Phytotaxa 33: 41–45 (2011)
www.mapress.com/phytotaxa/

Article

ISSN 1179-3155 (print edition)
PHYTOTAXA
ISSN 1179-3163 (online edition)

A new species of *Oxalis* section *Palmatifoliae* (Oxalidaceae) from southern Argentina

ALICIA LÓPEZ[1, 2] & MARÍA EMA MÚLGURA[1]

[1] *Instituto de Botánica Darwinion (CONICET- ANCEFN), Labardén 200, CC 22, B1642HYD, San Isidro, Buenos Aires, Argentina;*
[2] *Correspondence: e-mail: alopez@darwin.edu.ar*

Abstract

A new species of *Oxalis* from Santa Cruz, Argentina is described. The new species, *Oxalis morronei*, belongs to *O.* section *Palmatifoliae* because of its general morphology and distribution, but differs from the other species included in that section by having square leaflets with the apices deeply emarginate, the bases slightly cordate and its margin wavy and ciliate. The new species is illustrated and affinities with other members of *O.* section *Palmatifoliae* are herein explained.

Introduction

Oxalis L. is a cosmopolitan genus that is comprised of approximately 700 species worldwide, but most species are found in three principal centers. In South America the genus presents the greatest morphological variation and the highest number of taxa (ca 250 spp.). The great variation in life-form shows that *Oxalis* has adapted to almost every environment (Knuth 1930, Macbride 1949, Lourteig 1982, 1983, 1988, 1994, 2000).

Species of *Oxalis* are highly variable in their vegetative characters. They can be annual or perennial herbs, or, rarely, subshrubs or trees, and often have subterranean structures such as rhizomes, corms, tubers, tuberous roots or true bulbs (Salter 1944). Leaves are alternate and trifoliolate or multifoliolate, and leaflets are entire to obcordately bilobed, sometimes bifurcate. In spite of their vegetative diversity, the species display a limited variability in flower morphology, with flowers that are uniformly actinomorphic, funnel-shaped and pentamerous (Cronquist 1981).

During a recent exploration in Austral Patagonia, Argentina, we found a species of *Oxalis* with characteristics distinct from those known so far for the genus. This species, proposed and described here as new to science, is placed in *O.* section *Palmatifoliae* because it has a subterranean rhizome composed of storage scale leaves, numerous leaflets, and pink to violet solitary flowers. It differs from other species in this section by its quadrangulate deeply incised leaflets. Distinctive characteristics and their affinities with other members of the section are discussed.

Oxalis morronei Alicia López & Múlgura, *sp. nov.*, Fig. 1 A–K

Ad Oxalidem squamoso-radicosam affinis, sed foliolis quadratis apice emarginato et margine pilosulo et undulato differt.

Type:—ARGENTINA. Santa Cruz: Dpto. Lago Buenos Aires. Ruta Provincial 41, camino de Los Antiguos a Paso Río Roballos, 47º57´49´´S, 71º50´10´´W, 1,247 m, 9 January 2011. *L. Zavala, D. Degenaro, C. Guerreiro, A. López & H. Illarraga 204* (holotype SI!).

Accepted by M. Christenhusz: 9 Nov. 2011; published: 28 Nov. 2011

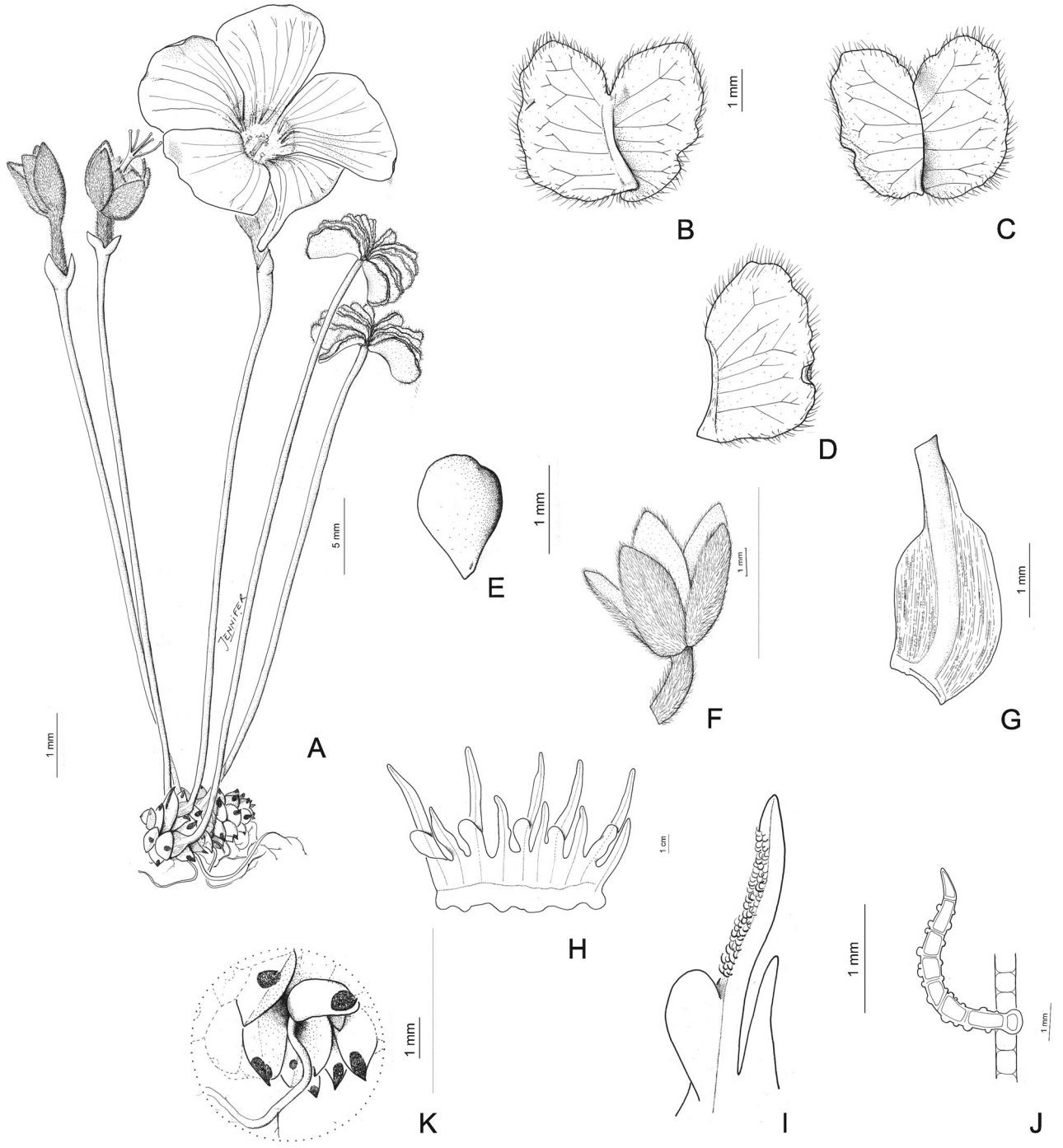

FIGURE 1. *Oxalis morronei*. A. General aspect of the plant. B. Abaxial face of the leaflet. C. Adaxial face of the leaflet. D. Leaflet. E. Immature fruit. F. Calix. G. Base of the petiole. H. Stamens. I. Long stamen. J. Detail of the hair of the long stamen. K. Detail of the rhizome. (Drawn from the holotype, *Zabala et al. 204*, SI).

Herb 4–5 cm. Rhizomes 4–5 mm diam. with sparse ramifications, covered with thick scales; scales spirally imbricate, whitish, conical, with dark spot at apices; roots fibrous, adventitious, profusely branched. Leaves usually between 2 and 6 per plant. Stipules 2.0–2.5 mm long, hyaline, fully adnate to the petiole, narrowed toward the apex. Petioles 4–5 cm. Blades with 10–12 leaflets: leaflets 3.5–4.0 × 4.5–5.0 mm, sessile, square, folded, bases slightly cordate, margin wavy, ciliate, apices deeply emarginate, venation pinnate, glabrous on both surfaces. Flowers solitary, peduncle 4–5 cm, glabrous, bibracteolate; bracteoles up to 2 mm, hyaline, ovate, acute, sheathing, adnate at the base, glabrous, pedicel 3 mm, pubescent. Sepals 5.0–5.5 × 2.0–2.5 mm, pubescent externally, glabrous inside. Petals 1.5–2.0 × 0.5–1.0cm, pink to violet with purple streakes. Long

stamens with dorsal teeth and multiseriate hairs with warted wall on the abaxial edge. Short stamens glabrous. Fruits not seen.

FIGURE 2. Photographs of *Oxalis morronei* in its natural habitat. A. Camino de Los Antiguos a Paso Río Roballos. B. Detail of flower and leaflets.

Distribution and habitat:—Only known from "camino de Los Antiguos a Paso Río Roballos" (Fig. 2 A–B). The species grows in the shelter of rocks, in rocky and sandy soils, on slopes with western exposure, near a stream. The location corresponds to the confluence of two phytogeographical provinces: the Alto-Andina and the Sub-Antartic (Cabrera & Willink 1980). *Oxalis morronei* is associated with *Festuca L.*, *Nassauvia darwinii* (Hook. & Arn.) O.Hoffm. & Dusen, *Lathyrus magellanicus* Lam., *Calceolaria uniflora* Lam., and *Oxalis adenophylla* Gillies ex Hooker & Arnott (1832: 165).

Etymology:—The new species is dedicated to Dr. Osvaldo Morrone (1957–2011), a memorable member of the Instituto de Botánica Darwinion.

Observations:—This new species had been found in sympatry with *O. adenophylla*, but its particular morphology of the leaflets allows easy distinction in the field. This species is similar to *O. squamoso-radicosa* Steudel (1856: 443), *O. laciniata* Cavanilles (1799: 7), and *O. loricata* Dusén (1901: 247–270) in the presence of a horizontal rhizome with fleshy scales, and differs from *O. adenophylla*, *O. enneaphylla* Cavanilles (1799: 7), and *O. loricata* in the absence of linear leaflets. Despite this *Oxalis morronei* differs from the other members of *O.* section *Palmatifoliae* in having square leaflets with slightly cordate bases, wavy and ciliate margins, deeply emarginate apices. For a more comprehensive comparison of the species in *O.* section *Palmatifoliae* we refer to Table 1.

TABLE 1. Comparison of the morphological characters of species in *Oxalis* section.

Character	*O. morronei*	*O. squamoso-radicosa*	*O. laciniata*	*O. loricata*	*O. adenophylla*	*O. enneaphylla*
Subterranean structure	Horizontal rhizome	Horizontal rhizome	Horizontal rhizome	Horizontal rhizome	Pseudo-bulbous	Pseudo-bulbous
Scales	Thick, short, fleshy. Whitish, dark apex	Thick, short, fleshy. Whitish, pink apex	Thick, short, fleshy. Whitish, pink apex	Thick, short, fleshy. Blackish	Long and hispid. Membranous	Long and hispid. Membranous
Leaflets – shape	Square	Linear-cuneiform	Linear	Rotund-obcordate	Obcordate	Obcordate
Leaflets – margin	Wavy, ciliate	Wavy, glabrous	Straight, glabrous	Straight, glabrous	Straight, glabrous	Straight, glabrous
Leaflets – indumentum	Glabrous	Glabrous, pubescent	Glabrous	Glabrous	Glabrous	Glabrous, pubescent
Flower – peduncle	Glabrous	Glabrous or loosely pubescent	Glabrous or loosely pubescent	Glabrous	Glabrous loosely pubescent	Glabrous or loosely pubescent
Flower – pedicel	Pubescent	Glabrous or loosely pubescent	Glabrous or loosely pubescent	Glabrous or with simple and glandular hairs	Glabrous	Sericeous-pubescent
Sepal	Pubescent	Glabrous, pubescent	Glabrous	Glabrous, pubescent (glandular hairs)	Glabrous, apex ciliate	Glabrous, pubescent

Acknowledgments

We dedicate this paper to Dr. Osvaldo Morrone who has recently past away. Dr. Morrone was the PD advisor of Alicia López, we are deeply grateful for his comments and review of this manuscript. We thank L. Zavala, D. Degenaro, C. Guerreiro and H. Illaraga for their help in the collecting trip. We acknowledge J. Castello for the illustration. We are grateful to all the staff of IBODA for their invaluable support. We also thank H. Machado for the language editing and to the anonymous reviewer for the comments and suggestions that improved this paper. This study was funded by ANPCyT grants 01286 and 32640.

References

Cabrera, A.L. & Willink, A. (1980) *Biogeografia de America Latina*. Serie de Biología. Monografía Nº13. Secretaría General de la OEA. Programa Regional de Desarrollo Científico y Tecnológico. Washington. 122 pp.

Cavanilles, A.I. (1799) *Icones et descriptions Plantarum, qua aut sponte in Hispania crescent*, aut. *In:* Typographia regia (Ed), *Hortis hospitantur* 5: 7, pl. 411–412. Madrid.

Cronquist, A. (1981) *An Integral System of Classification of Flowering Plants.* Colombia University Press, New York.

Dusén, P.K.H. (1901) Öfversigt af Förhandlingar. *Kongliga Svenska Vetenskaps-Akademiens Handlingar* 58(4): 247–250.

Gillies, J. (1832) *In*: Hooker W.J. & Arnott G.A.W. (eds.), *Contributions towards a Flora of South America and the Islands of the Pacific*. Botanical Miscellany 3: 165. J. Murray. London.

Knuth, R. (1930) Oxalidaceae. *In:* Engler (ed.), *Das Pflanzenreich* 95, IV. 130: 1–481. Wilhelm Engelman, Leipzig.

Lourteig, A. (1982) Oxalidaceae extra-austroamericanae IV: *Oxalis* L. sectio *Articulatae* Knuth. *Phytologia* 50: 130–142.

Lourteig, A. (1983) Oxalidaceae. *In:* Reitz, R. (Ed), *Flora Ilustrada Catarinensis* 1–174. Herbário "Barbosa Rodrigues". Itajaí.

Lourteig, A. (1988) Oxalidaceae. *In:* Correa, M.N. (ed.), *Flora Patagónica*. Colección Ciéntífica. *Instituto Nacional de Tecnología Agropecuária* 8(5): 1–29.

Lourteig, A. (1994) *Oxalis* L. subgenero *Thamnoxys* (Endl.) Reiche emend. Lourt. *Bradea* 7: 1–199.

Lourteig, A. (2000) *Oxalis* L. subgéneros *Monoxalis* (Small) Lourt., *Oxalis* y *Trifidus* Lourt. *Bradea* 7: 200–629.

Macbride, J.F. (1949) Oxalidaceae. *In:* Flora of Peru. *Field Museum of Natural History. Botanical Series* 13: 54–601.

Salter, T.M. (1944) The genus *Oxalis* in South Africa: a taxonomic revision. *South African Journal of Botany* 31: 574–598.

Steudel, E.G. (1856) Eine Beiträge zu der Chilensischen und Peruanischen Flora, hauptsächlich nach den Samlungen von Bertero und Lechler. *Flora* 39: 436–444.