

# Two new species of *Acalypha* (Euphorbiaceae) from Peru and Bolivia

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Two new species of the genus *Acalypha* are described and illustrated, *A. delicata*, based on Peruvian material, and *A. beckii*, based on Bolivian material. Comments on the systematics of related species are included.

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## Introduction

As a part of a revision of *Acalypha* for the Andean countries, a thorough study was made on the materials deposited in several European and American herbaria. The present paper presents two new species from Peru and Bolivia, part of the results of this revisionary work, which was begun by Cardiel (1994, 1995, 1999, 2000 and 2002).

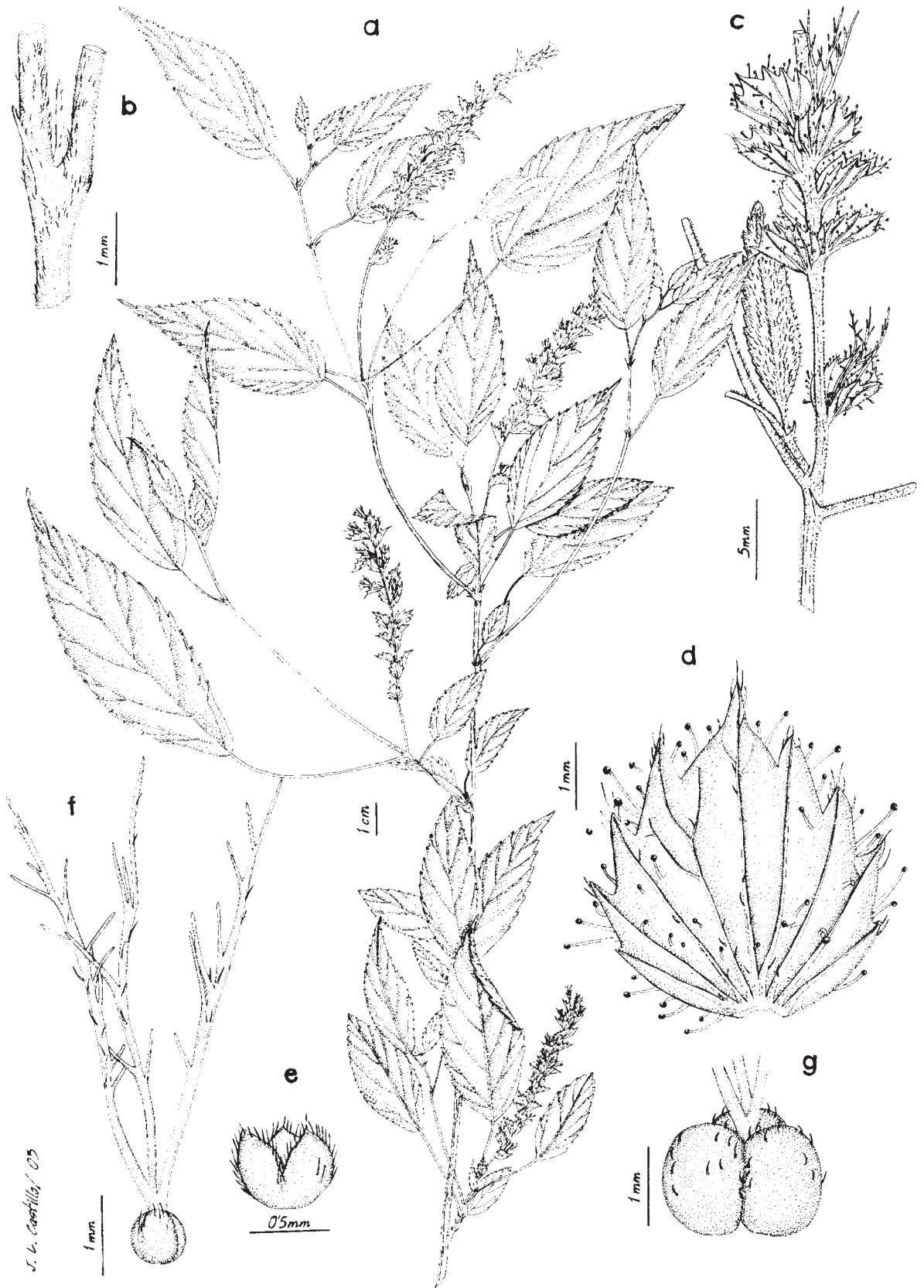
## *Acalypha delicata* Cardiel, sp. nov.

Type: Peru, Department of Tumbes. Province of Tumbes. Mts. E. of Hacienda Chicama, 800-900 m, 19-24 Feb 1927. (Expedition of 1927 under the Capt. Marshall Field. Fund). A. Weberbauer 7641 (F!, holotype, NY! isotype).

Speciei *A. contermina* Müll. Arg. similis, a qua praecipue differt bracteis foemineis uniflorigeris, profunde 8-10 dentibus dentatis, atque ovario sparse puberulo, non papillato. – Fig. 1.

Shrub c. 3 m high, cf. dioecious; young branches very slender, laxly puberulus, developed branches

glabrescent, with numerous lenticels. Stipules triangular-lanceolate, c. 2 mm long, acuminate, puberulus. Petiole very slender, (1.5) 2–5 (–7) mm long, with indumentum similar to that found on the young branches. Leaf blade ovate-lanceolate to elliptic-lanceolate, 6–8 (–10.5) × 2.5–3.5 (–4) cm, finely membranous; the base rounded to subacute, sometime subtruncate; the apex acute or acuminate, acumen mucronate; margin serrate, teeth broad, subacute; upper surface strigose-pubescent, glabrescent with rigid hairs to 1 mm long, broadened at base; lower surface laxly pubescent to subglabrous; venation pinnate, with the secondary veins 10–12 per side. Stipels absent. Male inflorescences not found. Female inflorescences spiciform, axillary or subaxillary in lateral branches, 8–10 (–12) cm long, laxly flowered; peduncle 1–2 cm long, laxly pubescent with retrorse hairs, sometimes occurring 1–2 female bracts at the base of peduncle; rachis clearly visible, pubescent; developed bracts 7–8 × 5–6 mm, broadly ovate to suborbicular, glabrous on lower surface, laxly pubescent on upper surface and margin, and with glandular hairs to 1 mm long mostly on margin; margin with 8-10 triangular teeth to 1 mm long, acute, central tooth prominent, acuminate. Female flowers sessile; the calyx c. 0.8 mm



*J. L. Castillo, 02*

long, with 3 minute sepals, triangular-ovate, connate at base, ciliate; ovary c. 1 mm in diameter, laxly puberulus on then upper half; styles three, 6–7 mm long, connate at the base, each branched in the upper half into 6–10 slender and short segments. Capsules (immature) ca. 2 mm in diameter, subglabrous, with some curved hairs on the upper half and sutures; seeds mature not observed. – Fig. 1.

*Note:* This species is only known from a single collection made at the Tumbes department, in Peru, in deciduous bushwood area.

### *Acalypha beckii* Cardiel, sp. nov.

Type: Bolivia, Department of Chuquisaca, Province of Oropeza, de Sucre, pasando Yotala, entrando por la quebrada Ñujchu, 2650 m. 15 Oct 1984. S. Beck 8871 (MA! holotype; DAV!, LPB isotype).

Paratype: Bolivia, Department of Chuquisaca, Province Oropeza, de Sucre, pasando Yotala, entrando por la quebrada Ñujchu, 2650 m. 15 Oct 1984. S. Beck 8882 (DAV!, LPB).

Speciei *A. aronioides* Pax & Hoffm. similis, a qua praecipue differt foliis membranaceis, ovato-lanceolatis aut elliptico-lanceolatis, margine minute acuteque dentatis, atque inflorescentiis pilis glanduliferis dense indutis. – Fig. 2.

Shrub 30–60 cm high, monoecious; young branches slender, puberulus, glutinous, with numerous glandular hairs, sessile or stipitate, developed branches early glabrescent. Stipules narrowly triangular-lanceolate, to 3 mm long, subacute, puberulous, sometimes with glandular hairs, caducous. Petiole 0.5–1 mm long, stout at base, with indumentum similar to that found on the young branches. Leaf blade 2–4(5–) × 0.5–1.5 cm, ovate-lanceolate to elliptic-lanceolate, membranaceous; the base cuneate to rounded; the apex acute to subacuminate; the margin serrate, teeth small, acute or subacute; upper and lower surface glabrous except on pubescent veins and margin, with minute, glandular resinaceous dots; venation pinnate, with 5–7 veins per side. Stipels absent. Inflorescences axillary, generally androgynous, or sometimes with the whole inflorescence male, or solitary female flowers. Androgynous inflorescence with the male flowers in upper position,

and a single female flower at the base, separate from the male flowers by a nude segment of rachis. Male inflorescences, or male part of the androgynous inflorescences, espiciform, to 3 cm long; peduncle puberulus and with glandular dots; flowers glomerate; bracts minute, triangular-lanceolate, ciliate-hispidulous, caducous. Female developed bracts, to 4.5(–5) × 6.5–9 cm; suborbicular to reniform, puberulus, with appressed sparse hairs on both surfaces and glandular hairs similar to those found on the young branches; the margin dentate or crenate-dentate, teeth obtuse, ciliated and with glandular hairs, flowers solitary. Male flowers inconspicuous, pedicellate, buds c. 1 mm diameter, hispidulous. Female flowers sessile; calyx with 3 sepals ovate-lanceolate to triangular-lanceolate, c. 1 × 0.5 mm, connate at base, ciliated and with some glandular hairs on the margin; ovary c. 1 mm diameter, pubescent and with glandular hairs; styles three, 6–7 mm long, connate at base, glabrous, each branched into numerous slender segments. Capsule (immature) c. 2 mm in diameter, with indumentum similar to that found on the ovary; seeds not seen. – Fig. 2.

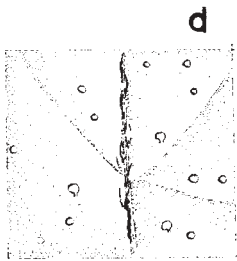
*Notes:* This species is only known from two collections made at North of Chuquisaca department, in Bolivia, at 2650 meters above the sea level.

This species is dedicated to Stephan Beck, director of the Bolivian National Herbaria (LPB) and the collector of the type specimen.

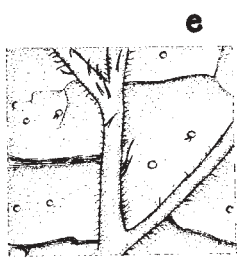
### Discussion

The two species described here belong to the subgenus *Acalypha*, which present sessile female flowers with acrescent bracts that become foliaceous when fruiting. *A. delicata* is related with *A. contermina* Müll. Arg. a not much known Peruvian species, can be distinguished of *A. delicata* mainly by its female bracts with 13–15 minute teeth on margin, subtending 2–3 flowers, and by the hirsute and papillose-muricate ovary. According to the infrageneric treatment proposed by Pax & Hoffmann (1924), both species could be included under the Section *Phleoideae* Müll. Arg., characterised by the axillary and terminal, androgynous or unisexual inflorescences; the female inflorescences (or female part of the inflorescence) with many bracts, and female bracts with non setaceous-acuminate teeth.

Fig. 1. *Acalypha delicata* – A, flowering branch with female inflorescences. – B, stipules. – C, detail of the female inflorescence. – D, female bracts. – E, calyx of female flower. – F, ovary and styles. – G, capsule (immature). – Webberbauer 7641 (DAV, MA).



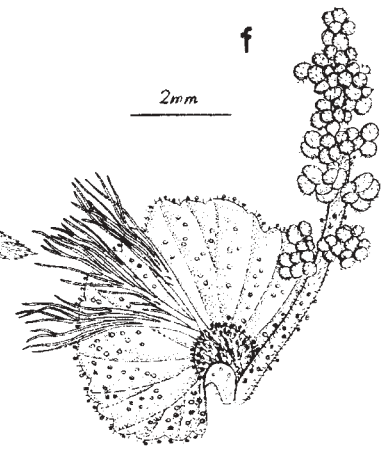
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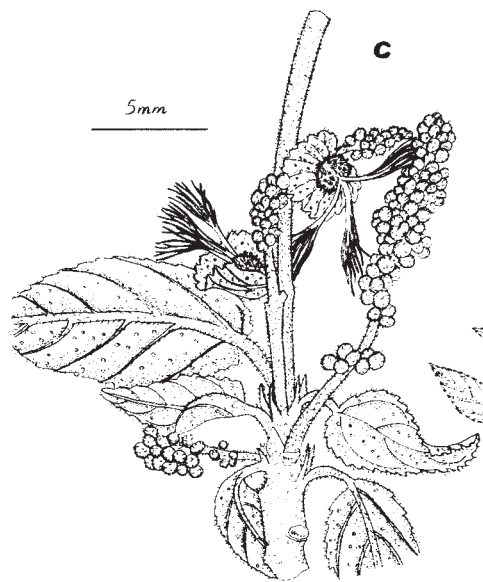
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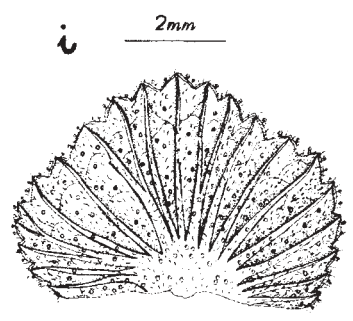
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2 mm



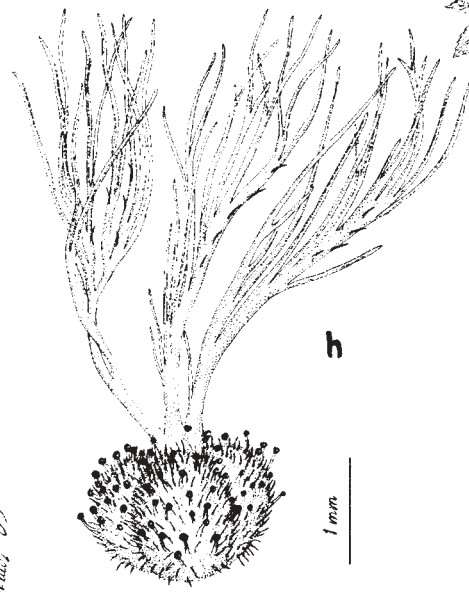
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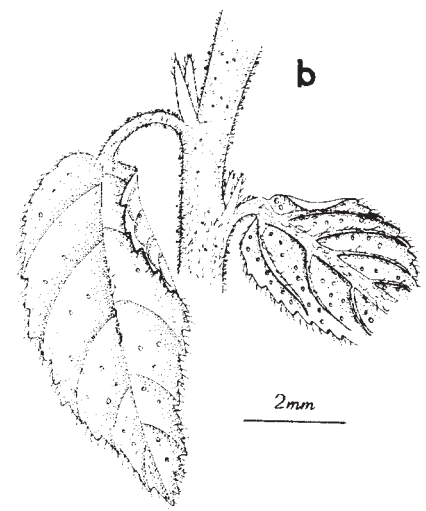
2 mm



1 mm



1 mm



2 mm

*S. l. cordata* O.S.

*A. beckii* belongs to a group of related Andean species of Peru and Bolivia which also includes: *A. aronioides* Pax & Hoffm., *A. lycioides* Pax & Hoffm. and *A. argomuelleri* Briq. According to Pax & Hoffmann (1924), all these species could be included under the Section *Brachypodae* Müll. Arg., characterised by axillary inflorescences, usually androgynous, entire or dentate female bracts and by pinnate nerved leaf blade. *A. aronioides* is only known from Andean Southern Peru, and can be distinguished mainly by its chartaceous leaf blades, with crenate-dentate margin and the absence of glandular hairs in the inflorescences. This type of trichome is however characteristic of *A. beckii* inflorescences. *A. lycioides* is known from Bolivia and Northern Argentina, and has thin-membranaceous leaf blades, narrowly lanceolate, and the ovary papilose without glandular hairs. *A. argomuelleri* is known from high altitude Andes of Peru and exhibits a characteristic which enables an easy identification; its remarkable coriaceous leaf blades, with white-tomentose lower surface.

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Fig. 2. *Acalypha beckii* – A, flowering branch with male and female inflorescences. – B, detail of leaf and stipules. – C, detail of flowering branch. – D, detail of the leaf upper surface. – E, detail of the leaf lower surface. – F, androgynous inflorescence. – G, calyx of female flower. – H, ovary and styles. – I, female bracts. – Beck 8871 (DAV, MA).

