 47: 155. 1939) have rejected *Dipsacus fullonum* L. as a nomen ambiguum.

In *Species Plantarum* (1: 97. 1753), Linnaeus described *Dipsacus fullonum* as a wild plant with erect receptacular bracts and indicated a variety  $\beta$ , which appears to be the cultivated plant with hooked receptacular bracts:

1. DIPSACUS foliis sessilibus serratis. *fullonum.*  
*Dipsacus foliis connato-perfoliatis, Hort. ups. 25. aristis fructus rectis. Sauv. monsp. 156.*  
*Dipsacus capitulis florum conicis. Hort. cliff. 29. Gron. virg. 15. Roy. lugdb. 188. Dalib. paris. 44.*  
*Dipsacus sylvestris aut Virga Pastoris major. Bauh. pin. 385.*  
*Dipsacus sylvestris. Dod. pempt. 735.*  
 $\beta$ . *Dipsacus sativus. Bauh. pin. 385. aristis fructus hamatis. Sauv. monsp. 156.*  
*Habitat in Gallia, Anglia, Italia.  $\delta$*

All references under the first element clearly show that Linnaeus understood them to refer to the wild teasel with erect receptacular bracts, while those under the variety  $\beta$  indicate that he was referring to the cultivated plant with recurved receptacular bracts. The text of the second edition of *Species Plantarum* (1762) is unchanged, but in the appendix to that work (1763) Linnaeus formally named the variety *D. fullonum*  $\beta$  *sativus*.

The year before this, Hudson, in his *Flora Anglica* (49. 1762), segregated the wild plant, giving it a new name, *Dipsacus sylvestris*, applying *D. fullonum* to the cultivated teasel and citing *Species Plantarum* in the references under the latter species.

Most subsequent authors have recognized the wild teasel, with erect receptacular bracts, and the cultivated teasel, with recurved bracts, as distinct species or subspecies and have interpreted *D. fullonum* in either of two ways: (1) as represented by the specimen in the Linnaean Herbarium, which is the wild plant with erect receptacular bracts and which is labeled "*fullonum*" in Linnaeus' handwriting, or (2) by following Hudson's treatment and adopting the epithet "*fullonum*" for the cultivated plant with recurved receptacular bracts.

It may be contended that the epithet "*fullonum*" circumscribed the two entities that Linnaeus recognized in *Species Plantarum* and that Hudson's treatment effectively typified *Dipsacus fullonum*. In support of this view it may be argued, as Sprague has suggested, that Linnaeus intended the epithet "*fullonum*" to apply to the cultivated teasel because of the origin of the name. However, this argument does not seem to be of great importance, for many Linnaean names are inappropriate. On the other hand, Linnaeus himself appears to suggest in *Critica Botanica* (A.

Hort, The "Critica Botanica" of Linnaeus, English translation, 203. 1938), and Stearn in his introduction to the Ray Society facsimile of *Species Plantarum* (90, 93. 1957) has stated, that where a variety has been described within a species the typical element refers to the wild form, "the natural species," "natural form," "natural plant," or "normal form" of Linnaeus. This appears to be the usage that Linnaeus adopted in *Hortus Cliffortianus* (29, 30. 1737), where the first species described, *Dipsacus capitulis florum conicis*, consists of a typical element and three varieties ( $\alpha$ ,  $\beta$ ,  $\gamma$ ). The phrase name and synonymy of the typical element correspond to those of *D. fullonum* in *Species Plantarum*, and the phrase name and synonymy of var.  $\gamma$  correspond to var.  $\beta$  of *Species Plantarum*. At the end of the description is the observation, "Planta naturalis gaudet paleis calycinis, flosculos distinguentibus, fere erectis & mollibus; varietas autem ( $\beta$ ) paleis parum reflexis & rigidiusculis; haec autem ( $\gamma$ ) paleis apice reflexis, duris & hamatis; ista autem ( $\alpha$ ) foliis caulinis incisus a naturali differt planta."

It appears to be in agreement with Linnaeus' concept of species to regard the wild plant as the typical element of *Dipsacus fullonum*. This treatment also appears to be consistent with the International Code of Botanical Nomenclature (65. 1961): "In choosing a lectotype, any indication of intent by the author of a name should be given preference unless such indication is contrary to the protologue" and "If it can be shown that the element best fitting the protologue has been removed, it should be restored and treated as the lectotype." We are thus in agreement with those who apply the name *Dipsacus fullonum* to the wild teasel with erect receptacular bracts. In this circumstance Linnaeus' specimen of the wild teasel with erect receptacular bracts and labeled "*fullonum*" in Linnaeus' handwriting (Linnaean Herbarium, sheet 119.1) should be taken as the lectotype. The cultivated plant then bears the name *D. sativus*, if it is regarded as a distinct species.

#### DIPSACUS SATIVUS

Further confusion exists concerning the author responsible for the elevation of var. *sativus* to specific rank. A number of different authors, including F. A. Garsault (Fig. Pl. Anim. 2: tab. 249. 1764, and Traité Pl. Anim. 2: 160. 1767) have been credited with making the combination. Since Garsault did not consistently use binomials in these works, the combination can not be considered to have been published validly by him. The combination has also been erroneously attributed to F. A. Scholler (Fl. Barbiensis 47. 1775), who mentioned the name only incidentally under *Dipsacus fullonum*. Most authors have attributed the combination *D. sativus* to G. A. Honckeney (Vollst. Syst. Verz. Gewächse Teutschl. 1782). Jackson (Index Kewensis), Schinz & Thellung, and Mansfeld (see references cited under *D. fullonum*) cite p. 374 for the combination, while Bobrov (Flora URSS) gives p. 16. It has developed that Honckeney did indeed make the combination *D. sativus*

validly on page 374 of his very rare work of 1782,<sup>2</sup> although he later referred (Syn. Pl. Germania 2: 6.1792) to the cultivated teasel as *D. fullonum* and cited *D. sativus* C. Bauh. in synonymy, making no reference to his earlier work.

Several modern authors, including Clapham (*loc. cit.*) and Cronquist (*loc. cit.*) have treated the two elements of *D. fullonum* as subspecies. The correct subspecific combination *D. fullonum* L. subsp. *sativus* does not yet appear to have been published properly. Clapham cited Thellung as authority, but Thellung (Fl. Advent. Montpellier 490, 491, 680, 697, 1912) did not make this combination, although he suggested that *D. sativus* may perhaps be a subspecies of *D. fullonum* and included the epithet "*sativus*" in the index to his work at both specific and subspecific rank. Clapham can not be considered to have made a formal new combination either, for he does not cite the complete reference to the basionym as required by Art. 33, International Code of Botanical Nomenclature, 1961.

In conclusion, it appears that the nomenclature of these two species of *Dipsacus* may be summarized as follows:

***Dipsacus fullonum* Linnaeus, Sp. Pl. 1: 97. 1753.**

- D. sylvestris* Hudson, Fl. Anglica 49. 1762; Fernald, Gray's Man. Bot. ed. 8. 1347. 1950; Gleason, New Britton & Brown Illus. Fl. NE. U.S. 3: 309. 1951; Cronquist, Vasc. Pl. Pacif. NW. 4: 480. 1959.

***Dipsacus sativus* (L.) Honckeny, Vollst. Syst. Verz. Gewächse Teutschl. 1: 374. 1782.**

- D. fullonum*  $\beta$  Linnaeus, Sp. Pl. 1: 97. 1753.  
*D. fullonum*  $\beta$  *sativus* Linnaeus, Sp. Pl. ed. 2. 2: 1677. 1763.  
*D. fullonum*, sensu Hudson, Fl. Anglica 49. 1762, and many other authors, including all American workers.

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In an earlier paper (Ferguson, Jour. Arnold Arb. 46: 229. 1965) C. Schkuhr (Bot. Handb. 1: 67. 1791) is incorrectly cited as the authority for the combination *Dipsacus sativus*, for at that time the synonymy in Honckeny's work of 1792 suggested that he had not made the combination earlier.