

PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON

THREE NEW COMPOSITES FROM BOLIVIA.

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Recent study of the material of the family Asteraceae (except that belonging to the tribes Vernonieae and Eupatorieae) collected by the members of the Mulford Biological Exploration of the Amazon Basin has led to the recognition of three new species. All of these are from the pampas along the Rio Beni or its tributaries, to the east of the Andean chain, and all are of interest from the fact that they are most closely allied to species known only from central and southern Brazil or the regions southward. Another composite, *Chaenocephalus heterophyllus* Griseb., collected by the same expedition at Huachi, Bolivia, altitude 915 meters, has been previously known only from Argentina.

Erigeron seneciiformis Blake, sp. nov.

Erect herbaceous perennial, simple below the inflorescence, 0.7 to 1 meter high, the root not seen; stem rather stout, striate-angulate, green, below the inflorescence glabrous or with a few short spreading hairs; leaves alternate, about 8, the lower obovate, 8 to 14 cm. long, 3 to 4.5 cm. wide, obtuse or acutish, narrowed to a sessile base, finely and subremotely callous-denticulate, pergamentaceous, light green, glabrous on both sides or sparsely hirsutulous on costa beneath, hispidulous-ciliolate, featherveined, the whitish costa prominulous beneath, the chief lateral veins 6 to 8 pairs, prominulous or obscure; middle leaves elliptic, clasping, 4.5 to 8.5 cm. long, 0.8 to 1.8 cm. wide; upper leaves remote, bracteiform, 1.5 to 2.5 cm. long, hirsute-ciliate; heads 1.8 cm. wide, radiate, 5 to 22 in a usually close, cymose, terminal panicle, on sparsely spreading-hirsute pedicels 1 to 3.8 cm. long, these subtended by subulate to lance-ovate bracts 1.5 cm. long or less; disk hemispheric, 7 to 8 mm. high, 1.5 cm. thick; involucre 4-seriate, graduate, 7 mm. high, appressed, the phyllaries lanceolate or narrowly oblong-lanceolate, acute or acutish, ciliolate, otherwise glabrous or the outer sparsely hirsutulous, the outer with subherbaceous center and subscarios yellowish margin, the others subscarios and yellowish, marked

with about 3 rows of reddish vittae; receptacle flat, fimbriate, the fimbriae 0.5 mm. long; flowers "deep dandelion yellow"; rays biseriate, about 67, scarcely surpassing disk, erectish, the tube subglabrous, 2.8 mm. long, the lamina narrowly elliptic, emarginulate, 4 mm. long, 1.1 mm. wide, marked with 3 reddish vittae; disk flowers very numerous, their corollas essentially glabrous, marked with 5 reddish vittae, 5.5 mm. long (tube 1.5 mm., throat cylindrical-funnelform, 3.2 mm., teeth ovate, acutish, 0.8 mm.); ray achenes oblong, 1.6 mm. long, hirsute above, elliptic in cross-section, 2- or 3-nerved, the nerves reddish, the pappus bristles 1-seriate, unequal, brownish-tinged, 4.5 mm. long; disk achenes similar, compressed, 2-nerved, their pappus 5 mm. long; style-branches oblong, with deltoid, obtusish, dorsally hispidulous appendages.

Type in the U. S. National Herbarium, No. 1,120,942, collected in open wet grassy pampa, Hacienda Rosario, near Reyes, Bolivia, altitude 305 meters, April 11, 1921, by O. E. White (Mulford Biological Exploration of the Amazon Basin, No. 1206).

A species remarkable for its very short yellow rays, its graduate involuere of subscarios yellowish phyllaries, and its aspect, which is very similar to that of the groundsels of the *Senecio integerrimus* group. It is evidently a member of the Section *Leptostelma* of *Erigeron*, agreeing in structural characters and in habit with the Brazilian *Erigeron maximus* (D. Don) Otto, but differing greatly in its very short yellow rays (those of *E. maximus* being elongate and white, tinged with bluish or purplish) and in numerous details.

***Aspilia lucidula* Blake, sp. nov.**

Suffrutescent, 2 meters high, oppositely branched; stem slender, somewhat compressed, sparsely strigillose, glabrescent below; internodes 7 to 11 cm. long; leaves opposite; petioles slender, usually narrowly marginate above, sparsely strigillose, 8 to 15 mm. long; leaf blades ovate or oblong-ovate, 7.5 to 11 cm. long, 2 to 3.5 cm. wide, falcate-attenuate, cuneate or rounded-cuneate at base, serrate (teeth about 9 to 17 pairs, small, depressed, mostly acute, 2 to 8 mm. apart), thin-papery, somewhat shining above or on both sides, above deep green, evenly and rather sparsely strigillose, smooth to the touch, obscurely bullate in age, beneath green, evenly strigillose, triplinerved slightly above the base, loosely prominulous-reticulate beneath, impressed-veined above; heads solitary in the forks and in terminal cymes of 2 or 3, 1.6 to 2 cm. wide, on strigillose monocephalous peduncles 2.5 to 5 cm. long; disk subglobose, about 7 mm. high, 9 mm. thick; involuere 3-seriate, somewhat graduate, 7.5 mm. high, the phyllaries comparatively few, those of the outermost series lanceolate or lance-oblong, about 2 mm. wide, acute, strigillose, with 3 black nerves below, the indurate base equaled or exceeded by the spreading herbaceous tip; those of the two inner series subequal, oval or obovate-oval, 4 to 5 mm. wide, minutely ciliolate, otherwise glabrous, black-lined and black-dotted, with indurate base and subequal, subscarios, rounded, rather loose apex; rays about 8, neutral, yellow, the lamina oval, bidentate, 8 mm. long, 4 mm. wide; disk corollas yellow, glabrous except for the hispidulous teeth, 5 mm. long (throat 1.5

mm., tube 2.8 mm., teeth 0.7 mm.); pales obtuse or acute, narrowly keeled, hispidulous on keel and on margin above, 5 mm. long; disk achenes narrowly obovoid, 3 mm. long, 1 mm. wide, slightly compressed, hispidulous, without margin or ears; pappus a narrow crown of lacerate squamellae without awns, about 0.5 mm. high and wide.

Type in the U. S. National Herbarium, No. 1,120,940, collected at Rurrenabaque, on the Rio Beni, District of Caupolicán, Province of Beni, Bolivia, altitude 305 meters, October 1, 1921, by H. H. Rusby (Mulford Biological Exploration of the Amazon Basin, No. 758).

Apparently nearest the Brazilian *Aspilia podophylla* Baker, which, according to the description, has smaller, glabrous leaves, longer involucre, and glabrous achenes.

***Calea rhombifolia* Blake, sp. nov.**

Erect herbaceous perennial, 45 to 58 cm. high, the root not seen; stem simple, slender, striatulate, rather densely hirsute with several-celled wide-spreading hairs, sparsely sessile-glandular, and also toward apex densely hirsutulous; nodes 3 to 6, the internodes 3 to 10 cm. long; lowest leaves or rarely all opposite, the 1 to 3 upper nodes usually bearing a whorl of 3 or 4 leaves; leaves sessile, the upper larger, rhombic, broadest at the middle, 6.5 to 11.5 cm. long, 1 to 2.5 cm. wide, acuminate, narrowly cuneate and entire for the lower third of their length, elsewhere sharply dentate-serrate with 7 to 15 pairs of triangular acute or obtusish teeth, firm-pergamentaceous or subcoriaceous, nearly equally green on both sides, above harshly hirsute with several-celled strongly tuberculate-based hairs, beneath harshly hirsute on all the veins and veinlets with scarcely tuberculate-based hairs, glabrous on the surface, triplinerved 1.5 to 3 cm. above the base, densely prominent-reticulate beneath, prominulous-reticulate above; lower leaves much smaller, elliptic or cuneate-elliptic, 2 to 4.5 cm. long; peduncle about 25 cm. long, naked or with a single bract, bearing an umbelliform cyme of 3 to 6 heads; pedicels densely spreading-hirsutulous, 1.3 to 5.5 cm. long, subtended by linear bracts 1 to 1.5 cm. long; heads 2 to 2.5 cm wide; disk 7 to (maturity) 13 mm. high, 7 to (maturity) 16 mm. thick; involucre 3-seriate, subequal or slightly graduate, appressed, 5 to 7 mm. high, the outer phyllaries oblong-elliptic to oblong-oval, obtuse, herbaceous throughout or indurate at extreme base, about 3-nerved, rather densely hirsute and ciliate, the inner phyllaries oblong, acute or obtuse, ciliate, nearly glabrous on back, with thin subscarios often yellowish tips; rays about 8, golden yellow, fertile, the lamina oblong-cuneate, emarginate or crenate, 9 to 11 mm. long, 3 to 4 mm. wide; disk corollas yellow, glabrous, 6 to 6.5 mm. long (tube 2 mm., enlarged below, throat 3 mm., teeth 1 to 1.5 mm.); pales oblong, glabrous, acute or acuminate, sometimes 3-lobed, lacerate above, 4.5 mm. long; achenes of ray and disk similar, oblong, hispidulous at least at base, 3 mm. long; pappus of about 22 equal, linear-lanceolate, attenuate, hispidulous awns 5.5 mm. long.

Type in the U. S. National Herbarium, No. 1,120,944, collected on an open pampa at Lake Rogagua, District of Yacuma, Province of Beni,

Bolivia, altitude 305 meters, October, 1921, by H. H. Rusby (Mulford Biological Exploration of the Amazon Basin, No. 2164).

ADDITIONAL SPECIMEN EXAMINED:

BOLIVIA: Abundant in open pampa, San Pedro, near Reyes, altitude 305 meters, October 25, 1921, *Rusby* 1315.

A member of the *Calea cymosa* group, which has previously been known only from Brazil, Uruguay, Paraguay, and Argentina. Its closest relative is probably *C. platylepis* Schultz Bip., which has broader leaves, not noticeably rhombic in outline, and densely griseous-pilosulous beneath.