

## TWO NEW SPECIES OF *POTENTILLA* L. (*ROSACEAE*) FROM SW TURKEY

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Two new species of *Potentilla* L. (*Rosaceae*) from SW Anatolia are described and illustrated: *Potentilla nerimaniae* H. Duman and *P. davisii* R.R. Mill & H. Duman.

*Keywords.* New species, *Potentilla*, *Rosaceae*, Turkey.

### INTRODUCTION

Since *Potentilla* L. was revised by Hasan Peşmen for the *Flora of Turkey* (Peşmen, 1972), four new species and two subspecies have been described from Turkey: *P. aladaghensis* Leblebici, *P. buchneri* Kit Tan & Sorger, *P. tauricola* Peşmen, *P. pulvinaris* Fenzl subsp. *argentea* Hartvig & Strid, *P. carduchorum* Soják and *P. umbrosa* Stev. ex Bieb. subsp. *decrescens* Soják (Davis *et al.*, 1988; Soják, 1991). In this paper, *P. nerimaniae* and *P. davisii* are described as new species; these bringing the total number of *Potentilla* species known from Turkey to 59.

#### ***Potentilla nerimaniae* H. Duman, sp. nov. Figs 1, 3.**

[subgen. *Fragariastrum* (Heister ex Fabr.) Rchb. sect. *Crassinerviae* (Th. Wolf) Juz.] Affinis *P. libanoticae* Boiss. sed floribus longipedicellatis (pedicello 10–30mm), non breviter pedicellatis (pedicello usque 10mm longo), acheniis et stylis glabris (haud pubescentibus) et filamentis in partibus  $\frac{2}{3}$  inferioribus pilosis (non glabris) differt. Type: Turkey C2 Antalya; Elmali, Çıglikara, 1900–1950m, on calcareous rocks, 1 viii 1995, H. Duman, M. Ekici & A. Duran [*Duman* 5978] (holo. GAZI; iso. E, ISTE, HUB, ANK), Turkey: C2 Burdur, Dirmil, Maşda to Ören, 1350m, on calcareous rocks, 8 vi 1996, H. Duman, N. & E. Özhatay (ISTE 72297).

Perennial with brownish woody caudex. Flowering stems decumbent to ascending or rarely erect, 5–15cm, villous with long eglandular and short glandular hairs. Leaves trifoliolate; petiole thin, 1–7cm, villous with dense long eglandular and short glandular hairs; leaflets broadly obovate, (7–)10–25 × (6–)10–20mm, cuneate at base, incised-serrate at apex or down to base, green, adpressed pilose and with scattered sessile glands on both surfaces. Inflorescence loose, terminal, cymose; pedicels 10–30mm, pilose with long spreading eglandular and short glandular hairs. Calyx pilose with glandular and eglandular hairs. Epicalyx segments linear-lanceolate, shorter than or as long as the sepals, 2–4mm, acute. Sepals ovate-lanceolate, 3–4mm, acute to acuminate. Petals white, obovate, 5–5.5mm, obtuse or shallowly retuse at

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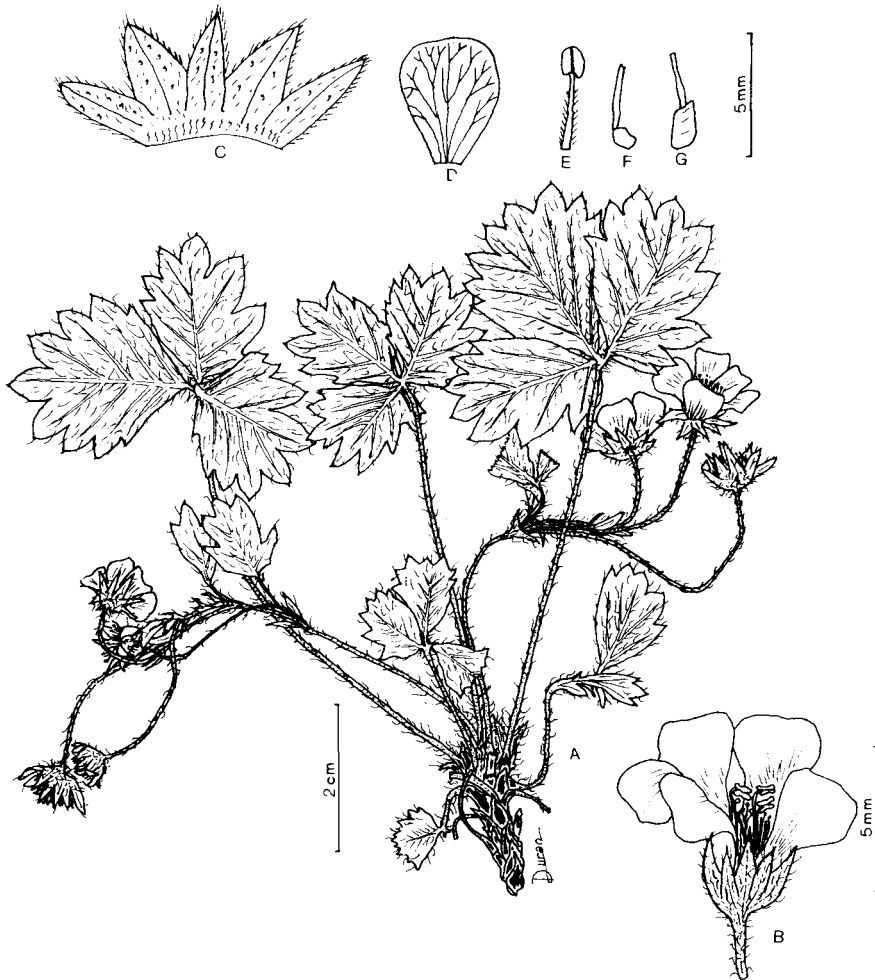


FIG. 1. *Potentilla nerimaniae* H. Duman: A, habit; B, flower; C, dissected calyx; D, petal; E, stamen; F, ovary; G, achene. Drawn by A. Duran.

apex, longer than the sepals. *Filaments* pilose in lower  $\frac{2}{3}$  or up to anthers. Ovary glabrous. Achenes 1.5–2mm, glabrous, cylindrical-oblong, smooth; style subterminal, filiform, longer than achene, 2–3mm, glabrous. *Fl.* 6–8.

South Anatolia. Endemic. East Mediterranean element. *Potentilla nerimaniae* occurs on calcareous rocks in Çıglikara (Elmalı-Antalya) and Maşda Dağ. This plant grows with *Campanula fruticulosa* (O. Schwarz & P.H. Davis) Damboldt, *Amphoricarpus exsul* O. Schwarz, *Globularia dumulosa* O. Schwarz, *Micromeria cristata* (Hampe) Griseb. subsp. *xylorrhiza* (Boiss. & Heldr.) P.H. Davis, *Helichrysum compactum* Boiss. and *Campanula yaltirikii* H. Duman (see Duman, 1999). All these species are very rare and endemic to SW Anatolia.

*Recommended IUCN Threat Category Listing.* Endangered (EN).

*P. nerimaniae* is similar to *P. libanotica* which is distributed in S Turkey (C5 and C6: İçel, Adana, Hatay) and Lebanon, but differs from the latter species in its loose inflorescences with long pedicels (10–30mm long), glabrous achenes and style and filaments that are pilose not glabrous in the lower  $\frac{2}{3}$ .

This new species is named in honour of Prof. Dr Neriman Özhatay, pharmacologist and plant taxonomist at Istanbul University, Pharmacy Faculty, Istanbul.

**Potentilla davisii** R. R. Mill & H. Duman, **sp. nov.** **Figs 2, 3.**

[subgen. *Fragariastrum* (Heister ex Fabr.) Rechb. sect. *Crassinerviae* (Th. Wolf) Juz.] Affinis *P. nerimaniae* Duman (vide supra) sed ovario et achenio pubescenti (non glabro), achenio scrobiculato-reticulato (haud levi) differt. A *P. libanotica* Boiss. floribus longipedicellatis (pedicello 10–30mm longo), filamentis in partibus  $\frac{2}{3}$  inferioribus pilosis (non glabris) recedit.

Type: Turkey C2 Denizli; Acipayam, Bozdağ, Olukbaşı village, above Geyran Yayla, 1450m, rocks, 4 viii 1997, *Z. Aytaç* 7648 (holo. GAZI; iso. E, HUB, ANK), Turkey: C2 Denizli; Bozdağ, above Geyran Yayla, 5000–5500 ft, rocks, 16 vii 1947, *P.H. Davis* 13435 (para. E, K).

Perennial with brownish woody caudex. *Flowering stems* 5–12cm, villous with long eglandular and short glandular hairs. *Leaves* trifoliolate; petioles to 10cm, villous with long eglandular and short glandular hairs; leaflets broadly obovate, 15–30 × 12–20mm, cuneate at base, incised-serrate at apex, adpressed to spreading eglandular pilose and with scattered subsessile glands on both surfaces. *Inflorescence* loose, terminal, cymose; pedicels 10–30mm, spreading long eglandular pilose and with sessile glands. *Calyx* spreading pilose and with sessile glands. *Epicalyx segments* linear-lanceolate, 5–10mm, acute. *Sepals* ovate-lanceolate, 5–10mm, acuminate. *Petals* white, obovate to orbicular, 6–10mm, obtuse, longer than the sepals. *Filaments* pilose in lower  $\frac{2}{3}$ . *Ovary* pubescent. *Achenes* pubescent at dorsal surfaces and apex, scrobiculate-reticulate, orbicular to cylindrical; *style* glabrous, longer than achene, c.3mm. *Fl. and Fr.* 7–8.

South Anatolia. Endemic. East Mediterranean element.

*Recommended IUCN Threat Category Listing.* Endangered (EN).

This species is similar to *P. nerimaniae* H. Duman, but *P. davisii* differs in having a pubescent ovary and achenes, and scrobiculate-reticulate achenes. *P. davisii* is also similar to *P. libanotica*, but differs from the latter in its loose inflorescences with long pedicels (10–30mm long) and filaments that are pilose not glabrous in the lower  $\frac{2}{3}$ .

It gives us great pleasure to name this new species after Prof. P.H. Davis, instigator of *Flora of Turkey* (on which project one of us, R.R. Mill, collaborated between 1976 and 1988) and who continually encouraged many young Turkish botanists.

There is no evidence (such as a *determinativit* slip) to indicate that Hasan Peşmen



FIG. 2. *Potentilla davisii* R.R. Mill & H. Duman: A, habit; B, dissected calyx; C, petal; D, stamen; E, ovary; F, achene. Drawn by F. Özkaya.

saw *Davis* 13435 (the cited paratype of *P. davisii*) in the course of his revisionary work for *Flora of Turkey* volume 4. However, the field label on the specimen bears the indication 'sp. nov.' in pencil in a handwriting other than that of Peter Davis. The specimen was also recognised as distinct from *P. libanotica* as long ago as 1955, when Norman Robson studied it as part of an exercise for the Taxonomy Diploma Course and constructed a key to species, which is at present laid inside a type cover with *Davis* 13435 and another specimen (*Davis* 13334; see below). In this key, Robson separated *Davis* 13435 from *P. libanotica* by its 'filaments densely hairy up to the middle; styles glabrous', as opposed to 'filaments glabrous; styles sparsely hairy', but did not give it a name.

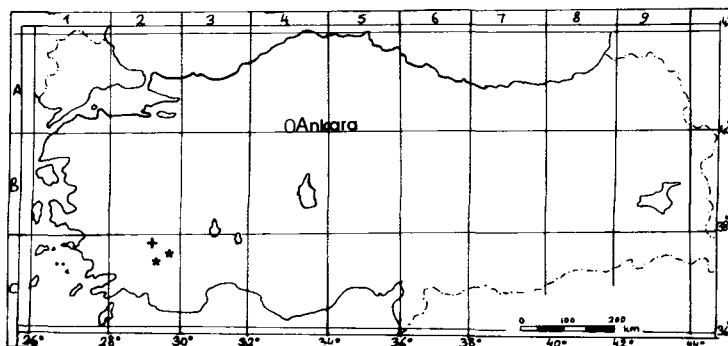


FIG. 3. Distribution of *Potentilla nerimaniae* (\*) and *Potentilla davisii* (+).

Another specimen from the same locality (C2 Denizli: Bozdağ near Geyran Yayla, 4500ft [1371m], rocks, 16 vii 1947, *Davis* 13334, E, laid in together with *Davis* 13435 in the same type cover) agrees with *P. davisii* in having hairy filaments, but the styles are also sparsely hairy (not glabrous as in *P. davisii*). The leaves are similar to those of *P. davisii* but are even more sericeous beneath. This specimen is also noted as being a 'sp. nov.' in pencil on the field label but it does not seem to have been separately keyed out by Robson in 1955 and we also reserve judgement on its status until better material is collected to supplement *Davis* 13334, which is a rather poor specimen as regards floral and fruit characters.

Both these new species belong to *Potentilla* subgen. *Fragariastrum* (Heister ex Fabr.) Rechb. sect. *Crassinerviae* (Th. Wolf) Juz. In *Flora of Turkey* volume 4, they both key out in Group D, as far as couplet 6 which there discriminates between *P. elatior* (NE Anatolia; with serrate leaves and the achenes and style both glabrous) from *P. libanotica* and *P. isaurica* (P.H. Davis) B. Pawł. (which are from S & SW Anatolia and have crenate-serrate leaves, and achenes and style both pubescent). A supplementary key, where the first lead is a modified version of lead 6 of Group D, is given below which distinguishes the two new species from each other and from these three other species of Subgen. *Fragariastrum*.

#### Key to species

- 1a. Leaflets serrate, teeth acuminate to cuspidate; achenes and style both glabrous (NE Anatolia) \_\_\_\_\_ **P. elatior**
- 1b. Leaflets crenate-serrate or incised-serrate, teeth rounded to acute; achenes and style various (S & SW Anatolia) \_\_\_\_\_ 2
- 2a. Petals elliptic, acute at apex \_\_\_\_\_ **P. isaurica**
- 2b. Petals obovate, ovate or orbicular, rounded obtuse or retuse at apex \_\_\_\_\_ 3

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- 3a. Pedicels short (up to 10mm); achenes and style both pubescent; filaments glabrous \_\_\_\_\_ **P. libanotica**
- 3b. Pedicels long (10–30mm); style glabrous but achenes either glabrous or pubescent; filaments pilose, at least in lower  $\frac{2}{3}$  \_\_\_\_\_ 4
- 4a. Achenes glabrous, smooth; ovary glabrous; epicalyx segments 2–4mm; sepals 3–4mm; petals 5–5.5mm \_\_\_\_\_ **P. nerimaniae**
- 4b. Achenes pubescent dorsally and apically, scrobiculate-reticulate; ovary pubescent; epicalyx segments 5–10mm; sepals 5–10mm; petals 6–10mm \_\_\_\_\_ **P. davisii**
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