

THE «POTENTILLA Verna» GROUP  
IN N. E. SPAIN

*by*

**P. MONTSERRAT**



*SEPARATA DO*  
**BOLETIM DA SOCIEDADE BROTERIANA**  
Vol. XLVII (2.ª série) — SUPLEMENTO

ABRIL

**1974**

THE «POTENTILLA Verna» GROUP  
IN N.E. SPAIN

by

P. MONTSERRAT

Centro pirenaico de Biología experimental. Apartado 64,  
Jaca (Huesca), Spain

THE systematics of the *P. verna* polyploid complex is very difficult in the Ebro Valley, with a gradual transition to *P. latestipula* Br. Bl. (*P. gr. crantzii*) and to other species, «pillars» essential to an understanding of the history (evolution) of this group.

In our Hb. JACA we have many sheets from the N. E. Spain, with morphological and ecological variation. Prior to undertaking cytogenetic and experimental taxonomic work it is virtually impossible to have an idea of the systematics, but there are some taxa in «Sierra de Guara» meriting a description now.

***P. scoparioides* sp. nova (olim, in schoedis, *P. opacoides*)**

Densissime ramosa et hirsuta cum ramis stoloniformibus 4-10 (-15) cm longis, foliis (3-) 5 (-7) foliolatis, phyllis oboblongis (15-) 18-26 × 6-11 mm, profunde dentato-crenatis (crenas angustas 2-4 × 1,1-1,3 mm).

Stipulis ramulorum cum parte libera anguste lineata (6-) 8-9 (-11) × 0,4-0,6 mm, in siccitate castaneo-rufescentibus et sordide albo-hirsutis. Ramis fertilibus lateralibus subflexuosis foliis brevioribus vel vix superantibus, cum stipulis minoribus et auriculis petiolo adnatis (saltem superioribus) et parte libera latiora (× 0,8-1,5 mm) lanceolato-triangulare et subobtusa. Pilositate setosa albescente (2-4 mm longa) et patentissima, ab initio in petiolibus erecto-patente demum subreflexa et intricata (a tuberculo basale prodeunte),

cum glandulis rarioribus minutissimis (usque 0,1 mm) et pilis ± crispatis, praecipue in inflorescentiam, permixtis.

Pedicello filiforme et curvato 2-3 (-4) cm longo. Petalis 7-8 mm longis, obovatis et apice levissime emarginato; sepalis 6-7 mm lanceolato-ovatis et acuminato acutiusculis, epicalycis segmenta minora (4-6 mm) et angustiora (ca. 1 mm), cum pilositate setosa basi tuberculata etiam pilis intricatis breviores et glandulis incoloribus minutissimis munita. Parte inferiore calycis cum tuberculis maioribus sed vix rufescentibus.

Stylo levissime obconico cum base conico-strangulata apiceque abrupte dilatato. Antheris 0,8-1 × 0,5-0,6 mm. Aqueo stramineo (1,8 mm) laevigato vel in maturitate levissime concentrice-striato.

Habitat locis calidis, loco dicto «Gargantas de Fabana», 950 m, die 13 junio 1967 legebam (P. MONTSERRAT-3293/67, JACA. 736-TYPUS).

It grows in very dry grassland (exploited community) from 900 to 1700 m, with *Buxus sempervirens* («garide») under conditions of heavy solifluxion, like *Festuca scoparia*.

Easily separated from *P. tabernaemontani* by the tuberculate-hairy calyx and the very small glands, the long stolons covered by soil movement, and the stiff, white hairs on shoots and young leaves. It is quite different from *P. heptaphylla* L. (*P. opaca* L.) by the style, 5 (rrr 7) folioles, dense vegetative shoots and few short hairs mainly near the flowers and on the margins of the folioles. It differs also very much from the two following species.

#### *P. mascunii* sp. nova (olim, in schoedis, *P. oscensis*)

Ex affinitate *P. latestipula* Br. Bl. pyrenaica sed a permixtione ramulos sterilibus rosulatis stoloniferisque et stipulis angustioribus differt. Foliis quinque-foliolatis vel frequentissime trifoliatis et foliolis petiolulatis (petiolulo 1-3 mm longo). Ramos fertiles duplo vel triplo sterilibus longiores, tenuissimis, flexuosis, cum 2-3 (-5) floribus nuntantibus in pedunculis capillaribus.

Pilositate longa (2-3 mm) et sericea in petiolibus patentissima sed in una et altera facie foliolorum applicata, cum pilis crispatis paucis et pilis minimis glandulosis vestita. Caules fertiles cum pilositate sericea applicato-intricata et alia sericeo patentissima brevioraque (1-1,2 mm) pilositate petiolarum.

Base calycis verruculosa (verrucis rufis 0,2-0,4 mm longis) et piliferis; laciniis calycinalibus minus pilosis et lanceolato obtuse-acuminatis. Phylis exterioribus brevioribus, obtusiusculis angustioribusque.

Planta rupicola («Adianthetea») intra speluncam magnam «Barranco de Mascún» pr. Rodellar (Huesca), 760 m supra mare, 10 maio 1967 (cum flore et fructo) lecta (P. MONTSERRAT-2821/67, JACA. 745-TYPUS).

That is a very interesting plant from the complex *P. tabernaemontani-latestipula* group in the South Pyrenees, and a possible diploid («pillar»). The «Barranco de Mascún» is full of epibiotics (endemic relictus) like *Petrocoptis guarensis* Fernández Casas \* (new species in press), *Valeriana longiflora* ssp. *pauí* (F. Cámara) P. Monts. \*\*, *Globularia repens* ssp. *oscensis* (Coincy) \*\*\* and the following species, *P. guarensis*.

*Chaenorhinum gr. origanifolium* and particularly *Arabis serpyllifolia* are growing together with *P. mascunii* on pulverulent tufa at the bottom of a big cave moistened by continuous dripping of calcareous water. In the driest West Pyrenees (Magdalena-Bisaurín, Forca-Alanos) *A. serpyllifolia* prefers limestone rocks submitted to a strong dry wind (1800-2200 m) as does *Globularia repens* subsp. *repens*.

#### *P. guarensis* sp. nova

Ex affinitate *P. tabernaemontani* sed longe stolonifera (4-12 cm), cum folia crassiuscula subdistica, pagina inferiore glaucescente, infima minuta trifoliata et reliqua 5-palmato-foliolata, difert. Stipulis foliorum caulinaribus latioribus ad petiolum adnatis (inferioribus vero, cum petiolo libero breve, 1-3 mm). Tota planta cum pilositate longa et flexuosa (sericea) patentissima (paginis foliarum exceptis), in caule

fructifero reflexa et a tuberculo purpurascente producta.  
Laciniis calycinalibus late ovatis obtusisque, exterioribus  
apice rotundato minoribus et sepissime reflexis.

Caule 1-2 florō, debile (6-8 cm), pedicelo (20-30 × 0,3-0,4 mm) frequentissime geminato, cum duabus foliis geminatis, una minuta in pedicelo uno et duis bracteolis in altero.

Stylo (1-2-1,4 mm) persistente, filiforme, cum base strangulata et apice in stigma plus minusve trifido dilatato. Aquenio stramineo leviter albidiscente-striato (concentrico subruguloso) apiceque obtusissime apiculato ( $1,9 \times 1,1$ - $1,2$  mm). Receptaculo valde piloso et pilis longis supra funiculo aqueniorum frequentissime exhibens. Crenis foliorum longis et obtusis sed a base dimidio usque foliolorum integris et cuneatis. A glandulis minutissimis, rarioribus quam in especie precedente, vestita.

Rupicola, ex vicinitate spelunca magna «Barranco de Mascún» prope Rodellar (Huesca), 760 m supra mare, fructificata 10 maio 1967 lecta (P. MONTSERRAT-2821 bis/67, JACAR 744-TYPUS).

This plant grows very near *P. mascunii* but outside the cave, with *Valeriana longiflora* \*\*, *Globularia repens* ssp. *oscensis* \*\*\*, *Fumana ericoides*, *Thymus vulgaris*, *Rhamnus saxatilis*, *R. alaternus*, *Ononis minutissima*, *Brachypodium ramosum* and *Carex halleriana*.

The shape of calyx, particularly the reflexed epicalyx segments (rounded at apex), the red-purple tubercles, discolored leaves (dark green above, glaucous-green beneath with prominent red veins), poor inflorescences (1-2 flowers only), stipules more adnate and distic leaves on long stolons, are typical of *P. guarensis*. On the other hand, *P. mascunii* has longer and more-flowered stems, shorter lateral branches (rosette) and very characteristic calyx-segments.

I emphasize sharply the distinction between these new species, particularly *P. mascunii* and *P. guarensis*; the first, I think, is very important for understanding the origin of *P. latestipula* Br. Bl. and the second for founding ancestors of *P. scoparioides* (suspected allopolyploid). Field evidence supports the idea of two diploid relict species, and we need carvo-

logical studies together with experimental taxonomy to understand the *P. tabernaemontani* polyploid complex in N. and N. E. Spain.

### **Proposed key**

After *Flora Europaea* 2: 38, it is possible to adapt the *Potentilla* key:

- 76 Stipules of basal leaves linear to linear-triangular

76a Calyx inconspicuously tuberculate . . . . . 49 *tabernaemontani*

76a Calyx with ± red tubercles; inflorescence with minute glands

76b Dense mat-forming; leaflets 5(-7) densely stiff-hairy and deeply dentate nearly all round (8-13 teeth) . . . . . 49a *scoparioides*

76b Not mat-forming; leaflets (3)5, 3-7 dentate in apical half. Stipules ± adnate to petiole

76c Flowering stem 2-3 times as long as sterile rosette and with 3-5 flowers on nutant pedicels; leaflets petiolulate 1-3 mm. Sepals obtusely acuminate. Plant of calcareous tufa in humid caves . . . . . 49b *mascunii*

76c Flowering stem shorter than the stoloniferous and with 1-2 flowers on erect pedicels; leaflets not petiolulate. Sepals broadly ovate, the epicalyx-segments rounded at apex, deflexed when mature . . . . . 49c *guarensis*

76 Stipules of basal leaves lanceolate to ovate

\* *Petrocoptis guarensis* Fz. Casas (1973). *Cuadernos de Ciencias Biológicas* 2 (1): 43-44, lam. 1. Fac. Ciencias, Granada.

\*\* *Valeriana longiflora* Willk. var. *pauí* F. Cámara Niño (1940). *Estudios sobre Flora de la Rioja Baja*. Fac. Ciencias, Univ. de Madrid, p. 163, fig. 47. Madrid.

\*\*\* *Globularia oscensis* Coincy. *Ecloga* pl. 3, fig. 10.

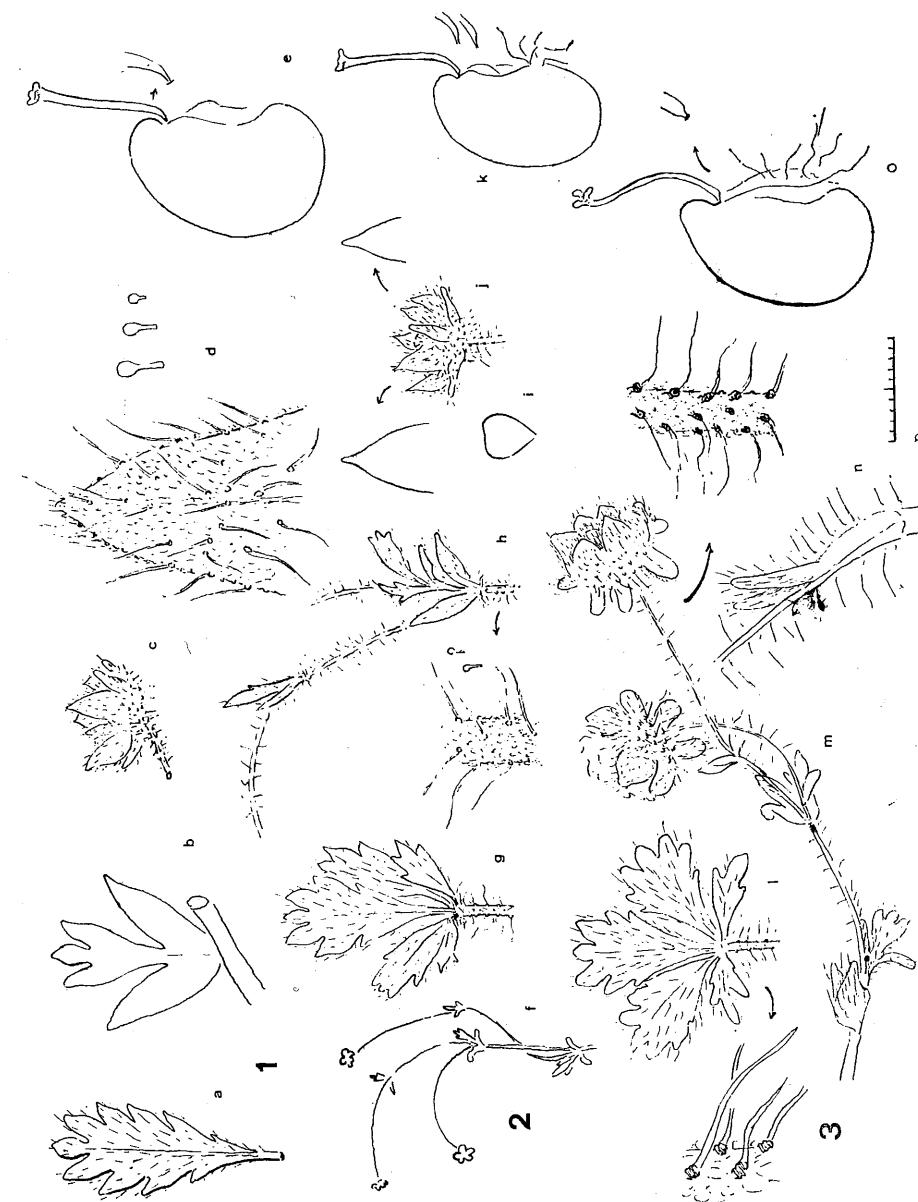


Fig. 1.—*P. scoparioides*: a) central foliole, b) cauline leaf, c) calyx, d) sepal and glands (magnified), e) achene.

Fig. 2.—*P. masenii*: f) inflorescence, g) rosette leaf, h) cauline leaf, i) petal,

j) calyx (with enlarged sepal), k) achene.

Fig. 3.—*P. guerrensis*: l) stolon-leaf and tubercles (magnified), m) inflorescence, n) stipule of stolon-leaf, o) achene.

p) millimeters for a), c), g), h), i), j), k), l), m) and o).