

NEW PLANTS FROM THE NEARER EAST.

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I. SONCHUS

A remarkable woody *Sonchus*, apparently endemic to cliffs in the Judean Desert and Moab, appears to have eluded the earlier botanists. The species now described is an exceptionally interesting one, not only ecologically but also in its habit and taxonomy, presumably constituting a link between *Lactuca* and *Sonchus*.

The dividing line between these two genera is a difficult one to draw, the beaked nature of the achene in *Lactuca* having several exceptions in the Near East. G. Ledyard Stebbins, Jr., in "Critical Notes on *Lactuca* and Related Genera" (Journ. Bot. 1937, p. 12), states of *Lactuca* that "the achene is definitely flattened, and has two strong lateral ribs or wings, with a varying number of lesser ribs on each face. Whether beaked or not, moreover, it possesses a strongly expanded pappus disk." The achenes of *Sonchus*, on the other hand, "are flattened or four-sided, as are those of *Lactuca*, but lack the expanded pappus disk."

Despite its unusual habit and shortly attenuated achenes (reminiscent of some *Lactuca*), we have decided to place our plant in *Sonchus* owing to the absence of an expanded disk. It should be noted that *S. pustulatus* Willk. [*S. tenerrimus* L. ssp. *pustulatus* (Willk.) Bat.] and the microspecies *S. diana* Lacaita are somewhat suffrutescens chasmophytes from N. Africa and Spain. These have truncated achenes of typical *Sonchus* shape, but they possess several vegetative characters (such as the wool in the axils of the leaves) which are found also in our plant. In its woody habit, and even in the form of its leaves, *S. pinnatifidus* Cavanilles, from the rocks of S.W. Morocco and the Canaries, shows some resemblance to the plant here described, and confirms our view that the new species is better placed in *Sonchus* than in *Lactuca*. It must, however, be considered a very isolated type, and, though its nearest affinity may be with the *S. tenerrimus* L. group, it seems advisable for the present not to relate it to any species previously described.

Sonchus suberosus Zohary et Davis sp. nov.

Species insignis, saxatilis, suffrutescens. Probabiliter inter *Sonchum* et *Lactucam* species intermedia est.

Planta suffruticosa, a basi lignosa, foetida. *Caulis* lactifer, inaequaliter ramosus, usque 40 cm. altus et 2 cm. crassus, valde suberosus; suber longitudinaliter fissum. *Rami* hornotini, 30–70 cm. longi, 2–7 mm. crassi, teretes, eburneo-albi, lucentes. *Folia* oblonga, runcinato-pinnatifida, 5–10 cm. longa (inferiora saepe longiora), glabra, 6–12-lobata; lobi laterales ovato-oblongi vel lanceolati, irregulariter dentati, terminalis latior, ovato-triangularis. *Folia* vernalia alterna, remota, petiolata, petiolo basi dilatato vaginato et semiamplexicauli; folia autumnalia 5–7 fasciculata in axillis foliorum vernalium lanigeris disposita. *Cymae* paniculatae, ex axillis foliorum vernalium enatae; interdum inflorescentia ad capitulum unicum reducta. *Pedunculi* ± elongati, superne foliolis remotis minutis lineari-lanceolatis praediti.

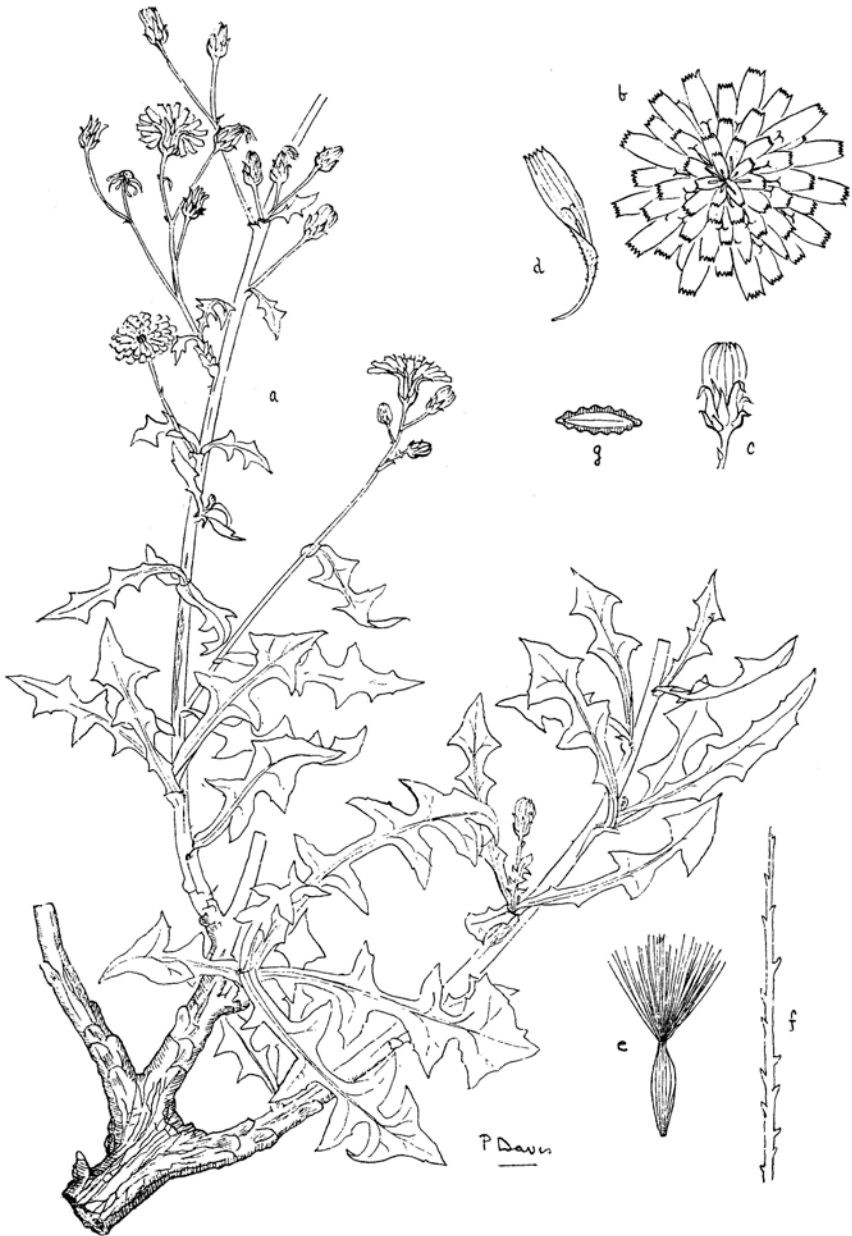


FIG. 1.—*Sonchus suberosus* Zohary et Davis sp. nov. a, general habit of the plant ($\times \frac{1}{2}$); b, c, capitulum (nat. size); d, floret ($\times 2$); e, achene ($\times 3\frac{1}{2}$); f, single hair of pappus (much enlarged); g, cross section of achene ($\times 12$).

Capitula multiflora, 2-3 cm. diametro. *Flosculi* lutei, inferne hirsuti. *Involucrum* ± campanulatum, ca. 10 mm. longum et 5-6 mm. basi latum; phylla exteriora ad quadrantem vel ad duas partes longitudinis phyllorum interiorum, interiora superne minute ciliata, obtusa, apice recurva. *Receptaculum* nudum. *Achaenia* glabra, conformia, elliptica, ± compressa, 4 mm. longa, vix 1 mm. lata, fusca, ca. 12-striata, 3-4-costata, transverse vix rugosa, apice breviter attenuata, erostrata, disco haud expanso. *Pappus* albus, deciduus, achaenio aequilongus vel parum longior; setae conformes, tenues, flexuosae, sub lente setoso-denticulatae. Floret Oct.-Febr.

PALESTINE. Judean Desert: Wadi Qelt cliffs, 1931, 1932, *Eig*; ibidem, 1941, *Daniel Zohary*; Wadi Haritun, S.E. of Bethlehem, 1942, *Davis et Kushnir* (type); Jebel Qarantal cliffs, 1942, *Davis*.

TRANSJORDAN. Moab: Wadi Zerka Ma'in, 1945, *Davis*; Wadi Heidan cliffs, 1945, *Davis*.

Type in Herb. Hebr. Univers., Jerusalem. Co-types in Herb. Kew.

Sonchus suberosus is woody at the base (more so than *S. pustulatus* Willk.) the wood being covered by an elastic corky substance. In the early spring new stems, bearing alternate leaves only, grow up from the base, but at the approach of summer these shed their leaves and the plant looks dead throughout the dry season. In the early autumn clusters of leaves and inflorescences develop in the axils of the dead foliage. The large flowers continue to bloom throughout the winter. After seeding, these branches die back towards the base and only their lower parts become woody, from which arise new branches the following season.

The plant occurs chiefly in the Irano-Turanian territory of the Judean Desert and Moab, where it is confined to cliffs, generally of hard Cenomanian limestone and preferably in complete shade; it ranges from sea-level to about 650 m.

In Wadi Haritun (Judea) *Sonchus suberosus* is locally co-dominant in small vertical cracks and holes with *Podonosma syriaca* and *Centaurea eryngioides*; while in Wadi Qelt it is found only in the narrowest parts of the chasm, where it grows with *Podonosma* and *Capparis aegyptiaca*. On the even drier rocks of Jebel Qarantal it is found in the same association, but is not as luxuriant as on the cooler rocks of Wadi Haritun. It is particularly abundant in Wadi Zerka Ma'in (Moab), especially in association with *Podonosma* on the hard limestone, but also occurs there on local intrusions of Quaternary basalt with *Euphorbia thamnoides*.

Our plant may be considered a "rigid" Tertiary relict.

2. FERULA

The genus *Ferula* is one of those plant groups abundantly represented both in the Mediterranean and the Irano-Turanian countries of the Nearer East. There is, however, no doubt that the Irano-Turanian region constitutes the main and primary centre of this genus, and that the Mediterranean species are to be referred both genetically and historically to Irano-Turanian stock. Similar phytogeographical relations have been found for a series of Mediterraneo-Irano-Turanian genera or subgeneric groups such as *Dianthus*, *Phlomis*, *Verbascum*, and