

AN ANNOTATED LIST OF THE ACANTHACEAE COLLECTED BY  
MISS W. M. A. BROOKE ON HER TRAVELS IN BOLIVIA

BY

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*Introduction*

Some years ago the Keeper of Botany of the British Museum (Natural History) asked me to identify for his institute a set of Acanthaceae which Miss W. M. A. Brooke had collected in Bolivia in the years 1949 and 1950. <sup>1)</sup> The localities which were visited by this marvellous collector are found in a zone extending from the eastern shore of Lake Titicaca more or less parallel to the Brazilian frontier, though at a rather large distance from it, to the southernmost part of the Department of Santa Cruz (see the map in the paper by J. A. CRABBE, "Bolivian Pteridophytes collected by Winifred Brooke" in *Brit. Fern Gaz.* 9: 309-320. 1967).

The set sent by the British Museum consisted of 17 specimens, but a smaller set received at a later date by the Utrecht Herbarium proved to contain some field numbers which I had not yet seen. These specimens too are included in the enumeration given below. In the set of the British Museum four as yet undescribed species were represented, viz. *Stephanophysum brookeae*, *Sarotheca glutinosa*, *S. boliviensis* and *Lophothecium boliviense*, and in that of the Utrecht Herbarium one more, viz. *Stephanophysum macrandrum*, was found. For some species which most authors so far had included in the genera *Ruellia* and *Justicia* new combinations are proposed, and for a group of species which Nees had referred to his genus *Dipteracanthus*, one of those which by later authors were sunk in *Ruellia*, a new genus was created.

It is perhaps appropriate to explain here once more why I reject the very wide delimitation of the genera *Ruellia* and *Justicia* accepted by Bentham in Bentham and Hooker's "Genera Plantarum" and afterwards on Bentham's example by Lindau in his monograph of the Acanthaceae in Engler and Prantl's "Natürliche Pflanzenfamilien", and why I find it desirable to return to the standpoint adopted by Nees in the "Flora Brasiliensis" and in De Candolle's "Prodromus". Bentham was ap-

<sup>1)</sup> My study of these plants was completed already some years ago, but the publication of the results was delayed because the original manuscript was lost.

parently influenced by Anderson's work on the Indian Acanthaceae, but these two groups are in India in comparison with Brasil but poorly represented and the species occurring in India moreover do not show such a wide diversity of form as those found in tropical America. It should also be taken into consideration that Bentham may have been somewhat biased with regard to Nees because of the latter's philosophical ideas which to the enthusiastic Darwinians of that time must have looked outmoded and sterile, and perhaps also to some extent because of his political activities, which the botanists of his period, who in the main belonged to the rather conservative well-to-do middle class, will have experienced either as foolish or as shocking.

That the genera recognized by Nees in the *Ruellinae* (see for the delimitation of this subtribe my "Notes on the Acanthaceae of Surinam" in *Rec. d. trav. bot. Néerl.* 35: 130-176, 1938; BREMEKAMP, C. E. B. and N. E. NANNENGA-BREMEKAMP, "A preliminary survey of the *Ruellinae* of the Malay Archipelago and New Guinea" in *Verh. Kon. Ned. Akad. v. Wetensch., afd. Natuurk.*, 2<sup>nd</sup> Sect. 45 (1), 1948 and my paper on the "Delimitation and Subdivision of the Acanthaceae" in *Bull. Bot. Surv. of India* 7: 21-30, 1965) and in the *Justiciinae* (as defined by me in the last mentioned paper; see also C. T. RIZINI, "Contribuição ao conhecimento da tribo *Justicieae*" in *Arq. do Jard. Bot. Rio de Janeiro* 9: 37-67, 1949) were for the greater part fully natural ones, which means that they differed from each other in characters of more or less the same kind as those which in the other tribes and subtribes were used for the distinction of now generally accepted genera, will have to be admitted by every serious student of these groups, and was, moreover, fully confirmed when characters like the structure of the pollen grains and of the testa, of which the taxonomic importance was not yet recognized in the time of Nees, were taken into consideration. For this reason it is much to be regretted that the far too wide delimitation of the genera *Ruellia* and *Justicia* adopted by Bentham and his followers was accepted once more by E. C. LEONARD in his elaborate study of the Acanthaceae of Colombia (*Contr. Un. States Nat. Herb.* 31: 1-773, 1951-1958), as this will necessitate a thorough revision of the parts dealing with these two groups. In this connection it is perhaps worthwhile to point out that in some other instances too this author appears to have attached too much value to the authority of his predecessors, so e.g. in that of the genus *Megaskepasma* Lindau, which is left by him in the subtribe in which it was placed by its author, viz. in the *Porphyrocominae*. He overlooked therefore the fact that LINDAU (*Bull. Herb. Boiss.* 5: 666, 1897) did not give any argument for this decision. The subtribe *Porphyrocominae* was based by this author exclusively on the shape and structure of the pollen grains, and the pollen grains of the genus *Megaskepasma* are described by him as "globosa verrucis annuliformibus munita poris nullis", which means that they are of a type which is not found in any other genus referred by him to this

subtribe; in fact, pollen grains of this kind have so far not been seen in any of the genera which on good grounds were included in the Acanthaceae. As the fruit and the seed of the only representative of this genus are still unknown and as it can not be placed in any of the tribes or subtribes of this family on account of its other characters, it is for the moment impossible to decide whether it belongs to the Acanthaceae or not. However, there are serious grounds to doubt this. The anthers are bitheous, so that if the genus really belongs to the Acanthaceae, it can not be referred to the *Acanthoideae*, the first of the two subfamilies in which the Acanthaceae are divided by me, but as, according to Leonard, cystoliths are absent, it can not belong to the *Ruellioideae* either. Moreover, if the drawing given by Leonard is correct, there is at each node of the spiciform inflorescence but a single bract, and this is a feature not found in any true Acanthacea. It is found regularly in the *Nelsonieae*, a tribe which formerly was included in the Acanthaceae, but which was transferred by me to the Scrophulariaceae: in this tribe, however, the pollen grains are of a totally different type. Our conclusion with regard to the position of this genus therefore is: so long as the fruit and the seed are unknown, it is impossible to decide whether the genus *Megaskepasma* belongs to the Acanthaceae or not. However, if the structure of fruit and seed would prove to be of the kind found in the Acanthaceae, it can, at least if the data provided by Lindau and Leonard are correct, not belong to either of the two subfamilies recognized by me, and should therefore be referred to a subfamily of its own.

### *List of the Species*

(In order to save space the locality where the specimen was collected is given only when the specimen belongs to a new species.)

#### Acanthoideae

#### Aphelandreae

6050. *Aphelandra* spec. nov. aff. *acanthus* Nees (DC. Prodr. 11: 302, 1847), *huilensis* Leonard (Contr. Nat. Herb. 31 (2): 146, 1953) et *gilva* Leonard (ibid. 31 (3): 704, 1958) sed foliis sessilibus a speciebus his diversa. As the flowers were glued to the sheet, they could not be studied in detail, and for this reason it seemed better to leave this species unnamed.

5743. *Aphelandra* spec. nov. aff. *phobera* Leonard (Contr. Nat. Herb. 31 (2): 143, 1953) sed bracteis longioribus et spica brevi ab ea certe diversa. As no flowers are present, it seemed better to leave this species too unnamed.

5766. *Stenandrium* (*Sphaerostenandrium*) *dulce* (Cav.) Nees

5848. idem

## Ruellioideae

## Ruelliace, Ruelliinae

5558. *Ulleria geminiflora* (H.B.K.) Brem. n. comb.; *Ruellia geminiflora* H.B.K., Nov. Gen. et Spec. 2: 195 (240), 1817; *Dipteracanthus geminiflorus* Nees in Martius, Fl. Bras. 9: 40, 1847.

In his treatment of the family in the "Flora Brasiliensis" and in De Candolle's "Prodromus" Nees united in his genus *Dipteracanthus* all *Ruelliinae* with axillary flowers and distinctly unguiculate capsules, but as I have already pointed out in "A preliminary survey of the Ruelliinae of the Malay Archipelago and New Guinea", it seems more appropriate to restrict this genus to the group of African, Asiatic and Australian species to which the type species belongs and which differ from the American ones in the subringent corolla and in the sparsiporous pollen grains provided either with a reticulum consisting of rather small and not very deep meshes (brochi) with straight rims (muri) or with a number of spines corresponding to the pillars found in the other species in the corners of the brochi. In the American species of which the pollen grains have been studied, the latter were always found to be 3-porous and provided with a reticulum consisting of less numerous but larger and deeper brochi with more or less distinctly curved muri; however, in their other characters these species show a wide range of variability. His subgenus *Aphragmia* (in the "Prodromus" called "series *Paniculati*") which he originally had given generic rank, viz. in Endl., Gen. Pl. p. 699, 1839, was returned by me in the above cited paper to its original position, and the group of species included in his "*Hygrophiloides*" should probably also be given generic rank, but whether all the American species referred by him to the "*Genuini*" can be included in the new genus described below, is as yet uncertain. For the moment it seems safer to restrict the latter to the species which in the "Prodromus" were referred by him to the "*ebracteolati*" (species 63-77).

*Ulleria*<sup>1)</sup> Brem. n. gen. *Ruelliinarum*, floribus axillaribus et breviter pedicellatis, calycis lobis angustis et acutis, corollae tubo tereti faucibus ampliatis brevioribus, lobis patentibus, capsula unguiculata, seminibus margine pilis mucosis instructis cum *Dipteracantho* Nees emend. Brem. congruens, bracteolis numquam foliaceis nec calyce longioribus sed angustis et plerumque calyce brevioribus, interdum ad nihilum vel fere ad nihilum redactis, corollae faucibus infundibuliformibus, non subringentibus, granulis pollinis 3-poris quae semper reticulo e brochis magnis cum muris altis et curvatis composito instructae sunt ab eo diversum.

Herbae erectae vel ascendentes. Folia sessilia vel petiolata. Flores in axillis foliorum typicorum solitarii, breviter pedicellati; bracteolae parvae et angustae vel fere ad nihilum redactae. Calyx 5-partitus; lobi aequales,

<sup>1)</sup> The name *Ulleria* is an anagram of *Ruellia*.

angusti et acuti. Corollae tubus teres; fauces infundibuliformes, tubo pauce longiores; lobi aequales, suborbiculares, patentes. Stamina 4, ad faucium basin inserta, didynamia, inclusa; antherae bithecae, thecis aequalibus vel subaequalibus, basi obtusis. Granula pollinis globosa, 3-pora, reticulata; brochi magni, ambitu irregulares; muri alti et curvati. Staminodium impar deest. Torus annularis, parvus. Ovarium utroque loculo ovulis 2 vel plus quam 2 instructo; stylus saepe hirtellus; stigmatibus lobus posticus rudimentalis. anticus linearis vel oblongus. Capsula unguiculata, valvulis seminibus duobus vel plus quam duobus instructis. Semina lenticularia, margine pilis mucosis vestita.

Distributum in America Centrali et Australi.

Typus: *Ulleria geminiflora* (H.B.K.) Brem. n. comb.; *Ruellia geminiflora* H.B.K., Nova Gen. et Spec. 2: 195 (240), 1817; *Dipteracanthus geminiflorus* (H.B.K.) Nees in Mart., Fl. Bras. 9: 40, 1847.

Some other species: *Ulleria angustifolia* (Nees) Brem. n. comb., *Dipteracanthus angustifolius* (Nees) Brem. in Rec. d. trav. bot. Néerl. 35: 157, 1938; *D. geminiflorus* (H.B.K.) Nees var. *angustifolius* Nees in DC., Prodr. 11: 137, 1847; *Ulleria surinamensis* (Miq.) Brem. n. comb.; *Dipteracanthus surinamensis* Miq. in Linnaea 22: 471, 1849.

5754. *Ulleria* sp. nov. statura et foliis parvis a speciebus aliis distincta; ob paupertatem specimenis haud nominanda

5789. *Ulleria* sp. probabiliter cum 5754 conspecifica; specimen incompletum

6616. *Stemonacanthus euanthus* (Lindau) Brem. n. comb.; *Ruellia euantha* Lindau in Bull. Herb. Boiss. 3: 366, 1895

6766. *Arrhoxylum kuntzei* (Lindau) Brem. n. comb.; *Ruellia kuntzei* Lindau in Bull. Herb. Boiss. 3: 365, 1895

5577. *Stephanophysum brookeae* Brem. n. spec., maxime ut *St. molle* Nees sed foliis subintegris et minoribus, numero minore nervorum percursis, calycis lobis linearibus ab eo recedens; staminibus exsertis cum *St. macrande* Brem. (vide infra) congruens, sed ab eo ramorum foliorumque indumento et insuper longitudine bracteolarum et calycis lorum valde diversum.

Fruticulus. Rami novelli primum tomentosi, acute quadrangulares, circ. 1.5 mm diam., deinde plus minusve glabrescentes et cortice brunneo vestiti, diametro usque ad 3 mm accrescentes, costas 4 tamen diu retinentes; internodia 4–10 cm longa. Folia petiolo tomentello circ. 1 cm longo instructa; lamina ovata, 3–5 cm longa et 1.5–2.7 cm lata, apicem versus paulum contracta, basi acuta vel obtusa, ad petiolum tamen semper plus minusve contracta, margine subintegra, supra primum densius, deinde sparse pubescens, subtus primum tomentosa, deinde praesertim costa nervisque densius pubescens, nervis utroque latere costae 7–9. Inflorescentiae axillares, paniculiformes vel capituliformes, e floribus 3–9 compositae, subglabrae. Pedunculus 2–4 cm longus, gracilis; ramuli et rhachis usque ad 1.2 cm longi. Bractae infimae lineares, 1.4 cm longae

et 1.5 mm latae. Bracteae florales 1.1 cm longae et 1.7 mm latae. Bracteolae florum lateralium subulatae, 7 mm longae et 0.6 mm latae; flos centralis ebracteolatus. Calyx fere ad basin 5-partitus; lobi 11 mm longi et 1.7 mm lati, acuti, subcarinati. Corolla rubra, 3.5 cm longa, extus glabra, tubo 1.0 cm longo et 2.5 mm diam., faucibus incurvatis 2.2 cm longis et ad medium 7 mm diam., lobis emarginatis 3 mm longis. Stamina paulo exserta; filamenta glabra 2.2 cm longa; antherae 4 mm longae, dorso pilis capitatis minimis obtectae, apice obtusae, lobis basalibus 1.5 mm longis. Granula pollinis 60  $\mu$  diam., reticulata; brochi circ. 7  $\mu$  diam. Ovarium 3 mm altum, glabrum, utroque loculo ovulis 3. Stylus parce pilosus, 3.3 cm longus. Stigmata linearia, inaequalia, 0.6 et 1.1 mm longa. Capsula 12 mm longa, glabra, 6-seminalis. Semina margine pilis mucosis instructa, 2 mm diam. Retinacula gracillima.

Bolivia: Dep. Santa Cruz, Camiri, on Rio Parapeti refinery, 20.00 S, 63.15 W, alt. 750 m. "Small shrub in wood. Flowers dull red."

This species resembles *St. macrandrum* Brem. (see below) in the exerted anthers, a character not found in any of the species accepted by Nees, but it differs from *St. macrandrum* in the tomentose shoots and petioles and the tomentose lower side of the leaf, the characters in which it resembles *St. molle* Nees, in the greater length of the calyx lobes, the narrower corolla throat and the less far exerted anthers.

5681. *Stephanophysum macrandrum* Brem. n. spec., corollae forma et magnitudine *St. longifolio* Pohl similior sed calycis lobis brevioribus et pro rata latioribus, staminibus exsertis ab eo diversa, a *St. brookeae* Brem. (vide supra) ad quod staminibus exsertis accedit caulis et foliorum glabritate, foliis angustioribus, bracteolis et calycis lobis brevioribus distincta.

Herba glabra, circ. 40 cm alta. Caulis ramique tetragoni et quadrisulcati. Folia (superiora solum visa) in petiolum 5–10 mm longum contracta; lamina ovato-lanceolata, circ. 4.5 cm longa et 2.0 cm lata, apicem versus paulum contracta, margine irregulariter sed densius crenato-dentata, discolor, costa basin versus impressa, nervis utroque latere costae 6–9 utrimque prominulis, reticulatione laxa utrimque distinguenda. Inflorescentiae dichasiales pedunculo rigidulo 2–5 cm longo instructae; ramuli infimi haud raro duo superpositi et bracteis linearibus 0.7–1.4 cm longis suffulti; bracteae ramulorum sequentium gradatim breviores. Flores pedicello circ. 0.5 mm longo et bracteolis deltoideis 1.8 mm longis instructi. Calyx tubo 0.7 mm alto et lobis deltoideis 2.7 mm longis instructus. Corolla coccinea, extus glabra, tubo tereti facie ventrali 5 mm, facie dorsali 9 mm longo, 1.2 mm diam., faucibus campanulatis facie ventrali 18 mm, facie dorsali 15.5 mm longis, ad medium 9 mm diam., lobis erectis apice retusis 3 mm longis et 3 mm latis. Stamina 12 mm supra basin tubi inserta, sed fere ad basin in plicas duas decurrentia; filamenta glabra, circ. 3 mm exserta, parte connata 4 mm, parte libera 13 mm longa; antherae 3 mm longae, apice obtusae, lobis basalibus 1.0 mm longis, acutis. Granula pollinis 3-pora, reticulata, 46  $\mu$  diam. Ovarium 3 mm

altum, glabrum, utroque loculo ovulis 4. Stylus glaber, 25 mm longus, circ. 5 mm exsertus; stigmata 1.0 et 0.5 mm longa. Capsula unguiculo 3 mm longo incluso 8.5 mm longa, 2-seminalis. Semina nondum visa.

Bolivia: Dep. Chuquisaca, Bartolo, 20.00 S, 64.75 W, alt. 1500 m. "A 40 cm high herb with scarlet flowers". Type in the herbarium at Utrecht.

A noteworthy feature of this new species are the rather short and broad calyx lobes; in all the other species that so far are known they are either linear or filiform.

It is perhaps appropriate to make here a few remarks on the structure of the pollen grains. In all the species of this genus which so far could be studied the latter proved to be 3-porous and reticulate with the meshes (brochi) of the reticulum all of the same size and separated from each other by very low rims (muri). In the relatively small height of the rims and in the regularity of the network they resemble those of the species which by me are left in the genus *Ruellia*, but the size of the meshes is much larger and their number accordingly much smaller. In the regularity of the network and in the relatively small height of the rims they differ conspicuously from those of the *Arrhoxylum* and *Ulleria* species. (cf. Bremekamp in Rec. d. trav. bot. Néerl. 35, Tab. 14, fig. F-N, 1938).

5673. *Stephanophysum* cf. *quadrifarium* Nees; ob paupertatem speciminis haud certe identificandum

6546. *Stephanophysum longifolium* Pohl

#### Justicieae, Justiciinae

6395. "*Beloperone*" *mandoni* Lindau. "Aehnelt von den übrigen bekannten andinen Beloperonen keiner einzigen" (Lindau in a note attached to the description). In fact, this is no *Beloperone*; the pollen grains have on each side of the pore a single row of shields (insulae), whereas there are in the true representatives of this genus always two; moreover, the area between the rows of shields adjacent to the opposite pores is not distinctly thickened as it ought to be if this species really belonged to *Beloperone*. It doubtless represents a hitherto overlooked genus which, however, can not yet be described as the seeds are still unknown.

5677. *Sarotheca glutinosa* Brem. n. spec., maxime ut *S. archeri* (Leonard) Brem. n. comb. (*Justicia archeri* Leonard in Contr. Un. Stat. Nat. Herb. 31: 505, 1958), sed spicis oppositifloris, bracteis et calycis lobis obtusis et densius glandulosis ab ea recedens.

Herba gracilior. Caulis obtuse quadrangularis et haud profunde quadrisulcatus, circ. 2 mm diam., primum pilis curvatis densius pubescens, deinde sparsius pubescens, ex internodiis 2-7 cm longis compositus. Folia in petiolum dense pubescentem, 5-12 mm longum contracta; lamina oblongo-lanceolata vel oblongo-elliptica, 4-6.5 cm longa et 1.8-2.5 cm lata, apicem subobtusum versus paulum contracta, basin versus distincte contracta, supra setulis cum pilis tenuioribus deciduis mixtis sparse vestita, subtus pilis curvatis pubescens, cystolithis supra distinguendis,

nervis utroque latere costae 6–8 subtus prominulis, reticulatione inconspicua. Inflorescentiae terminales et axillares, e spicis paucis oppositifloris compositae. Pedunculi 4–6.5 cm longi, pilis capitatis dense vestiti. Rhachides pedunculis similiores sed ex internodiis 0.5–2 cm longis compositae. Bracteae lineares, 5–6 mm longae et 1.5–1.8 mm latae, subacutae, supra glabrae, subtus pilis capitatis obtectae. Bracteolae bracteis similiores sed paulo breviores. Calycis lobi 4 lineares, 7 mm longi et 1.5 mm lati, subacuti, intus glabri, extus pilis capitatis obtecti. Corolla extus pilis capitatis vestita, tubo incurvato 7.5 mm longo et 2 mm diam., labio superiore emarginato 5 mm longo, rugula distincta instructo, labio inferiore 7.5 mm longo, palatifero, 3-lobato, lobis 3 mm longis. Stamina paulo infra incisuras corollae inserta; filamenta glabra 5 mm longa, connectivo oblique dilatato, theca infera calcarata, theca supera basi mucronata, vix obliqua, dorso glabra. Granula pollinis 2-porata, utroque latere pori serie singula insularum difficiliter distinguendarum instructa, 42  $\mu$  longa et 20  $\mu$  diam. Discus annularis, facie exteriori glandulis scutelliformibus duabus instructus. Ovarium glanduloso-puberulum, 2.5 mm altum. Stylus glaber, 9 mm longus; stigma bilobatum. Capsula stipite 7 mm longo incluso 16 mm longa, glanduloso-puberula. Retinacula obtusa. Semina verruculis acutis, apice uncinulatis vestita, 3 mm diam.

Bolivia: Dep. Chuquisaca, Heredia, on the road from Monteagudo to Bartolo, 20.00 S, 64.20 W, alt. 1200 m.

Noteworthy characters of this species are that the two bracts inserted on the same node are each subtending a flower, that the width of the bracts, bracteoles and calyx lobes remains the same along practically the whole length of the inflorescence, further the short corolla, the almost erect upper theca, the indistinct sculpture of the pollen grains, and above all the acute wartlets by which the seeds are covered and the uncinuate teeth with which these wartlets are provided near the tip. These wartlets are therefore very similar to those found on the seeds of *Dicliptera* and *Solenochasma* (cf. Bremekamp in Boissiera 7: 183 and fig. 14, 1943).

6548. *Sarotheca boliviensis* Brem. n. spec., maxime ut *S. cystolithosa* (Leonard) Brem. n. comb. (*Justicia cystolithosa* Leonard in Contr. Un. Stat. Nat. Herb. 31: 492, 1958), sed foliis basi contractis, pubescentibus, bracteis paulo longioribus, calycis lobis paulo brevioribus, corolla breviori, theca supera basi mucronata ab ea diversa.

Herba robustior. Caulis obtuse quadrangularis, circ. 4 mm diam., primum dense pubescens, ex internodiis 6–8 cm longis compositus. Folia in petiolum pubescentem 1.5–2.0 cm longum contracta; lamina oblongo-elliptica, 9–17 cm longa et 5–6 cm lata, utroque extremo contracta, supra primum sparse pubescens, deinde inter costam et nervos sparse hirsutos scabridula, subtus inter nervos sparse sed longius pubescens, costa nervisque hirsutis, cystolithis supra difficiliter distinguendis, nervis utroque latere costae circ. 10 subtus prominulis, reticulatione laxa subtus conspicua. Inflorescentiae terminales et axillares, paniculiformes, e spicis



secundifloris, interdum semel furcatis compositae, foliis longiores. Pedunculi 4–6 cm longi, pubescentes. Rhachides densius hirsuto-pubescentes. Bracteae ramulos inflorescentiae suffulcientes lineari-lanceolatae, 4–10 mm longae, supra glabrae, subtus pubescentes. Bracteae florales lineares, circ. 5.5 mm longae, supra glabrae, subtus pilis capitatis vestitae. Bracteolae bracteis similiores sed circ. 5.0 mm longae. Calycis lobi 4 aequales, lineares, 7 mm longi, extus pilis capitatis dense vestiti. Corolla 2.3 cm longa, extus pilis capitatis sparse vestita, tubo anguste infundibuliformi 15 mm longo et 2.5 mm supra basin contracto, ad fauces 4.5 mm diam., labio supero vix notabile emarginato, rugula vix conspicua instructo, 8 mm longo, labio infero 3-lobato et palatifero, 9 mm longo, lobis 2.5 mm longis. Stamina paulo infra incisuras corollae inserta; filamenta glabra 7.5 mm longa, connectivo oblique dilatato, theca infera breviter calcarata, theca supera obliqua, basi mucronata, dorso sparse puberula. Granula pollinis 2-pora, utroque latere pori serie singula insularum instructa, 46  $\mu$  longa et 28  $\mu$  diam. Discus annularis. Ovarium pilis capitatis vestitum. Stylus glaber, corollae aequilongus; stigma bilobatum. Capsula stipite 8 mm longo incluso 18 mm longa, pilis capitatis parce puberula. Retinacula obtusa. Semina minute verruculosa, 3 mm diam.

Bolivia: Dep. La Paz, Chulumani, about 100 miles east of La Paz in the Yungas district, 16.30 S, 67.00 W. alt. 1800 m.

6630. *Sarotheca boliviensis* Brem. This specimen was collected also in the Department of La Paz, viz. at Coroico in the valley of the Yungas, 16.00 S, 67.30 W, alt. 1500 m. It differs from the type specimen in the shoots which are not densely pubescent but provided with two rows of rather long hairs, in the nearly glabrous rhachides which bear but a few capitate hairs, and in the slightly larger flowers, the corolla reaching a length of somewhat more than 3 cm.

5586. *Lophothecium boliviense* Brem. n. spec., a *L. paniculato* Rizz. (in Arq. Jard. Bot. Rio de Janeiro 8: 336, 1948) foliis basi rotundatis, inflorescentiis minoribus, bracteis, bracteolis et calycis lobis glabris, calycis lobis multo brevioribus, corolla paulo majore distinguenda.

Caulis et rami teretes, conspicue articulati, quadrisulcati, primum bifariam pubescentes, circ. 2 mm diam., internodiis visis a me usque ad 7.5 cm longis, superioribus multo brevioribus. Folia basalia nondum visa, superiora petiolo pilis longis vestito et 3 mm longo instructa; lamina ovata, basi rotundata, apice acuminata, 3.0–4.5 cm longa et 1.7–2.6 cm lata, supra sparse pubescens, subtus praesertim costa nervisque dense et longius pubescens, nervis utroque latere costae 6–7. Paniculae axillares, foliis suffulcientibus longiores, interdum oppositae, pedunculo 1.5–2.0 cm longo incluso 4.5–6.0 cm longae et 3.0–4.0 cm diam., rhachide ramulisque pilis ecapitatis pubescentibus. Flores subsessiles, plerumque solitarii ad nodos ramulorum. Bracteae anguste triangulares 2 mm longae, glabrae. Bracteolae 1.5 mm longae, pro rata latiores, etiam glabrae. Calyx aequaliter 5-partitus, glaber; lobi anguste triangulares 2 mm longi. Corolla colore

ignoto, extus glabra, tubo 7 mm longo, dimidio infero tereti, dimidio supero infundibuliformi, labio supero integro, 12 mm longo et 9 mm lato, rugula instructo, labio infero 3-lobato, 13 mm longo et 9 mm lato, palatifero, lobis subaequalibus 2 mm longis, obtusis. Stamina paulo infra fauces inserta; filamenta curvata, glabra, 10 mm longa, connectivo 1.5 mm longo, thecis ovoideis 1.2 mm longis, theca supera calcare sicc. brunneo 2.3 mm longo, ad filamentum appresso instructa, infera calcare hyalino 0.5 mm longo, subobtusely exeunte instructa. Granula pollinis 2-pora, utroque latere pori serie singula insularum instructa, ceterum minutissime punctata, 50  $\mu$  longa et 28  $\mu$  diam. Discus validus, biauritus. Ovarium glabrum, 2.5 mm altum. Stylus glaber, 18 mm longus; stigma capitatum. Capsula nondum visa.

Bolivia: Dep. Santa Cruz, Camiri, on Rio Parapeti refinery, 20.00 S, 63.15 W, alt. 750 m. "On roadside".

At first sight it may seem a mistake that this new species is referred to the up to now monotypic genus *Lophothecium* Rizini as it differs from the description of the latter in two important points, viz. in the structure of the upper theca and in that of the pollen grains, but as there is in all the other important characters a very striking resemblance with the plant described and figured by Rizini (Arq. Jard. Bot. Rio de Janeiro 8: 336, 1948), I am inclined to regard these differences as less important than they seem to be or else that Rizini's description is not fully accurate. Rizini described the upper theca of his species as inappendiculate, but he may have overlooked the presence of the spur as, in fact, I did myself when I inspected the flower for the first time, because this spur is appressed to the filament and of the same colour as the latter; moreover, the presence of such a long spur in the upper theca is most unexpected; as a rule, the upper theca of the plants belonging to the *Justicieae* is either inappendiculate or provided with a short hyaline mucro. The pollen grains of the type species are described as finely reticulate with the exception of the longitudinal strips in which the pores are situated, but I am inclined to think that this is a mistake, as a reticulate surface has as yet not been met with in any other member of the *Justiciinae*. The pollen grains of the species described above are minutely punctate with the exception of the trema areas i.e. the strips in which the pores are situated; these strips are provided on each side of the pore with 4-6 rather large but not very prominent shields (insulae) arranged in a single row; in my opinion these shields correspond to the crenations of the reticulate part shown in Rizini's figure.

5647. *Saglorithys polygonoides* (H.B.K.) Brem. n. comb.; *Justicia polygonoides* H.B.K., Nov. Gen. et Spec. 2: 189, 1817; *Rhytiglossa polygonoides* (H.B.K.) Nees in DC., Prodr. 11: 353, 1847.

### Summary

The Acanthaceae collected by Miss W. M. A. Brooke in Bolivia are listed. Five new species are described, viz. *Stephanophysum brookeae*, *St. macrandrum*, *Sarotheca*

*glutinosa*, *S. boliviensis* and *Lophothecium boliviense*. Moreover, for the species belonging to the group *Genuini Ebracteolati* of *Dipteracanthus* Nees a new genus *Ulleria* is created. The following new combinations are proposed: *Ulleria geminiflora* (*Ruellia geminiflora* H.B.K.), *U. angustifolia* (*Dipteracanthus angustifolius* Brem.), *U. surinamensis* (*D. surinamensis* Miq.), and further *Stemonacanthus euanthus* (*Ruellia euantha* Lindau), *Arrhoxylum kuntzei* (*Ruellia kuntzei* Lindau), *Sarotheca archeri* (*Justicia archeri* Leonard), *S. cystolithosa* (*J. cystolithosa* Leonard) and *Saglorithys polygonoides* (*J. polygonoides* H.B.K.). Arguments for rejecting the delimitation of the genera *Ruellia* and *Justicia* adopted by Bentham and by Lindau are once more brought forward.