

Flowers (1)2-4 per axil; bracteoles smaller, at least narrower, up to 12 mm wide; calyx up to 1.5 mm long, irregularly lobed to dentate, or calyx obsolete or rim-like 4

4. Corolla 3-3.5 cm long; calyx obsolete or rim-like (Madagascar) 4

Corolla 2-2.5 cm long; calyx distinct, irregularly lobed or dentate (Mozambique, Tanzania, Zaire, Zambia, Zimbabwe) *P. sacculus* Radkl.
 *P. africanus* S. Moore

The distribution of *Pseudocalyx* is rather disjunct, even more so with the new species *P. libericus*, but this is also seen in other taxa. *Anacalosa (Olaecaeae)* is represented in Asia by 14 species, but it is also present on Madagascar with a single species and in Central Africa with another one. *Greua (Montiniaceae)*, hitherto only known from Madagascar and East Africa, has rather recently been discovered in Congo (Letouzey, 1977). The genus *Bouringia (Leguminosae-Papilionoideae)* is known from Africa by 3 species, one from Upper Guinea, one from Lower Guinea, and one from Madagascar (Hall, 1974). It is expected that further botanical exploration, especially of western Central Africa will yield more examples.

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Pinguicula greenwoodii (*Lentibulariaceae*),
 a new butterwort from Mexico

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Summary. A new species of *Pinguicula* from the Atlantic coast of Mexico, *P. greenwoodii*, is described in the previously monotypic section *Hemphyllum* Casper.

Pinguicula greenwoodii Cheek sp. nov. a *Pinguicula jacksonii* Barnhart corolla 13-14 mm nec 23-35 mm lata, lobis superioribus corollae latioribus quam longioribus nec longioribus quam latioribus, calcar acuto nec truncato differt. Typus: Mexico. *Greenwood* C-1377 (holotypus MEXU1, isotypi K! (spiritus), K!).

Carnivorous, rosette-forming, eventually caespitose, scapose herb. *Stem* short, not branching and with numerous adventitious fibrous roots, the rosettes 6.5-10 cm diam. with 5-8 leaves expanded at anthesis. *Leaves* monomorphic, not modified to form a perennating structure in winter, oblanceolate, rounded at the apex, cuneate at the base, 3-5 x 1.7-3 cm, membranous, the upper surface densely invested with stalked and sessile glandular hairs, margin involute. *Scapes* 1-3, erect, 8.5-14 cm tall, terete, tapering from about 1 mm thick at the base to about 0.5 mm thick at apex, 1-flowered, sprinkled with stipitate glands from base to apex. *Flowers* 2.3-2.5 cm long, including the spur. *Calyx* bilabiate, about 4-5 x 3-4 mm, densely covered with stipitate glands, upper lip divided halfway or three-quarters into 3 lobes, the lobes ovate with a rounded apex; lower lip divided to the middle into two lobes, more oblong than those above. *Corolla* bilabiate, the upper lip with 2 lobes, the lobes rounded, broader than long, 3.5 x 5 mm, the apex rounded to truncate; the lower lip with 3 oblong lobes, the lobes longer than broad, the apex rounded or truncate, the lateral lobes 4-5 x 3.5-4 mm, the central lobe larger, 6 x 4.5 mm, very pale purple-magenta (RHS purple 76B), the throat and spur white with greenish black veins inside and out; outer surface with stipitate glands, inner ± glabrous except for four lines of white bristle-like hairs along the veins in the lower tube, the hairs multicellular, c. 1 mm long; corolla tube obconical, 9-10.5 x 8-9 mm, dorsiventrally compressed, 5-6 mm high; spur cylindrical, aligned with the corolla tube, straight, 9-10.5 mm long, 1 mm wide tapering at the apex to an acute tip. *Stamens* about 2 mm long, the filaments strongly incurved, covered with stipitate glandular hairs; anther thecae confluent. *Ovary* ellipsoid, 1 x 0.5 mm, glabrous; style stout, 0.5 mm long; stigma with the upper lip absent, lower lip suborbicular, 1.5 mm diam., margin ciliate. *Capsule* globose, 2 mm diam.,

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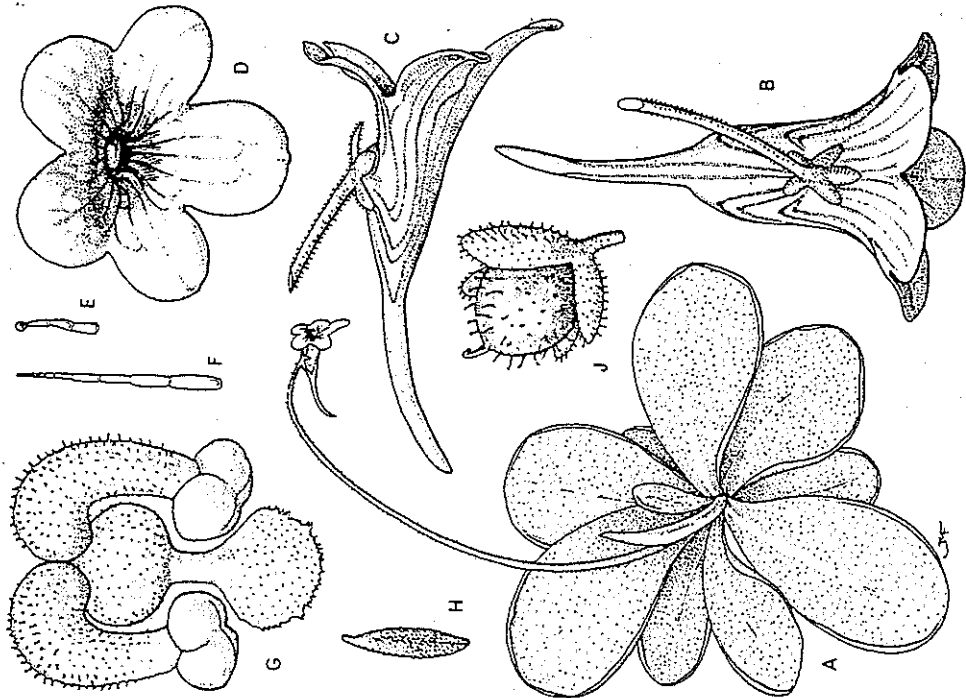


FIG. 1. *Pinguicula greenwoodii*. A habit x 1.5; B flower x 6; C flower, lateral view x 6; D corolla, frontal view x 6; E corolla lip hair x 60; F corolla throat hair x 60; G stamens & pistil x 30; H seed x 36; J fruit x 15. All from *Greenwood G-1377*. Drawn by Mark Fothergill.

PINGUICULA GREENWOODII (LENTIBULARIACEAE), NEW FROM MEXICO 815
 covered with glandular hairs. Seeds narrowly ellipsoid to cylindrical, 1 x 0.25 mm, each with an oblique white process 0.25 mm long at one end.

DISTRIBUTION. MEXICO. Oaxaca, Iacatepec road, 19 April 1987, *Greenwood G-1377* (holotype MEXU; isotypes K! (spirit) and K!).
 HABITAT. Dripping, shaded, limestone cliff in wet montane tropical forest, 1550 m alt., about 30 km from the sea.

Pinguicula greenwoodii clearly falls in the taxonomically isolated section *Homophyllum* Casper (1966: 130). Section *Homophyllum* has until now been monotypic, containing *P. jackii* Barnhart. The bilabiate corolla which lacks a palate and the membranous, monomorphic leaves are characters found in combination only in these two species of *Pinguicula*. They are further united by their unusual broadly obconic and strongly dorsiventrally compressed corolla tubes. The entire corolla of *P. greenwoodii* is only as wide as one corolla lobe of *P. jackii*, the upper petal lobes are longer than wide in *P. jackii* and the tube and spur are much longer and narrower in *P. greenwoodii*.

Pinguicula jackii is restricted to one or two populations in the Trinidad mountains of Santa Clara province of Central Cuba. My colleague David Hunt points out that other phylogeographic links between Cuba and Mexico, though more normally with Yucatan rather than Oaxaca, can be found in the *Commelinaceae* and *Bromeliaceae*. *Pinguicula jackii* is also reported from moist, shaded, calcareous cliffs at medium altitude (800 m).

Mexico is the world's main centre of diversity for *Pinguicula* in terms of both numbers of species and number of sections represented. Exciting new discoveries in *Pinguicula* are most likely to be found here. Since Casper's monograph of the genus (1966) was published, recognizing 46 species, a further 17 species have been described, all from Mexico. Many of these new discoveries belong in section *Orthezanthus* A. DC. where species limits are by no means clear. It may seem curious that many of these discoveries have been made by succulent collectors, but in this section of the genus the species are all part-time succulents, overwintering in the dry season by means of succulent, non-glandular-hairy, *Semprevivum*-like rosettes of leaves.

Many of the Mexican species are highly restricted in their distribution, as *P. greenwoodii* appears to be. Owing to the horticultural interest in this genus, the precise locality is omitted from this description.

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