

NEW SPECIES OF *APHANACTIS*, *CALEA*, *CLIBADIUM*, AND *TRIDAX*  
(HELIANTHEAE: ASTERACEAE) FROM ECUADOR AND PERU

Harold Robinson

Department of Botany, National Museum of Natural History, Smithsonian Institution,  
Washington, D.C. 20560 U.S.A.

ABSTRACT

*Aphanactis hutchisonii*, *Calea harlingii*, *Clibadium websteri*, and *Tridax cajamarcensis* are described as new. The new combination *Wedelia rudis* is also made.

KEY WORDS: Asteraceae, Heliantheae, *Aphanactis*, *Calea*, *Clibadium*, *Tridax*, *Wedelia*

The preparation of the Heliantheae treatment for the Flora of Ecuador has resulted in the discovery of undescribed species in a variety of genera, a *Calea* and *Clibadium* in Ecuador, and species of *Aphanactis* and *Tridax* in Perú. A new combination is made in *Wedelia* for *Zexmenia rudis*.

The following undescribed *Aphanactis* was discovered in the backlog of the late Dr. José Cuatrecasas almost immediately after publication of a paper describing four new species of that genus (Robinson 1997).

**APHANACTIS HUTCHISONII** H. Rob., *spec. nov.* TYPE: PERU. Amazonas: Chachapoyas, Cerros Calla Calla 26 kms above Leimebamba on road to Balsas, 3360 m, 16 Oct 1964, *Hutchison & Wright 6990* (HOLOTYPE: UC; Isotype fragment: US).

Plantae rosulatae et flagelliformes ca. 4 cm altae; caules villosi. Folia primaria in rosulis subacaulibus elliptica 2.5-3.5 cm longa, 0.8-1.7 cm lata, base et apice acuta, margine pauce remote serrulata supra et subtus villosa subtus pallidius longitudinaliter 7 aut 9 nervata; flagella procumbentia ad 10 cm longa, internodis 0.5-2.0 cm longis; foliis oppositis ellipticis 0.1-0.7 cm longis, 0.3-0.9 cm latis, integris vel pauce serrulatis utrinque villosis. Inflorescentiae terminales unicapitatae, pedunculis brevibus. Capitula ca. 4 mm alta, 7 mm lata; squamae involucri ca. 8 pallide virides 4.0-4.5 mm

longae, ca. 2.5 mm latae, apice acutae extus dense villosae; paleae anguste subulatae 0.5-1.8 mm longae. Flores radii ca. 5; corollae flavae ca. 2.5 mm longae, tubiformes distaliter inaequaliter 3 aut 4-lobatae extus dense plerumque antrorse pilosae in lobis paucе pilosulae, ductis 5 aut 6. Flores disci 25-30; corollae flavae ca. 2 mm longae in tubis et basis faucium dense plerumque antrorse pilosae in limbis plerumque glabrae, tubis ca. 0.7 mm longis, faucibus ca. 1 mm longis, lobis ca. 0.6 mm longis; thecae antherarum ca. 0.5 mm longae. Achenia ca. 2 mm longa glabra; pappus nullus. Grana pollinis in diametro ca. 27  $\mu$ m.

The label describes the plants as velvety prostrate rosettes, flowers yellow. *Aphanactis hutchisonii* was initially determined by Cuatrecasas as *A. villosa* S.F. Blake of Perú and southern Ecuador, and the plant is distinctly villous. However, the heads of *A. villosa* and the other southern species *A. boliviana* H. Rob. have 10 or fewer disk florets. The present species is most distinct in the rather Gnaphalioid habit with large rosette leaves and small leaves on spreading branches. The habit is only moderately approached by *A. boliviana* with its spreading branches that have long basal internodes. By its larger heads, the present species is related to the more northern members of the genus that have not been known previously south of Ecuador. The genus is characterized by peduncles that elongate after the heads mature, a process that apparently had yet to occur in the type collection of *A. hutchisonii*.

**CALEA HARLINGII** H. Rob., *spec. nov.* TYPE: ECUADOR. Loja: Vilcabamba - Yangana road, km 12-15, ca. 1900 m, 21 April 1980, *Harling & Andersson 18490* (HOLOTYPE: US; Isotype: GB).

Plantae tenuiter fruticosae ad 1 m altae mediocriter ramosae; caules flavo-brunnescentes leniter rubrotincti in maculis elongatis nigri, internodiis plerumque 2.5-4.0 cm longis. Folia opposita, petiolis ca. 5 mm longis; laminae herbaceae 3.0-5.5 cm longae, 2.0-3.2 cm latae, base late obtusae, margine subintegrae remote 7-8-crenulatae apice breviter acutae supra planae scabridulae subtus pallidiores minute puberulae vel hispidulae minute glandulo-punctatae 3-4 mm supra basem trinervatae. Inflorescentiae in ramis et ramulis foliosis terminales; pedunculis ad 10 mm longis minute puberulis. Capitula ca. 1 cm alta, 5-6 mm lata; bractee involucri ca. 20, subimbricatae in sereibus ca. 4 dispositae, bractea basilaris unica parva oblonga ca. 2 mm longa, 1 mm lata, apice leniter herbacea, bractee inferiores laxae congestae, bractee ceterae subcoriaceae 2-7 mm longae, 1.0-2.5 mm latae, apice anguste rotundatae vel breviter acutae sordidae scariosae plana extus stramineae 5-7 atro-lineatae; paleae scariosae ellipticae 5.5-6.0 mm longae, apice lacinatae argute acutae extus glabrae. Flores radii 2 aut 3; corollae flavae glabrae, tubis ca. 2.0-3.5 mm longis, limbis ca. 4 mm longis et 2 mm latis. Flores disci ca. 15; corollae flavae glabrae ca. 5.5 mm longae, tubis ca. 2 mm longis, faucibus anguste campanulatis ca. 2.5 mm longis, lobis leniter inaequalibus exterioribus ad 1.2 mm longis interioribus 0.8 mm longis; thecae antherarum 1.8 mm longae; appendices apicales extus glanduliferae. Achenia ca. 3 mm longa omnino longe setulifera; squamae pappi 20-22, ca. 4.5 mm longae. Grana pollinis in diametro ca. 33  $\mu$ m.

*Calea harlingii* is known only from the type collection cited from secondary scrub at about 1900 m in elevation. Relationship seems closest to *C. umbellulata* Hochr. that also occurs in Loja, but its achenes are setuliferous rather than essentially glabrous, its stems have minute pubescence rather than being hirtellous, and its disk corollas are slightly but distinctly zygomorphic.

**CLIBADIUM WEBSTERI** H. Rob., *spec. nov.* TYPE: ECUADOR. Pichincha: Cerro Negro, ca. 3.5 km (airline) E of Nanegalito, disturbed lower montane cloud forest, 00° 03-03.5' N, 78° 39' W, 1720-1760 m, 26 June 1996, *Webster, Hierro, & Canfield 31930* (HOLOTYPE: US; Isotypes: DAV,QNCE). Paratype: ECUADOR. Pichincha: Parroquia Nanegalito, cloud forest on western slopes of Cerro Negro, 2.5-3.0 km airline NE of Nanegalito, 2000-2050 m, 00° 04' N, 78° 39' W, 8 Sept 1993, *Webster, Elsas, & Morgan 30474* (DAV,QNCE,US).

Frutices erectae 2.0-2.5 m altae parce ramosae; caules subtereti dense albo-lanati. Folia opposita, petiolis 1-5 cm longis, longe albo-lanatis; laminae ovatae vel ovato-ellipticae, 10-22 cm longae, 3-8 cm latae, base breviter acutae, margine plerumque valide 25-35-serratae vel pauce serrulatae apice anguste acuminatae supra rugulosae dense pilosae subtus in nervis et nervulis exsculptis hirsutis in areolis hirsutulis hispidis et hispidulis, nervis secundariis subpinnatis in partibus ca. 2-3 cm supra basem nervis valdioribus et ascendentioribus. Inflorescentiae plerumque tripartitae in partibus glomerulatae, "pedunculis" 0.5-2.0 cm longis; glomerulae in diametro 1.2-2.2 cm sphaericae, in fasciculis bracteis basilaribus lanceolatis ca. 5 mm longis pilosulis. Capitula 2-4 mm alta et lata, bracteis involucri exterioribus sterilis 4 vel 5 oblongis, ca. 3 mm longis, 2.0-2.5 mm latis, plerumque subcoriaceis laevibus apice breviter acutis membranacioribus and venulosioribus saepe recurvatis vel incurvatis extus puberulis; bracteis femineis 5 aut 6 membranaceis late ovatae vel ovato-ellipticis ca. 3 mm longis, 1.5-2.0 mm latis, apice breviter acutis membranacioribus et recurvatis extus glabris margine et apice pilosulis; paleis tenuiter membranaceis ellipticis vel lanceolatis 2.0-2.5 mm longis argute acutis et distaliter erosis distaliter pilosulis. Flores feminei 5 aut 6; corollae albae cylindricae ca. 2 mm longae, inaequaliter 4-lobatae, lobis 0.15-0.35 mm longis. Flores masculini plerumque 3; corollae albae, ca. 3 mm longae, tubis 0.7-0.8 mm longis et latis, glabris, faucibus late et abrupte urceolatis, ca. 1.8 mm longis, ca. 1.2 mm latis, glabris, ductis rubris 5, lobis triangularibus ca. 0.4 mm longis extus dense pilosulis vel hirtellis; thecae antherarum ca. 1.2 mm longae; appendices apicales nigrae ca. 0.4 mm longae. Achenia feminei obovoidea, 1.5-2.0 mm longa, 1.2 mm lata in tertiam superiorem hirtella, pedicelis deciduis ca. 0.5 mm longis. Achenia masculini angusta ad 2 mm longa plerumque dense hirtella. Grana pollinis in diametro ca. 25  $\mu$ m.

*Clibadium websteri* is yet another of the members of the genus with glomerulate inflorescences. It is most distinct in the long woolly pubescence of the stems and the abruptly urceolate throats of the disk corollas.

**TRIDAX CAJAMARCENSIS** H. Rob., *spec. nov.* TYPE: PERU. Cajamarca: 9 kms N along road from Cajamarca to Bambamarca, ca. 9000 ft., 8 Jan 1983, *King & Bishop 9114* (HOLOTYPE: US; Isotypes: MO,USM). Paratypes: PERU. 5 km N along road from Cajamarca to Bambamarca, ca. 8600 ft., 8 Jan 1983, *King & Bishop 9108* (MO,US,USM); Cajamarca: Celendín, Sucre, 3300-3500 m, 13 Mar 1969, *Riccio 6357*, in part (US,USM); Contumazá, El Granero, ladera abierta, 2800 m, 4 June 1983, *Sagástegui & Lopez 10633* (HUT,US); Alrededores de Contumazá, ladera, 2600 m, 26 June 1983, *Sagástegui, Mostacero, & Alvitez 10691* (HUT,US); Cajamarca, Santa Apolonia - Cumbe Mayo, 3000 m, borde de carretera, 19 Nov 1983, *Sagástegui, et al. 11286* (HUT,US).

Frutices tenues declinatae inferne multo ramosae superne parce alterne ramosae; caules teretes striati brunnescentes patentiter scabriduli. Folia plerumque opposita superne alterna, petiolis nullis; laminae lineares vel saepe lineari-lobatae ad 5 cm longae, 1-3 mm latae, margine integrae vel lobatae apice anguste rotundatae supra et subtus dense pilosulo-scabridulae, nervis secundariis solum in lobis. Inflorescentiae diffusae in capitulis erectis numerosis longe pedunculatis; pedunculis plerumque 8-20 cm longis dense stipitate glanduliferis. Capitula late campanulata 11-15 mm alta; involucriae 9-18 mm latae; bractae involucri 4-seriatae ca. 25 oblongae, 2-7 mm longae, 1-2 mm latae, apice rotundatae margine breviter ciliato-fimbriatae extus glabrae vel subglabrae subapice minute scabridulae; paleae lineares 6-7 mm longae, 0.3-0.5 mm latae. Flores radii 6-8; corollae pallide purpureae, tubis angustis ca. 5 mm longis, limbis quadratis, ca. 7 mm longis et latis, apice late trilobatis. Flores disci ca. 20-25; corollae obscure distaliter purpureae ca. 6 mm longae, tubis ca. 1.8 mm longis, superne pilosulis, faucibus ca. 3.5 mm longis, lobis ca. 0.6 mm longis; thecae antherarum nigrae, 2.5-2.8 mm longae; appendices apicales pallidiores. Achenia ca. 3 mm longa, sericeo-setifera; setae pappi fulvae, ca. 3 mm longae, dense plumosae. Grana pollinis in diametro 32-35  $\mu\text{m}$ .

*Tridax cajamarcensis* has passed at various times under broad concepts of *T. angustifolia* Spruce *ex* Benth. or *T. peruviana* Powell. The new species differs from both by the generally smaller heads, the essentially glabrous outer surfaces of the involucreal bracts, and the tendency of the linear leaves to be lobed.

**WEDELIA RUDIS** (Baker) H. Rob., *comb. nov.* BASIONYM: *Zexmenia rudis* Baker in Martius, *Fl. Bras.* 6(3):188. 1884.

The validation usually cited for the combination is in Baker (1884) where the herbarium name *Wedelia rudis* occurs only in synonymy. The species was not included among the many *Wedelia* combinations provided by Turner (1992).

## LITERATURE CITED

- Baker, J.G. 1884. Compositae IV. Heliantheae, Helenioideae, Anthemideae, Senecionideae, Cynaroideae, Ligulatae, Mutisiaceae. *In*: Martius, C.F.P., *Fl. Bras.* 6(3):136-442
- Robinson, H. 1997. New species of *Aphanactis* in Ecuador and Bolivia and new combinations in *Selloa* (Heliantheae: Asteraceae). *Brittonia* 49:71-78.
- Turner, B.L. 1992. New names and combinations in New World *Wedelia* (Asteraceae, Heliantheae). *Phytologia* 72:389-395.