

BOTANY.—*New tropical American Acanthaceae*.¹ E. C. LEONARD, U. S. National Museum. (Communicated by WILLIAM R. MAXON.)

A critical study of material assembled under the genus *Blechnum* in the U. S. National Herbarium and the herbaria of the Missouri Botanical Garden, the New York Botanical Garden, and Field Museum of Natural History has disclosed four new species, which are described herewith. One of these belongs to *Blechnum*; the others, though bearing a superficial resemblance to *Blechnum*, pertain to three genera that are not very closely related to it.

In the present paper a new form of *Blechnum brownei* is described, also, and *B. pedunculatum* is transferred to *Stenandrium*.

***Blechnum killipii* Leonard, sp. nov.**

Herba, caulibus simplicibus vel ramosis, erectis vel adscendentibus, bifariam hirtellis, pilis retrorsis, infra glabratis; folia petiolata, laminis oblongis vel oblongo-lanceolatis, acuminatis, in petiolum decurrentibus, undulatis vel leviter crenatis, supra sparse hirsutis, pilis albis, costa et venis subtus pubescentibus, pilis minutis curvatis; spicae terminales; bracteae dense imbricatae, ovatae, obtusae vel subacutae, pilosae et ciliatae; bracteolae oblanceolatae, acutae, dense pilosae et ciliatae; calycis segmenta linearia, infra pilosa, ciliata; corolla alba vel lilacina, pubescens; capsulae minute pubescentes, pilis retrorsis; semina brunnea.

Erect or ascending, suffrutescent herbs up to 40 cm high; stems simple or branched, hirtellous, the tips densely so, the hairs lower down arranged in 2 rows, the basal portions sometimes glabrate; petioles up to 1.5 cm long or occasionally as much as 2.5 cm, hirtellous; leaf blades oblong-lanceolate, mostly up to 6 cm long and 2.5 cm wide (occasionally larger), acuminate and often slightly curved toward the blunt tip, narrowed at base and decurrent on the petiole, undulate to shallowly crenate, the costa and veins minutely pubescent (the hairs curved), otherwise glabrous, or the upper surface beset with scattered stiff white hairs about 1 mm long; spikes terminal, up to 4 cm long and about 2 cm in diameter, the rachis

densely hirtellous, the bracts closely imbricate, ovate, up to 12 mm long and 10 mm wide (the lowermost often larger and leaf-like), obtuse to acutish, more or less pilose and ciliate with white straight hairs up to 1.5 mm long, the veins sometimes pubescent with small curved hairs; bractlets oblanceolate, about 10 mm long and 3 mm wide, acute, densely pilose and ciliate with straight white hairs up to 3 mm long; calyx segments linear, pilose and ciliate (basal portions glabrous), the posterior segment 4.5 mm long and barely 0.5 mm wide, the others about 5 mm long and 0.75 mm wide; corolla white or tinged with lavender, finely pubescent, about 1.5 cm long, 5 mm in diameter at throat, the limb about 12 mm broad, the segments obovate, about 5 mm in diameter, shallowly emarginate; capsule 7.5 mm long, 5 mm broad, pubescent, the hairs minute, those of the tip spreading, the others retrorse; seeds flat, brown, about 2 mm in diameter.

Type in the U. S. National Herbarium, no. 1045999, collected on rocks of stream bed in dense forest, Seamens Valley, Portland, Jamaica, altitude 150 to 250 m, February 14, 1920, by William R. Maxon and Ellsworth P. Killip (no. 82).

The following additional specimens, all from Jamaica, have been examined: Woodlands on eastern slopes of John Crow Mountains, *Britton* 4132; Seamens Valley, Portland, *Maxon & Killip* 61a; foothills of John Crow Mountains, *Maxon & Killip* 223; Stony Valley River gully, *Orcutt* 5893; Vinegar Hill, *Perkins* 1245; Spring Bank, $2\frac{1}{4}$ miles west of Port Antonio, *Wight* 91.

Intermediate between *Blechnum brownei* Juss. and *B. blechioides* (Sw.) Hitchc. From the latter it differs in its much smaller corollas (white or lilac, instead of violet), and its densely pilose and ciliate bracts. It is more closely related to *B. brownei*, but in that species the corollas are somewhat smaller and more slender, and are usually purple or pinkish, and the hairs on the bracts and bractlets are much shorter and less numerous.

***Blechnum brownei* Juss. forma *puberulum*
Leonard, f. nov.**

A forma *typica* bracteis puberulis recedit.

¹ Received March 14, 1942.

Type in the U. S. National Herbarium, no. 1451437, collected on dry roadbed along bank of Jean Rabel River, vicinity of Jean Rabel, Haiti, January 30, 1929, by E. C. Leonard and G. M. Leonard (no. 12696).

This appears to be more widely distributed than the typical form of the species, its range extending from eastern and southern Mexico throughout Central America, the West Indies, and northern South America; it occurs also in Guam, Formosa, and the Philippine and Caroline Islands. The typical form apparently is limited to Florida, Oaxaca, Veracruz, the Yucatan Peninsula, British Honduras, Honduras, Costa Rica, several of the West Indian Islands, and the Guianas. Occasional intermediate specimens with slightly downy bracts are to be found in regions where both grow together. From data given on the labels, there is no indication that the puberulent form results as an environmental response. It is as likely to occur in moist situations as in dry arid places.

***Herpetacanthus panamensis* Leonard, sp. nov.**

Herba, caulibus simplicibus vel parce ramosis, adscendentibus, bifariam pubescentibus, pilis retrorsis, infra glabratibus; folia pauca, breviter petiolata, laminis ellipticis, apice acutis vel subobtusis, basi angustatis in petiolum decurrentibus, integris vel undulatis, glabris, cystoligeris, costa et venis subtus pubescentibus, pilis minutis curvatis; spicae plures, terminales et subterminales; bracteae laxae imbricatae, ovatae vel ellipticae, acutae, subglabrae, ciliatae; bracteolae oblongae, acuminatae, glabrae, ciliatae; calyx subinaequalis, segmentis glabris, ciliatis; corolla pilosula; capsulae glabrae.

Herbaceous; stems ascending, up to 20 cm high, simple or sparingly branched, pubescent in 2 lines, the hairs minute, jointed, retrorsely curved, or the lower portion of the stem glabrate; leaves few, usually about 4, the blades elliptic, up to 10 cm long and 4 cm wide, acute or obtusish at apex (the tip blunt), narrowed at base and decurrent on the short petiole (2 to 5 mm), entire or undulate, glabrous except for the petiole, costa and veins beneath, these pubescent with minute curved hairs; cystoliths prominent on the upper surface; spikes several, up to 4 cm long, 1 to 1.5 cm in diameter, forming a terminal panicle, the rachis sparingly

pubescent, with minute curved hairs; bracts rather loosely imbricate, ovate to elliptic, up to 12 mm long and 7 mm wide, acutish, thin, glabrous or subglabrous, sparingly ciliate, the hairs about 0.5 mm long; bractlets oblong, 7 mm long, 0.25 to 1.5 mm wide, acuminate, glabrous, ciliate; calyx about 6 mm long, slightly asymmetric, the segments subulate, 4 to 5 mm long, the larger ones about 0.5 mm wide, the others slightly narrower, all tipped by 1 or 2 white hairs up to 0.5 mm long, ciliate with minute gland-tipped hairs, otherwise glabrous; corolla 8 mm long, the lips about 5 mm long, pilosulous, the upper one ovate, acuminate, minutely bidentate, the lower one 3-lobed, the lobes rounded, about 3 mm long, the tube white-pilose within; stamens typical of the genus; capsules glabrous, pointed at apex, 9 mm long, 3 mm broad, the solid stipitate base 4 mm long; mature seed not seen; retinacula rounded at apex.

Type in the U. S. National Herbarium, no. 1405734, collected in deep shade in the Changuinola Valley, Panama, March 14, 1924, by V. C. Dunlap (no. 554); isotype in herbarium of Field Museum of Natural History, no. 708196. Standley's no. 40851, collected in wet forest of Barro Colorado Island, Canal Zone, November 1925, is also this species.

Herpetacanthus, belonging to the subtribe Isoglossinae, is one of several genera having a 2-lipped corolla and four stamens. Among these it is readily recognized by the peculiar character of the stamens, the posterior pair being 2-celled (with one of the cells distinctly superposed), the anterior pair 1-celled. Eight species have previously been known, all from Brazil. *H. panamensis* is probably nearest *H. schulzii* but can be separated readily by its shorter spikes (much shorter than the subtending leaves) and by its glabrous capsules. The color of the corolla can not be ascertained from the herbarium material but may be assumed to be white, as is usual in the genus.

***Justicia herpetacanthoides* Leonard, sp. nov.**

Suffrutex, caulibus erectis vel adscendentibus, bifariam pilosis; folia breviter petiolata, laminis ovatis, apice rotundatis, vel obtusis vel emarginatis, basi angustatis, integris, pilosis; spicae multae, terminales et subterminales; bracteae imbricatae, ovatae, obtusae vel

subacutae, hirsutae, ciliatae; bracteolae oblanceolatae; calycis segmenta lanceolata, ciliata; corolla alba, pubescens; capsulae retrorse puberulae; semina fusca.

Suffrutescent herb up to 30 cm high or more; stems branched, erect or ascending, pilose in 2 lines, the hairs spreading or slightly retrorse; petioles up to 1 cm long, pilose; leaf blades ovate, up to 4 cm long and 2.5 cm wide, rounded, obtuse or emarginate at apex, narrowed at base, rather firm, entire, pilose, the hairs diminishing in size and number toward tip of blade; spikes up to 4 cm long and 1.5 cm in diameter, numerous, terminal and subterminal, forming a panicle, the rachis hirtellous, the bracts ovate, up to 8 mm long and 6 mm wide, obtuse to acutish, rounded at base to a short flat petiole, hirsute, ciliate, the marginal hairs about 0.75 mm long; bractlets oblanceolate, up to 6 mm long and 2.5 mm wide, otherwise similar to bracts; calyx segments lanceolate, 3.5 mm long, about 1 mm wide, ciliate, faintly 3-nerved; corolla 8 mm long, white, pubescent, the lower anther cells strongly calcarate; capsule 5 mm long, 2 mm broad, puberulent, the hairs spreading at tip, retrorse toward base; seeds dark brown, acutish, slightly more than 1 mm broad and long.

Type in the U. S. National Herbarium, no. 1493986, collected along a rocky trail at Chichen Itza, Yucatan, June 23, 1932, by W. C. Steere (no. 1510).

Related to *Justicia lundellii* Leonard but easily distinguishable by its larger and more numerous spikes and its larger, ovate bracts and corollas. Moreover, it seems not to blacken in drying, as does *J. lundellii*.

***Beloperone blechioides* Leonard, sp. nov.**

Suffrutex, caulibus pubescentibus, pilis albis curvatis retrorsis, infra glabratibus; folia petiolata, laminis lanceolato-ovatis, acutis, subapiculatis, basi angustatis, in petiolum decurrentibus, sparse pubescentibus et ciliatis; spicae terminales vel subterminales; bracteae ovatae, obtusae vel subacutae, dense imbricatae, pilosae, dense ciliatae; bracteolae oblongolanceolatae; calycis segmenta lanceolata, trinervia, tenuia, ciliata; corolla alba, pauca purpureo-maculata; capsulae retrorse hirtellae.

A suffrutescent herb up to 40 cm high or more; stems shallowly grooved, pubescent with white retrorsely curved hairs about 0.75 mm long, these arranged more or less in 2 rows, the lower portions of the stem sometimes glabrate; petioles up to 2 cm long, the pubescence a mixture of pointed, spreading, variously curved hairs and shorter glandular ones ending in flat expanded tips; leaf blades lance-ovate, up to 9.5 cm long and 4.5 cm wide, acute at apex (the tip blunt and subapiculate), acute or obtuse at base and decurrent on the petiole, dull green, undulate, sparingly pubescent and ciliate, the hairs 0.5 to 0.75 mm long, on the lower surface confined chiefly to costa and nerves; cystoliths conspicuous under lens; spikes terminal and subterminal, about 2 cm long and 2 cm in diameter, each subtended by a pair of small leaves (up to 3 cm long and 1.5 cm wide), the rachis and peduncle pilose; bracts closely imbricate, quadrifarious, ovate, obtuse to acutish, thin, dull green, pilose, densely ciliate, the hairs white, about 1 mm long; bractlets oblong-lanceolate, about 8 mm long and 2.5 mm wide, otherwise similar to bracts; calyx deeply 5-lobed, the segments lanceolate, about 5 mm long and 1.5 mm wide near base, thin, green, 3-nerved, ciliate; corolla about 2 cm long, white, spotted with purple around the throat and lips, pubescent, the lobes about 5 mm long, ciliate; capsule 11 mm long and 4 mm broad, hirtellous, the hairs spreading at the tip, those of the lower portion retrorse; mature seed not seen.

Type in the herbarium of Field Museum of Natural History, no. 1035787, collected on moist shady slopes of a barranca near a stream on Montaña Nonojá, 3 to 5 miles east of Camotán, Department of Chiquimula, Guatemala, altitude 600 to 1800 m, November 11, 1939, by Julian A. Steyermark (no. 31740).

Except for its corollas, typical in every respect of *Beloperone*, this species could be mistaken for *Blechum*. The nature of growth and the exact height of the plant can not be ascertained from the present material, which consists of a single branch about 40 cm long. Nor is the exact length of the mature corolla known, the description being drawn from an immature flower extracted from one of the spikes.

Stenandrium pedunculatum (Donn. Sm.)

Leonard, comb. nov.

Blechnum pedunculatum Donn. Sm. Bot. Gaz. 49: 457. 1910.

The present species, founded on specimens collected near Gualan, Guatemala, by Charles C. Deam (no. 6277), is very closely allied to *S. mandioccanum* Nees, of southern South America. The two have much the same appearance, except that *S. pedunculatum* is usually larger with stronger suffrutescent stems. The seeds of both species are covered with peculiar

retrorely barbed hairs, these shorter in *S. mandioccanum* than in *S. pedunculatum*. Distinguishing characters, however, are found in the capsules and in the pubescence of the branchlets. In *S. pedunculatum* the capsules are entirely glabrous and the pubescence of the branchlets is composed of rather straight, whitish, spreading hairs. In *S. mandioccanum* the capsules are pubescent, though sparingly so, with minute mostly retrorse hairs, and the stems are densely pubescent with small, brown, curved hairs or are even subtomentose.

ZOOLOGY.—*New species of urocoptid land mollusks from Mexico.*¹ PAUL BARTSCH, U. S. National Museum.

The United States National Museum has recently received a collection of Mexican land shells from Miss Marie E. Bourgeois, of Mexico, D.F., among which are two new species of the family Urocoptidae. A third species, which was collected by J. Mathewson in 1898 and which has come to the National Museum through the Shimek collection, also proves to be a remarkable new member of the family. The three are here described and figured.

Coelostemma bourgeoisana, n. sp.

Fig. 1

Shell small, white, early whorls slightly horn colored, cylindric-conic, with the summit tapering rather acutely toward the apex. The nucleus consists of about 2 well-rounded turns, which are microscopically granulose. The post-nuclear whorls are slightly rounded and marked by retractorily slanting axial ribs, which are slightly variable in strength and spacing. Suture moderately constricted. Base well rounded, narrowly, openly umbilicated, and marked by the continuation of the axial ribs. The last whorl is solute for about one-tenth of a turn. The aperture is irregularly triangular; peristome reflected and somewhat thickened. The columella is rather large, equal to about one-fourth of the width of a whorl. It is heavier in the early whorls and becomes materially re-

duced in the last and is marked by numerous very slender, almost hairlike, granulose axial riblets.

The 30 specimens before me were collected by Miss Marie E. Bourgeois on a hillside under limestone rocks at Ixtapan de la Sal, State of Mexico, in May 1939.

The type, U.S.N.M. no. 536039, has 15.3 whorls and measures: Height, 15.4 mm; greatest width of spire, 5.0 mm. Paratypes: U.S.N.M. no. 536040.

The exceedingly fine, hairlike, granulose axial riblets of the columella will distinguish this from the other members of the group.

Haplocion mariae, n. sp.

Fig. 2

Shell small, pupoid, horn colored, covered with a curious film, almost suggesting a more or less dehiscent periostracum, tapering gently toward the apex. The nucleus consists of about 1.5 rounded, microscopically granulose turns. The early succeeding whorls are well rounded; the later ones are a little less so. They are crossed by strong, decidedly retractorily curved axial ribs, which are about half as wide as the spaces that separate them. Suture strongly constricted. Periphery well-rounded. Base short, narrowly perforate; the last whorl solute for about one-tenth of a turn. Aperture irregularly triangular; peristome expanded and reflected. The columella is rather slender and apparently solid in the penultimate turn and on the three or four preceding it where it is also somewhat twisted. In the whorls posterior

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