

plerumque oblongae vel deltoideo-ovatae obtusae breviter petiolatae obscure articulatae, marginibus herbaceis nec hyalinis leviter vel nullo modo revolutis. Nervatio pinnata, venulis liberis e costula basin versus nigrescente superne viridi angulo acuto egredientibus 1-3-furcatis, ramulis ultimis apicem versus (venulae longitudinis ad quartam partem) leviter incrassatis sporangiferis, soros angustos sublineares formantibus. Sporangia brevissime stipitata, annulo brevi ex comparatione lato e cellulis 10-13 composito. Sporae circumscriptione circulares vel obtuse subtrilobatae ad 72μ diametro, jugis tenuibus humilibus brevibus fuscis flexuosis vel fere rectis sparsis leviter asperatae.

MEXICO.—SONORA: Huehuerachi, 4000 ft. alt., Dec. 7, 1900, *Hartman* (Lumholtz Exped.) 298 (G, US, TYPE); same locality, Dec. 20, 1890, *F. E. Lloyd* (Lumholtz Exped.) 489 (G).

N. Lumholtzii is probably most nearly related to *N. Jonesii* Maxon, from which it differs in its relatively slender, black, somewhat glaucous stipe and rachis, its strictly bipinnate habit, without pinnatifid tip or lobed terminal segment at the apex either of the lamina or the pinnae, and the shape, size, and texture of the pinnules. From *Pellaea microphylla*, which it suggests in its strictly imparipinnate habit, it differs in the color of stipe and rachis, the simpler architecture of the lamina, the non-cordate bases of the pinnules, and the only lightly rugose spores.

2. STUDIES IN THE BROMELIACEAE,—X.

BY LYMAN B. SMITH.

Pitcairnia biflora, spec. nov., e fragmentis solum cognita, florifera 4 dm. alta; folio unico cognito 4 dm. longo, integro, longe petiolato, petiolo gracillimo, sparse pallido-lepidoto; lamina lineari-lanceolata, 22 mm. lata, filiformi-acuminata, glabra, subtus pallida; scapo gracillimo, sparse lepidoto, rubro; scapi bracteis valde remotis, late ovatis, acuminatis; inflorescentia laxe biflora; bracteis florigeris late ovatis, acuminatis, membranaceis, rubris, quam pedicellos bene brevioribus; pedicellis gracilibus, 1-2 cm. longis; floribus erectis, glabris; sepalis anguste ellipticis, obtusis, 25 mm. longis, ecarinatis; petalis angustis, obtusis, 6 cm. longis, basi ligulatis, rubris vel albis; ovario $2/3$ supero; ovulis caudatis. Tab. I, fig. 1-3.

PERU: SAN MARTIN: in semi-shade, Jesus del Monte, near Moyobamba, alt. 900 m., Aug. 1938, *Sandeman s.n.* (Kew, TYPE; phot. G).

Owing to the scantiness of the material it is not possible to tell whether or not the leaves are dimorphic, but in either case *Pitcairnia biflora* is quite unlike any previously known species. It seems most nearly related to *P. subpetiolata*, but not very close to that.

Pitcairnia patentiflora, spec. nov., acaulis, florifera metralis; foliis homomorphis, subbulbose rosulatis, 3–7 dm. longis, vaginis late ovatis, ca. 2 cm. latis, laminis angustissime triangularibus, acuminatis, 13 mm. latis, juvenile utrinque pruinose albido-lepidotis, dentibus gracilibus rectis ad 2 mm. longis laxe armatis; scapo gracili, glabro; scapi vaginis infimis foliaceis, internodia superantibus, supremis lanceolatis, integris, quam internodia multo brevioribus; inflorescentia laxe subtripinnatim paniculata, glabra; bracteis primariis lanceolatis, haud ultra 15 mm. longis; ramis laxissime racemosis, ad 12 cm. longis; bracteis florigeris lanceolatis, acutis, 5 mm. longis; floribus patentibus; pedicellis gracilibus, 15 mm. longis; sepalis angustissime triangularibus, acuminatis, 2 cm. longis; petalis linearibus, acutis, quam sepala paulo longioribus, rubris, nudis; ovario $2/3$ supero; ovulis alatis.—*P. nuda* Bak. sensu L. B. Smith in Bull. Torr. Bot. Club, lviii. 340 (1931), non Bak. (1881). Tab. I, fig. 4.

VENEZUELA: AMAZONAS TERRITORY: rocky top of Esmeralda Ridge, Esmeralda, alt. 100 m., Oct. 1928, *G. H. H. Tate 213* (NY, TYPE; phot. G).

This species is distinguished from *Pitcairnia nuda* and *P. pruinosa* by its short petals and from *P. tarapotensis* by its homomorphic leaves. *Tate 857* from the summit of Mt. Duida closely matches the leaves of *P. patentiflora* but is sterile so that its identity is not certain.

Tillandsia capitata Griseb. var. ***guzmanioides***, var. nov., acaulis, florifera ad 5 dm. alta; foliis cyathiformi-rosulatis, inflorescentiam subaequantibus, minutissime denseque lepidotis; vaginis magnis, ellipticis, atro-castaneis; laminis anguste triangularibus, longe acuminatis, planis, ca. 2 cm. latis; scapo leviter curvato, 6 mm. diametro, glabro; scapi bracteis foliaceis, dense imbricatis, supremis inflorescentiam superantibus; inflorescentia perdense ellipsoidea, 8 cm. longa, bipinnatim paniculata; bracteis primariis eis scapi similibus sed brevioribus, spicis axillaribus bene occultantibus; spicis bifloris, basi bracteas steriles binas late alatas

gerentibus; bracteis florigeris ovatis, acutis, sepala subaequantibus, carinatis, membranaceis, dense adpresseque brunneo-lepidotis; sepalis lanceolatis, acutis, ad 27 mm. longis, membranaceis, dense lepidotis; petalis 35 mm. longis, verisimiliter tubulose imbricatis; staminibus ignotis. Tab. I, fig. 5-7.

✓ MEXICO: CHIAPAS: Mt. Tacana, alt. 2000-4038 m., Aug. 1938, *Matuda* 2308 (G, TYPE; Mich.).

This variety differs from typical *Tillandsia capitata* in its densely lepidote sepals, but as *T. capitata* in rare instances shows a very few scales on the sepals, it seems best now not to call the Matuda plant a distinct species. A full description is given in case further collections should make the differences seem stronger than varietal. The variety also shows a tendency to brown rather than gray indument and to strict rather than recurving primary bracts.

Tillandsia dasyliiriifolia Bak. in Journ. Bot. xxv. 304 (1887); L. B. Smith in North American Flora, xix. 127 (1938).

The type locality of this species was given originally as "Holbox Island, Bay of Honduras," and has usually been cited since as from Honduras. Actually Holbox Island is off the northeast corner of Yucatan. The error lies in the use of an incorrect printed label for Gaumer's collections of 1886. As Hemsley shows in his *Biologia Centrali-Americana*, iv. 111, Gaumer collected on the islands of Holbox, Mugeris, Cozumel and Ruatan. These islands are listed from north to south, presumably in the order that Gaumer visited them, and Ruatan is the only one of the four that is off the coast of Honduras.

Catopsis triticea, spec. nov., dioica, acaulis, florifera 2-3 dm. alta; foliis 8-12 cm. longis, obscure punctulato-lepidotis, anguste albido-marginatis; vaginis ellipticis, magnis; laminis anguste triangularibus, acuminatis, basi ca. 15 mm. latis; scapo erecto, gracili, elongato, folias longe superanti; scapi bracteis imbricatis, late ovatis, caudatis vel apiculatis; plantae masculinae inflorescentia 6.5 cm. longa, basi pauperrime ramosa; bracteis primariis ovatis, apiculatis, quam spicas axillares bene brevioribus; spicis densis; bracteis florigeris ovatis, acutis, rectis, sepala subaequantibus, valde nervatis; floribus ad 10 mm. longis; sepalis bene asymmetricis, oblongis, extensis 9 mm. longis; petalis ad 3 mm. exsertis; staminibus valde inaequalibus; plantae femineae inflorescentia simplicissima, densa, 6-8 cm. longa; bracteis florigeris 12 mm. longis, sepala superantibus; floribus ad 13 mm. longis; sepalis

latissime obovatis, asymmetricis, 10 mm. longis; stylo 1 mm. longo. Tab. I, fig. 8-10.

MEXICO: CHIAPAS: Mt. Ovando, alt. 1250-2370 m., July 1938, *Matuda 2570* (Mich., TYPE; G).

In my treatment in the North American Flora, staminate plants of *Catopsis triticea* run down to the vicinity of *C. Wangerini*. They differ from *C. Wangerini* in their elongate scapes, subsimple inflorescence and larger flowers. Pistillate specimens run down to the vicinity of *C. cucullata*, from which they differ in their erect inflorescence and straight floral bracts.

Nidularium rubrum Beer var. **albiflorum**, var. nov., corolla omnino alba, ex sicco ad 32 mm. longa.

BRAZIL: SÃO PAULO: São Paulo, Feb. 1938, *Doering in Inst. Biol. S. Paulo 39201* (S. Paulo, TYPE; phot. G).

EXPLANATION OF PLATES.

PLATE I.

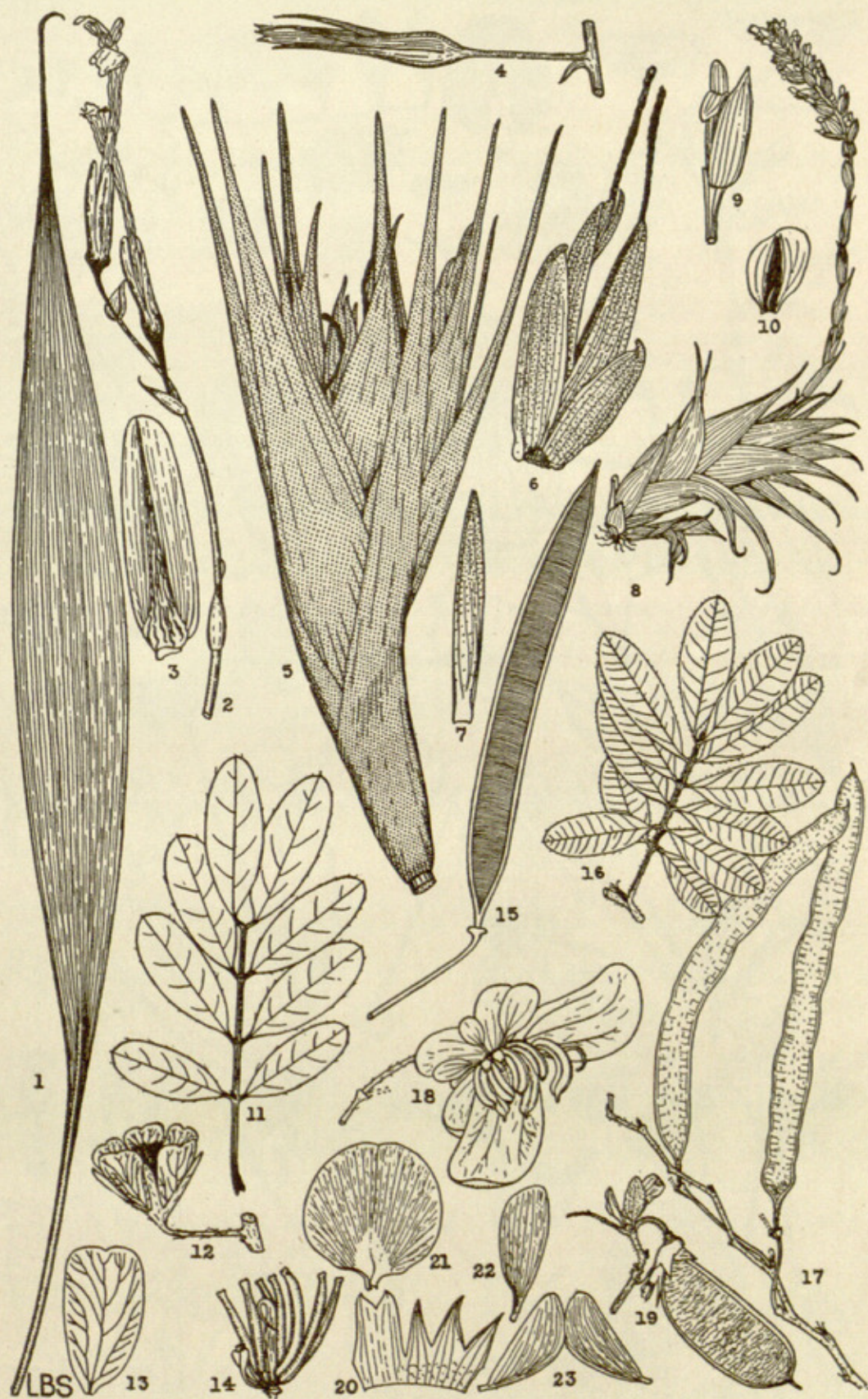
- Fig. 1. PITCAIRNIA BIFLORA L. B. Smith (*Sandeman s.n.*), leaf $\times \frac{1}{2}$.
- Fig. 2. Same, upper scape and inflorescence $\times \frac{1}{2}$.
- Fig. 3. Same, expanded sepal $\times 1$.
- Fig. 4. PITCAIRNIA PATENTIFLORA L. B. Smith (*Tate 213*), flower $\times 1$.
- Fig. 5. TILLANDSIA CAPITATA Griseb. var. GUZMANIOIDES L. B. Smith (*Matuda 2308*), inflorescence $\times \frac{1}{2}$.
- Fig. 6. Same, spike $\times 1$.
- Fig. 7. Same, posterior sepals $\times 1$.
- Fig. 8. CATOPSIS TRITICEA L. B. Smith (*Matuda 2570*), pistillate plant $\times \frac{1}{4}$.
- Fig. 9. Same, flower $\times 1$.
- Fig. 10. Same, expanded sepal $\times 1$.

3. PLANTAE MEXICANAE,—I.

BY LYMAN B. SMITH AND BERNICE G. SCHUBERT.

THE paper here presented is the first in a proposed series of studies on Mexican plants. It is the purpose of the authors to publish in this form, from time to time, notes on species previously described but poorly defined or misunderstood, or descriptions of new entities, with illustrations wherever possible.

In this paper new species of *Cassia*, *Brongniartia*, *Begonia*, *Ipomoea* and *Breweria* are presented and reidentification is made of an early-described *Begonia*. The larger number of new species is described from material collected by Mr. G. B. Hinton, although



Figs. 1-3, *PITCAIRNIA BIFLORA* L. B. Smith; 4, *PITCAIRNIA PATENTIFLORA* L. B. Smith; 5-7, *TILLANDSIA CAPITATA* Griseb. var. *GUZMANIOIDES* L. B. Smith; 8-10, *CATOPSIS TRITICEA* L. B. Smith; 11-15, *CASSIA STENOSEPALA* Smith & Schubert; 16-18, *CASSIA TORTUOSA* Smith & Schubert; 19-23, *BRONGNIARTIA PROTERANTHERA* Smith & Schubert.



Smith, Lyman B. 1939. "Studies in the Bromeliaceae,--X." *Contributions from the Gray Herbarium of Harvard University* (127), 17–20.

<https://doi.org/10.5962/p.336229>.

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