

Additions to *Aequatorium* and *Gynoxys* (Asteraceae: Senecioneae) in Bolivia, Ecuador, and Peru

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ABSTRACT. *Gynoxys carpishensis*, *G. rimachiana*, and *Senecio tuestae* are transferred to *Aequatorium*, *Gynoxys regis* is transferred to *Paragynoxys*, and *Aequatorium cajamarcense*, *A. juninense*, *A. kingii*, *A. tovarii*, *Gynoxys chin-gualensis*, *G. jaramilloi*, and *G. hutchisonii* are described as new.

Specimens submitted for identification over the years include the following four undescribed species of *Aequatorium* B. Nord. and three undescribed species of *Gynoxys* Cass. from Bolivia, Ecuador, and Peru. Two Peruvian species are transferred from *Gynoxys* to *Aequatorium*, one Peruvian species is transferred from *Senecio* to *Aequatorium*, and an Ecuadorian species is transferred from *Gynoxys* to *Paragynoxys* (Cuatrec.) Cuatrec. These are in addition to results of many separate papers providing recent descriptions and additions in *Aequatorium* (Nordenstam, 1978; Díaz-Piedrahíta & Cuatrecasas, 1990; Jeffrey, 1992) and *Gynoxys* (Sagástegui & Dillon, 1985; Dillon & Sagástegui, 1988; Funk & Robinson, 1989; Herrera, A., 1980; Robinson & Cuatrecasas, 1984; Sagástegui & Tellez-Alvarado, 1987).

Aequatorium cajamarcense H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Peru. Cajamarca: Prov. Cutervo, Distrito San Andrés de Cutervo, Parque Nacional de Cutervo, caserío "Pajonal," camino hacia Jaén (Chorro blanco), 2,600 m, 10 ago. 1987, Díaz & Osoreo 2585 (holotype, US; isotype, MO).

A speciebus ceteris hujus generis in foliis ellipticis abaxialiter subglabris distinctissimum.

Tree 18 m tall; internodes of young branches 0.8–30.0 cm long, glabrous or glabrescent with minute hairs near nodes, surface subcarnose, wrinkled when dry. Leaves opposite, petioles 1.0–2.5 cm long; blades subcoriaceous, elliptical, 6–12 cm long, 2–4 cm wide, base obtuse to shortly acute, margins remotely, minutely denticulate, apex acute to shortly and slightly acuminate, upper surface glabrous except for sparse, minute, granular hairs

along veins, lower surface subglabrous with sparse granular hairs along veins and over surface, the hairs with short narrow bases, subglobular, with 1–3 short points; venation pinnate, with 8–11 veins on each side. Inflorescence terminal on branches, broadly corymbose with spreading, densely corymbose branches, ca. 6 cm high and 11 cm wide; peduncles 1–3 mm long, with dense, minute, granular pubescence. Heads ca. 6 mm high; calyculus with an occasional narrowly lanceolate bract; involucre bracts ca. 8, elliptical or oblong, 2.0–2.3 mm long, 1.0–1.2 mm wide, apices rounded, subglabrous outside, with sparse granular pubescence on median band. Rays ca. 3; corolla yellow, glabrous, tube ca. 1.5 mm long, limb elliptical, ca. 4 mm long, 1.5 mm wide. Disk florets ca. 5; corolla yellow, ca. 5.5 mm long, glabrous, tube ca. 2 mm long, throat narrowly campanulate, ca. 1 mm long, lobes ca. 2.5 mm long; anther collar ca. 0.35 mm long, anther thecae ca. 1.5 mm long, apical appendage ca. 0.4 mm long, 0.25 mm wide; tips of style branches rounded, with slightly longer papillae at the apex. Achenes ca. 1.8 mm long, subglabrous, with small, scattered, rounded, thin-walled, subsessile glands that lack evident septa; pappus ca. 4 mm long, with bristles in 1 crowded series, apices slightly but distinctly broadened. Pollen grains 37–40 μm diam.

The genus *Aequatorium* was established by Nordenstam in 1978 based on two species of Senecioneae distinguished from *Senecio* by stellate hairs, elongate disk corolla lobes, cylindrical anther collars, and continuous but centrally depressed stigmatic surfaces on the style branches. The species had some resemblance to the genus *Gynoxys* in spite of having alternate leaves and blunt style tips. Still, some subsequent additions to the *Aequatorium* (Díaz-Piedrahíta & Cuatrecasas, 1990; Jeffrey, 1992) have opposite or subopposite leaves and were originally described in *Gynoxys*. The new species is one of the members of the genus with opposite leaves, but it is most distinct in the very sparse pubescence on the lower leaf surfaces. The hairs are not truly stellate, but they are globular with 1–3 short points. Only *A. rimachiana* has pubescence on the abaxial

leaf surface that is sparse, but that pubescence is still much denser and more stellate, and the leaves of that species are alternate with larger blades. The new species is described as a tree 18 m tall, and as such may be the largest member of this shrubby and arborescent genus.

Aequatorium carpishense (Cuatrec.) H. Robinson & J. Cuatrecasas, comb. nov. Basionym: *Gynoxys carpishensis* Cuatrec., Brittonia 12: 185. 1960.

This species, from Carpish Pass in Huánuco, appears to be closest to *A. stellato-pilosum* (Greenm. ex Greenm. & Cuatrec.) Jeffrey from the Villcamba region of Cuzco. The leaf blades of *A. carpishense* seem more obviously shallowly dentate with thicker and more persistent stellate pubescence on the undersurface.

Aequatorium juninense H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Peru. Junín: Carpapata, above Huacapistana, 2,700–3,200 m, 7 June 1929, Killip & Smith 24434 (holotype, US).

In caulibus sparse et distincte hirsutis et in laminis foliorum ellipticis et integris distinctissimum.

Shrubs 2–4 m tall, laxly branched; stems slightly deflected at the upper nodes, strongly ribbed, covered by dense yellowish tomentum of stellate hairs, sparsely hirsute above with long spreading hairs. Leaves alternate, petioles 2–3 cm long, surface similar to stems; blades elliptical, 7–14 cm long, 3.0–6.5 cm wide, base rounded, margins entire, apex shortly acute, upper surface dark green, with sparse, evanescent pubescence of stellate hairs, lower surface with loose tomentum of stellate, interlocking hairs only partially hiding the leaf surface; venation pinnate with ca. 10 spreading secondary veins on each side. Inflorescence terminal on branches, broadly corymbose, 11–14 cm high and 12–20 cm wide, with rather spreading branches; peduncles 2–8 mm long, rather densely stellate pubescent. Heads 9–10 mm high; subinvolucral and calycular bracts 1–2 mm long; involucral bracts ca. 8, 4–6 mm long, 1.5–2.0 mm wide, apices obtuse, glabrous outside. Ray florets 2 or 3, corolla yellow, glabrous, tube ca. 5 mm long, limb elliptical, ca. 10 mm long and 2.5 mm wide. Disk florets 7–9; corolla yellow, glabrous, tube ca. 3 mm long, throat narrowly campanulate, ca. 3 mm long, lobes narrowly triangular, ca. 1.8 mm long; anther collars ca. 0.5 mm long, thecae ca. 1.7 mm long, apical appendage ca. 0.6 mm long and 0.25 mm wide; style tips rounded, with short pencil of hairs. Achenes ca. 3.5 mm long,

glabrous; pappus 5.0–5.5 mm long, apices not broadened. Pollen grains 35–37 μ m diam.

Paratype. PERU. JUNIN: Carpapata, above Huacapistana, 2,700–3,200 m, 7 June 1929, Killip & Smith 24402 (US).

The type and paratype specimens have the same basic label citing the habitat as edge of forest.

The new species seems closely related to *Aequatorium repandum* (Wedd.) Jeffrey in the general aspect, the number of florets in the head, and the comparatively short triangular lobes of the corolla, shorter than the corolla throat. *Aequatorium juninense* differs by the generally more elliptical leaf blades, and the less dense stellate pubescence on the undersurfaces not completely hiding the leaf surface. The younger stems show some erect spreading hairs similar to those of *A. kingii* described below, but the number of hairs is much less and they are not as obvious a key character. The pappus bristles are like those of *A. kingii* in the lack of broadened apices.

Aequatorium kingii H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Bolivia. Cochabamba: 15 km from Colomi, on the road to Tunari, 10,600 ft., 7 Feb. 1978, King & Bishop 7680 (holotype, US).

In caulibus grosse et dense hirsutis et in laminis foliorum oblongo-ovatis et in capitulis majoribus distinctissimum.

Trees or large shrubs 3 m tall; moderately branching; stems strongly ribbed, sulcate, densely covered with appressed tomentum of stellate hairs, also densely hirsute with stiff, spreading, yellowish hairs. Leaves alternate, petioles 10–25 mm long, surface similar to stems, with or without large, erect hairs; blades ovate-oblong, mostly 5–10 cm long and 2.5–5.5 cm wide, base shallowly but distinctly cordate, margins shallowly to strongly dentate, apex shortly acute, upper surface dark green, smooth, veinlets rarely slightly prominulous, subglabrous, with scattered, minute, evanescent, stellate hairs, lower surface with large, yellow, stellate, interlocking hairs, with or without denser underlayer of minute, whitish stellate hairs completely hiding surface; veins pinnate with 5–6 spreading secondary veins on each side which are more crowded and more spreading near base. Inflorescence terminal on branches, broadly corymbose with ascending branches, 6–9 cm high, 9–14 cm wide; peduncles 2–12 mm long, densely covered with grayish, stellate hairs. Heads 7–10 mm high; subinvolucral and few calycular bracts linear, 6–9 mm long, ca. 1 mm wide, glabrous or with few stellate hairs; involucral bracts 8, oblong, 7–10 mm long, 1.5–2.5 mm wide, narrowed above

with apices obtuse, glabrous outside. Ray florets 4 or 5; corolla yellow, glabrous, tube 6 mm long, limb elliptical, ca. 10 mm long and 3 mm wide. Disk florets 10–14; corolla yellow, glabrous, tube ca. 3.5 mm long, throat narrowly campanulate, 3.5–4.0 mm long, lobes narrowly triangular, ca. 1.8 mm long, 0.8 mm wide at base; anther collar ca. 0.5 mm long, thecae ca. 1.8 mm long, apical appendage 0.6–0.7 mm long, ca. 0.22 mm wide; tips of style branches rounded, with stout apical pencil of hairs. Achenes submature, ca. 2.5 mm long, glabrous; pappus ca. 7 mm long, in 2 series, apices not broadened. Pollen grains ca. 37 μ m diam.

Paratypes. BOLIVIA. COCHABAMBA: 26 km from Comarapa, on road to Cochabamba, 8,500 ft., 5 Feb. 1978, King & Bishop 7650 (US); Prov. Carrasco, 5 km al NE de Monte Punco por el camino a Sihuenca, 17°34'S 65°15'W, 2,700 m, 10 Mar. 1988, Solomon & Nee 18067 (MO, US).

Aequatorium kingii seems most similar to *A. fabrisii* (Cabrera) Jeffrey of northern Argentina in the short bases of its leaf blades, the ascending branches of its inflorescences, and the 4 to 5 ray florets and 10 or more disk florets in the head. The new species is most distinct in the densely and stiffly hirsute condition of the stems, a feature seen to some extent elsewhere in the genus only in *A. juninense* described above. The three specimens of the present species all show leaf blades with slightly but broadly cordate bases unlike the narrowly cordate bases sometimes seen in *A. repanda* (Wedd.) Jeffrey, the obtuse to subtruncate bases illustrated for *A. fabrisii* (Cabrera, 1978), or the rounded bases seen in *A. juninense*. The type specimen of the new species lacks the dense layer of smaller hairs on the lower leaf surface that completely hides the surface, but such hairs are present in both paratypes.

Aequatorium rimachianum (Cuatrec.) H. Robinson & J. Cuatrecasas, comb. nov. Basionym: *Gynoxys rimachiana* Cuatrec., Phytologia 52: 164. 1982.

Sagástegui & Dillon (1985) noted the presence of three arborescent species of *Gynoxys* in the Carpiash Pass area, including this and *G. carpiashensis*. The third species mentioned, *Gynoxys congestiflora* Sagástegui & Dillon, has strictly opposite leaves, unbranched, contorted hairs, and more pointed style tips, and it is not an *Aequatorium*.

Aequatorium tovarii H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Peru. Huancavelica: Prov. Tayacaja, Arriba de Marcavalle, entre Huachocolpa y Tintay, 3,300 m, 21 Apr. 1964, Tovar 4781 (holotype, US).

In laminis foliorum oblanceolatis et in lobis corollae anguste oblongis distinctissimum.

Shrubs to 2 m high, moderately branched; stems terete, weakly ribbed, completely covered with dense, yellowish, appressed tomentum of stellate hairs. Leaves alternate, petioles 7–15 mm long; blades oblanceolate, mostly 8–13 cm long and 2.3–4.0 cm wide, widest near distal third or fourth, base narrowly rounded, margins subentire, with minute, remote denticulations, apex obtuse or shortly acute, upper surface dark green, with scarcely prominulous veinlets, subglabrous with few evanescent hairs, with larger, unbranched hairs on midvein; lower surface with dense tomentum of stellate hairs; venation pinnate with ca. 8 ascending secondary veins on each side. Inflorescences terminal on branches, rounded corymbose, with erect-spreading lower branches from axils of distal leaves; peduncles 1–7 mm long, densely stellate pubescent. Heads 9–10 mm high; calycular bracts ca. 5, linear, 1–2 mm long; involucre bracts ca. 8, oblong, ca. 6 mm long and 1.5–2.0 mm wide, apices obtuse, partially obscured outside by stellate hairs. Ray florets usually 3; corolla yellow, glabrous, tube ca. 5 mm long, limb elliptical, ca. 6 mm long and 2 mm wide. Disk florets ca. 7; corolla yellow, 8.0–8.3 mm long, tube 3.5–4.0 mm long, throat narrowly campanulate, ca. 2 mm long, lobes narrowly oblong, ca. 2.3 mm long; anther collar ca. 0.4 mm long; thecae ca. 1.7 mm long; apical appendage ca. 0.7 mm long and 0.27 mm wide; style tips rounded, with short apical pencil of hairs. Achenes submature, ca. 1.8 mm long, glabrous; pappus 6–7 mm long, with bristles in 2 series, apices slightly but distinctly broadened. Pollen grains ca. 33 μ m diam.

Paratype. PERU. HUANCVELICA: Prov. Tayacaja, Abajo de San Antonio, distrito de Surcubamba, 2,200 m, 27 abr. 1963, Tovar 4252 (US).

The specimens are cited from “bosque con pajonal” and “bosque subxerófilo.”

Aequatorium tovarii has the general appearance of *A. repandum* from Bolivia and southeasternmost Peru, but in the former the leaves are distinctly wider in the distal half, the secondary veins are more ascending, and the disk corolla lobes are narrowly oblong and longer than the corolla throat. The lobes are unlike the narrowly triangular lobes of the *A. repandum* group, and are like those of the more northern species of *Aequatorium*.

Aequatorium tuestae (Cuatrec.) H. Robinson & J. Cuatrecasas, comb. nov. Basionym: *Senecio tuestae* Cuatrec., Fieldiana 27: 46. 1951.

This species seems somewhat similar to large-leaved *A. carpishense* and *A. rimachianum*, but it lacks cordate bases on the leaf blades.

Gynoxys chingualensis H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Ecuador. Sucumbíos: Páramo Mirador SW of Playón de San Francisco, S of Río Chingual headwaters, elev. 3,400–3,600 m, King, Peterson & Judziewicz 10131 (holotype, US; isotypes, MO, K).

In foliis late oblongo-ovatis subsessilibus supra glabris distinctissimis.

Shrubs 3–4 m tall, moderately branching; stems densely brownish velutinous. Leaves opposite, petioles 1–2 mm long; leaf blades broadly oblong-ovate, 4.5–7.0 cm long, 3.0–4.3 cm wide, base shallowly cordate, margins entire with remote, mucronate dentations reflexed against lower surface, apices rounded, upper surface glabrous, with a reticulum of prominent veinlets, lower surface with dense brown tomentum, with long, unbranched, sinuous hairs and some T-shaped hairs of similar diameter intermixed; venation pinnate, with 6–8 secondary veins on each side, widely forking about halfway to margin. Inflorescence terminal on branches, broadly corymbose with densely corymbose branches, ca. 9 cm high and 14 cm wide; peduncles 5–10 mm long, densely brownish tomentose. Heads ca. 12 mm high; below the heads 2–3 linear, tomentose bracts ca. 8 mm long; involucre bracts ca. 8, oblong, 8–9 mm long, 1.5–3.0 mm wide, obtuse to shortly acute, densely tomentose on exposed outer surfaces. Ray florets ca. 5; corolla yellow, tube 4 mm long, glabrous, limb ca. 11 mm long and 3 mm wide, pilosulous in basal sinus, otherwise glabrous. Disk florets ca. 12; corolla yellow, ca. 10 mm long, glabrous, tube 4.0–4.5 mm long, throat narrowly campanulate, ca. 3.5 mm long, lobes ca. 2 mm long, 0.8 mm wide at base; anther collar ca. 0.8 mm long, cylindrical; thecae ca. 2 mm long; apical appendage ovate-oblong, 0.8 mm long and 0.3 mm wide; style apex twice as long as wide to bases of apical hairs. Submature achenes ca. 2.5 mm long, glabrous; pappus ca. 8 mm long, bristles in 2 crowded series, apices distinctly enlarged with many rows of crowded cells.

The specimen was collected from a páramo with *Espeletia* and *Calamagrostis*.

The subsessile leaves of *Gynoxys chingualensis* resemble those of *G. hirsuta* Wedd. from Depto. Cundinamarca, Colombia, but the latter has a more diffuse inflorescence with fewer heads on more numerous leafy branches, a coarser grayish pubescence, and smooth upper leaf surfaces with evanescent hairs. The new species resembles *G.*

tomentosissima Cuatrec. of Amazonas, Peru, in habit, but the latter has more angled stems, longer petioles to ca. 1 cm long, and larger leaf blades with auriculate bases and smooth upper surfaces thinly velutinous with yellowish hairs.

Gynoxys hutchisonii H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Peru. Piura: above Huancabamba, road to Piura, 3,000 m, 10 Oct. 1957, P. C. Hutchison 1609 (holotype, US).

In foliis parvis et in capitulis eradiatis distincta.

Shrubs 0.5–1.5 m tall, highly branched; stems terete, scarcely striated, densely pale yellowish tomentose. Leaves opposite, petioles 5–10 mm long; blades oblong, 1.5–3.0 cm long, 0.8–1.5 cm wide, base rounded to subtruncate, margins entire, apex rounded to slightly obtuse, upper surface glabrous except on midvein, essentially smooth, lower surface densely tomentose with pale yellowish, unbranched, sinuous hairs; venation pinnate, with 4 or 5 secondary veins on each side sometimes forked near margin. Inflorescences clustered in pyramidal groups on leafy branches and branchlets, branches rather densely to laxly corymbose; peduncles 2–10 mm long, densely tomentose. Heads 1.0–1.2 cm high; calyculus bulging without obvious bracts; involucre bracts ca. 8, oblong, ca. 5 mm long and 1.5 mm wide, apices shortly acute, densely tomentose on exposed outer surfaces. Ray florets lacking. Disk florets 5–12; corolla pale yellow, 7–8 mm long, glabrous, tube 2.0–2.5 mm long, throat narrowly campanulate, 3.0–3.5 mm long, lobes ca. 1.8 mm long, ca. 0.7 mm wide at base; anther collar ca. 0.6 mm long, thecae ca. 1.2 mm long, apical appendage ca. 0.6 mm long and 0.25 mm wide; apex of style twice as long as wide to base of apical hairs. Achenes 2.5–3.0 mm long, glabrous; pappus in 2 crowded series, 6–8 mm long, distinctly broadened at tips. Pollen grains ca. 37 μ m diam.

Paratype. PERU. AMAZONAS: Prov. Chachapoyas: Cerros de Calla-Calla, near km 403–407 of Balsas-Leimebamba road, 3,400–3,550 m, 18 Aug. 1962, J. J. Wurdack 1702 (US).

Gynoxys hutchisonii is distinct in the combination of the small leaves and the rayless heads. Such small leaves are not found in other Peruvian species (Herrera, A., 1980; Sagástegui & Tellez-Alvarado, 1987; Dillon & Sagástegui, 1988), while the many small-leaved species of Ecuador all have rays. The rayless condition might occur occasionally in normally radiate species of *Gynoxys*, but a number of species are characteristically rayless. One group without rays and with glabrous involucre bracts is

represented in Peru by *G. soukupii* Cuatrec. Also rayless is the Peruvian *G. longifolia* Wedd., with its unusually long and slender leaves and somewhat axillary inflorescences.

The two specimens of the new species differ somewhat in appearance. The paratype is more branched and has more flexuous stems. The paratype also has generally longer peduncles and has 5–10 florets in the heads. The holotype has peduncles under 5 mm long and mostly 10–12 florets in the heads.

Gynoxys jaramilloi H. Robinson & J. Cuatrecasas, sp. nov. TYPE: Ecuador. Loja: Loma del Oro, 2,800–3,200 m, without date, *Jaramillo, Zak & Valencia 8799* (holotype, US; isotype, QCA).

In floribus femineis redactis et in pilis crassis contortis et in pilis pagina abaxiale foliorum valde bifimbriatis distinctissima.

Shrubs 5 m high, with many short branches; stems terete with low ribs, bearing numerous, coarse, contorted, retrorse hairs, without underlayer of hairs, stem surface visible between hairs. Leaves opposite, petioles 0.5–1.0 cm long, slender, with erect hairs; blades oblong, mostly 3.0–4.5 cm long, 1.2–2.2 cm wide, base subtruncate to rounded, margins slightly sinuous, with minute, remote, mucronate denticulations reflexed against lower surface, apex rounded to obtuse, upper surface with secondary veins and some tertiary veinlets slightly prominulous, subglabrous, with sparse, evanescent, coarse, contorted hairs, lower surface densely yellowish tomentose, with coarse, contorted hairs underlain with fine tomentum of small T-shaped hairs; venation pinnate, with 5–6 secondary veins on each side, often forked halfway to margin. Inflorescence with small groups terminal on branches and branchlets, pyramidal with corymbose branches, 3–4 cm high and 3–5 cm wide; peduncles 5–13 mm long, densely tomentose with contorted, brown hairs. Heads ca. 1 cm high; subinvolucral and calycular bracts few, short, linear, 1.5–2.5 mm long; involucral bracts ca. 8, oblong, ca. 6 mm long and 1.5–2.0 mm wide, apices obtuse to shortly acute, densely tomentose outside on exposed surfaces. Female florets 2–3; corolla yellow, in form of small ray with 3 lobes or disciform with 5 lobes, glabrous, tube 4.5–6.0 mm long, limb 1.8–3.0 mm long, lobes 0.5–1.8 mm long, 0.3–0.4 mm wide at base; staminodia sometimes present. Disk florets 10–12; corolla yellow, glabrous, tube ca. 3 mm long, throat narrowly campanulate, ca. 3 mm long, lobes ca. 1.8 mm long, ca. 0.7 mm wide at base; anther collar cylindrical, ca. 0.6 mm long, thecae ca. 1.4 mm long, apical appendage ca. 0.7 mm long and 0.3 mm wide; apex of style 3 times

as long as wide to base of apical hairs. Achenes immature, ca. 2 mm long, glabrous; pappus ca. 7 mm long, in 2 crowded series, gradually broadened to tip. Pollen grains ca. 37 μ m diam.

The type specimen is said to be from “vegetación de bosque andina y paramal con áreas de cultivo y potrero, especies de *Weinmannia*, *Clusia*, *Podocarpus*, *Diplostegium*, *Hesperomeles*, *Clethra*.”

Gynoxys jaramilloi superficially resembles some of the more common members of the genus in southern Ecuador, such as *Gynoxys cuicochensis* Cuatrec., but the relationship is evidently not close. The type specimen was first noticed because of the seemingly rayless heads, some of which are mature enough to show rays if they were of normal size. A few female florets prove to be present, but they are small and often radially symmetrical with five lobes. The one female floret mounted on a microscope slide had a small raylike limb and small staminodia.

A more interesting distinction of the new species is in the hairs of the stems and leaves. The stem hairs are coarse and contorted, and they do not completely hide the surface of the stem. Similar unbranched, contorted, but smaller hairs are found in the denser pubescence on the leaf undersurface, but those surfaces have a dense underlayer of much smaller, contorted, T-shaped hairs. Such hairs have not been noticed in other species of *Gynoxys*, and most species obviously have hairs completely covering the young stems. Most species of *Gynoxys* have not had the hair types of their abaxial leaf surfaces examined in such detail, but unbranched and T-shaped hairs of similar size to each other are intermixed in *G. chingualensis* described above.

Paragynoxys regis (H. Robins. & Cuatrec.) H. Robinson & J. Cuatrecasas, comb. nov. Basionym: *Gynoxys regis* H. Robins. & Cuatrec., Phytologia 56: 370. 1984.

This species is unlike most *Gynoxys*, and like *Paragynoxys* in the lack of rays in the heads, the blunt tips of the style branches, and the long corolla lobes separated to the base of the throat. The species is unusual in *Paragynoxys* by the opposite leaves and the involucre of 5–8 bracts. Its closest relationship seems to be with the similarly small-leaved, Peruvian *Gynoxys lopezii* Dillon & Sagástegui (1988), which was transferred to *Paragynoxys* by Cuatrecasas (1990: 314).

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