A revision of the afrotropical representatives of the genus *Langbiana* Hogg (Araneae: Zodariidae)

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Summary

The subgenus *Suffucioides* Jézéquel, 1964 was removed from *Storena* Walckenaer, 1805 and elevated to generic rank by Van Hove & Bosmans (1984) and is herein redefined to include species from the afrotropical and oriental regions. The genus is diagnosed mainly by genital characters. The genus *Langbiana* Hogg, 1922 is a senior synonym of *Suffucioides* (**syn.nov.**), and the following species are transferred to this genus (**comb.nov.**): *L. leonardi* (Simon), *L. bandamaensis* (Jézéquel), *L. bicolor* (Jézéquel), *L. cameroonensis* (Van Hove & Bosmans), *L. sylvatica* (Van Hove & Bosmans), *L. nyikae* (Pocock), *L. decurtata* (Thorell), *L. selecta* (Pavesi), *L. submonticola* (Van Hove & Bosmans), *L. monticola* (Van Hove & Bosmans) and *L. etindei* (Van Hove & Bosmans). One new species is described, viz. *L. kibonotensis* n.sp. The misplaced species *Storena zodarioninae* Simon and *S. zavattarii* Di Caporiacco are transferred to the genus *Asceua* and the family Clubionidae (genus not known) respectively. *Storena aethiopica* Pavesi, *S. nilotica* Simon and *S. senegalensis* Simon are considered *incertae sedis*. The palps and epigynes of all afrotropical species of *Langbiana* except those already described by Van Hove & Bosmans are figured, and descriptions are given.

Introduction

During the Belgian Cameroon Expeditions of 1981 and 1983, the first author collected spiders on different mountains in the eastern and north-eastern part of Cameroon. Owing to his interest in litter-dwelling spiders of the families Linyphiidae and Hahniidae, the major methods used were pitfall trapping, sieving litter and hand collecting. Partial results concerning these two families have been published by Bosmans (1982) and Bosmans & Jocqué (1983).

The presence in the samples of a large number of spiders of the family Zodariidae, all apparently belonging to the same genus, focused our attention on this family. On Mount Cameroon in particular, seven closely related species occurred in a distinct altitudinal zonation, and these species are described in Van Hove & Bosmans (1984). They appeared to belong to the genus *Storena* Walckenaer, 1805, in particular to the subgenus *Suffucioides* Jézéquel, 1964 which was given the rank of genus by Van Hove & Bosmans (1984). The monotypic genus *Langbiana* Hogg, 1922 from India appears to be a senior synonym of *Suffucioides*, and all species are therefore described here in this genus. In order to identify our species from Mount Cameroon, a revision of all African species formerly placed in the genus *Storena* had to be carried out, the results of which are presented below.

Taxonomic history of the genus *Storena*

The genus *Storena* was created by Walckenaer in 1805. Its type species, *S. cyanea* from Australia, is a juvenile specimen and has most probably been lost, making the generic status of *Storena* very unclear. Many species from all over the world have been attributed to this genus: 8 from the palaearctic region, 18 from the afrotropical region, 34 from the oriental region, 44 from the Australian region, 20 from the neotropical region and one from the nearctic region. All species are listed in Table 1.

However, L. Koch stated as early as 1872 that the type species *S. cyanea* was quite different from all other species known at that time, with regard to the shape of the carapace, the maxillae and the labium, the disposition of the eyes, and the length of the legs. He therefore created the genus *Habronestes*, to which he transferred all *Storena* species except *S. cyanea*.

In 1873, Simon described three palaearctic species in the genus *Habronestes*, in agreement with Koch's view that *Storena* and *Habronestes* were different. He also created the new zodariid genus *Selamia* for *Lachesis reticulata* from France, believing this new genus also to be different from *Storena*.

Thorell (1881), in his description of several new species from the oriental region, synonymized *Storena* and *Habronestes*. However, for a species with spineless legs, he created the new genus *Asceua* (Thorell, 1887).

Simon (1893) followed Thorell concerning this synonymy, and even synonymized *Selamia* and *Asceua* with *Storena*. He considered the genus as very polymorphic, especially in disposition of the eyes and spination of the legs, both considered as important diagnostic characters at that time. An analysis of genital organs, nowadays considered as indispensable to establish taxonomic relationships, was not undertaken.

All subsequent authors have accepted Simon's point of view, and described species from all over the world in the genus *Storena*, although they depicted strongly different sexual organs. Only Jézéquel (1964) found it necessary to create a new subgenus, which he called *Suffucioides*, for two species from the Ivory Coast. In recent years, there have been only two critical notes. Kritscher (1957) described some unknown males or females of *Storena*, and he found one Australian species to be very different from 4 oriental ones. Brignoli (1982) on the other hand stated that "*Storena* is badly in need of revision and is probably heterogeneous".

A world-wide revision of this poorly known genus of spiders thus seems very necessary, but considering the large number of described (and undescribed) species, this will be a huge task. Whereas the revision of the African species enabled us to resolve our identification problems of the species from Mount Cameroon, it did not indicate at that moment which genus name should be used. We will discuss this below.

Storena species from all over the world were therefore examined, mainly to study the structure of the genital organs. Species described in more recent times and adequately illustrated could also be taken into account. A list of all species is given in Table 1, and species with the same genital configuration as those

from Cameroon are distinguished by a + sign. The distribution of both groups is given in Map 1.

Most species from tropical Africa form a closely related group; exceptions are *zodarioninae* and *zavattarii,* transferred to other genera, and *aethiopica* and *nilotica,* described from juvenile specimens.

The species from Europe, North Africa and the Near East (*reticulata, segmentata, histrionica, tribulosa, libani* and *meadii*) have quite different genital organs. For the first of them, Simon (1873) created the genus *Selamia,* and this genus has to be revalidated, as will be discussed in a further paper.

Most of the species from the oriental region have the same genital configuration as those from tropical Africa. A minority have genital organs of a different type (*dispar, kraepelini, quinquestrigata, tenera, thorelli* and *torquata*), but most of these can be transferred to the genus *Asceua,* which also has to be revalidated.

Except two, all species from the Australian region have genital organs strongly different from those of tropical Africa. In fact, they comprise a very heterogeneous group. Undoubtedly, a revalidation of the genus *Habronestes* will be necessary, as well as the creation of some new genera. The exact value and position of *Storena* itself remains unclear, due to the unavailability of its type species, but we will try to solve this problem in a further paper. Two species are different from the rest of the Australian species (*zebra* and *beaufortii*), both occurring in New Guinea; they belong to the group of afrotropical and oriental species.

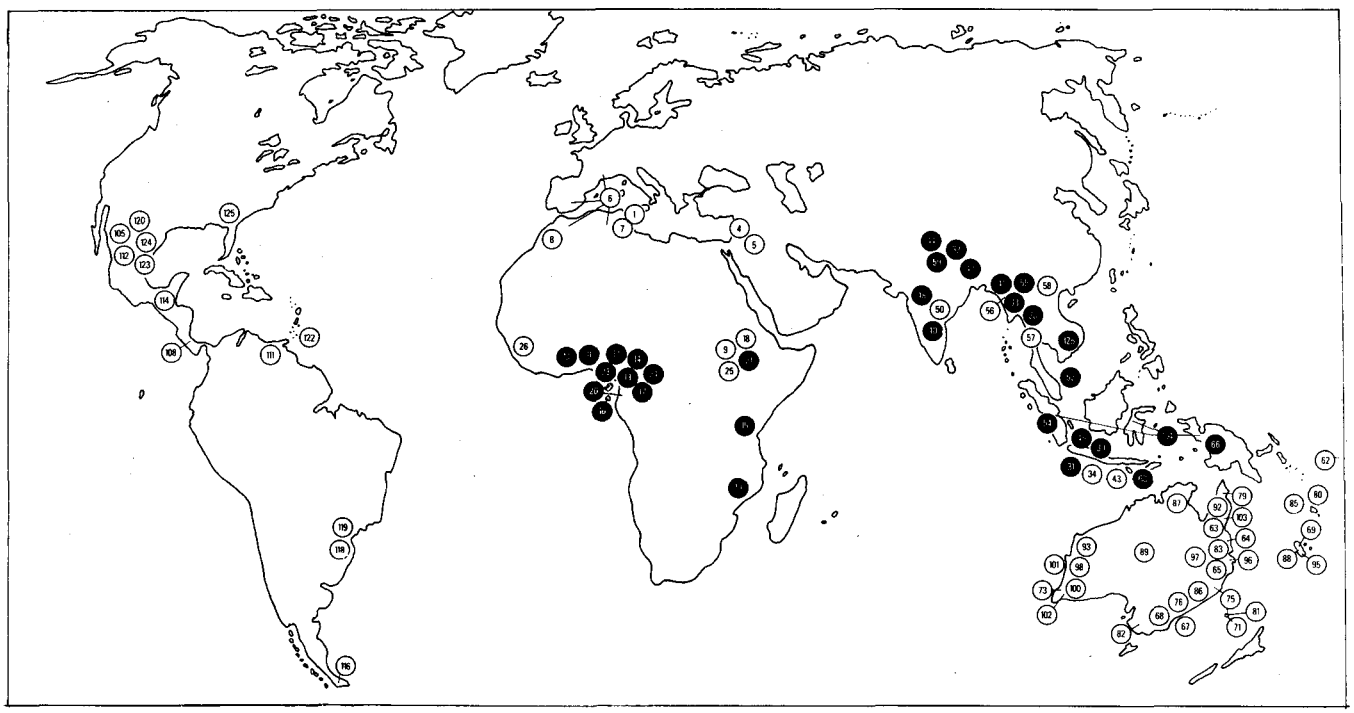
The species from the nearctic and neotropical regions are also quite different from the African ones. Further studies of this fauna will probably reveal that several new genera will have to be created, and that the genus *Tenedos* created by O. P.-Cambridge (1897) for *T. lauta* from Guatemala must probably be revalidated as well.

Thus, the species from the oriental and afrotropical regions comprise a closely related group, to which an adequate generic name has to be given. The type species of *Storena* Walckenaer, *Habronestes* L. Koch and *Selamia* Simon were described from other zoogeographical regions, and the last two have different sexual organs. *Asceua* Thorell has an oriental distribution, but has different sexual organs. Only the subgenus *Suffucioides* Jézéquel from tropical Africa is available, and it should be given the rank of genus. Five species from Mount Cameroon have been described in this genus (Van Hove & Bosmans, 1984).

However, with the kind help of Dr Jocqué, who is revising some other zodariid genera, we came across the monotypic genus *Langbiana* Hogg, 1922 from Vietnam. According to Hogg's short diagnosis this species possesses two tarsal claws. This feature would place the species in Simon's Hermippeae (1893). An examination of the type species of *Langbiana,* however, made it evident that there are three tarsal claws, placing the genus in the Storeneae. A further examination of the general morphology and of the sexual organs also reveals that it is identical with *Suffucioides* Jézéquel, and the latter is therefore considered a junior synonym. Recently, Brignoli (1982) described a species from Tibet, which he placed with some doubt in the genus *Suffucia.* From the diagnosis given below, it will become clear that his *Suffucia hingstoni* also belongs in the genus *Langbiana*; it is closely related to some "*Storena*" species recently described by Ono (1983) from Nepal.

Collections examined

The collections of the following institutions have been examined (abbreviations are given alphabetically): AM = Australian Museum, Sydney (M. Gray); BMNH = British Museum (Natural



Map 1: Distribution of "*Storena*" and *Langbiana* species. Black circles: species with the same genital configuration as *Langbiana klossi*; open circles: with different genital configuration; numbers of species as in Table 1.

History) (P. Hillyard); HEC = Hope entomological collections, Oxford University (I. Lansbury); IZW = Instytut zoologiczy, Polska Akademia Nauk, Warswawa (A. Slojewska); MCG = Museo civico di Storia naturale "Giacomo Doria", Genova (G. Arbocco); MNHNP = Muséum national d'Histoire naturelle, Paris (J. Heurtault); MHNG = Muséum d'Histoire naturelle, Genève (B. Hauser); MRAC = Musée royal d'Afrique centrale, Tervuren (R. Jocqué); MZF = Museo zoologico de "La Specola", Firenze (S. Mascherini); NMB = Naturhistorisches Museum Basel (E. Sutter); NMW = Naturhistorisches Museum, Wien (J. Grüber); NRS = Naturhistoriska Riksmuseet, Stockholm (T. Kronestedt); RNHL = Rijksmuseum voor natuurlijke Historie, Leiden (P. J. Van Helsdingen); SMF = Forschungsinstitut Senckenberg, Frankfurt-am-Main (M. Grasshoff); ZMB = Zoologisches Museum, Berlin (M. Moritz); ZMH = Zoologisches Museum, Universität Hamburg (G. Rack).

Methods

In recording the relative size and disposition of the eyes, the following symbols and abbreviations have been used. The diameters of all eyes are expressed as multiples of that of the anterior medians (AME), as are also the distances separating the anteriors. The distances separating the posteriors are expressed as multiples of the diameters of the posterior medians (PME). ALE, PLE = diameter of anterior and posterior lateral eyes; a = distance between AME; b = distance between AME and ALE; c = distance between PME; d = distance between PME and PLE.

In describing the spination, the positions of the spines are indicated as follows: d (dorsal), pl (prolateral), rl (retrolateral), v (ventral). Numbers of spines are given by Arabic numerals (1 = a single spine, 2 = paired spines). All measurements are in mm.

Treatment

The treatment of the genus is preliminary, for the following reasons: (a) only the afrotropical representatives of the genus are revised; (b) five more species are described in Van Hove & Bosmans (1984), all collected on Mount Cameroon in 1981; (c) during a second expedition to Cameroon in 1983, several more new species were discovered on other Cameroonian mountains; (d) the collections of the Museum voor Midden Afrika, Tervuren, contain several undescribed species. The species collected recently in Cameroon will be described in further reports of the Belgian Cameroon Expeditions, and we hope to revise the oriental species in another paper.

Taxonomy

Genus *Langbiana* Hogg, 1922

Langbiana Hogg, 1922: 286 (type species by monotypy: *Langbiana klossi* Hogg).
Suffucioides Jézéquel, 1964: 334 (type species by original designation: *Storena* (*Suffucioides*) *leonardi* Simon). **New synonymy.**

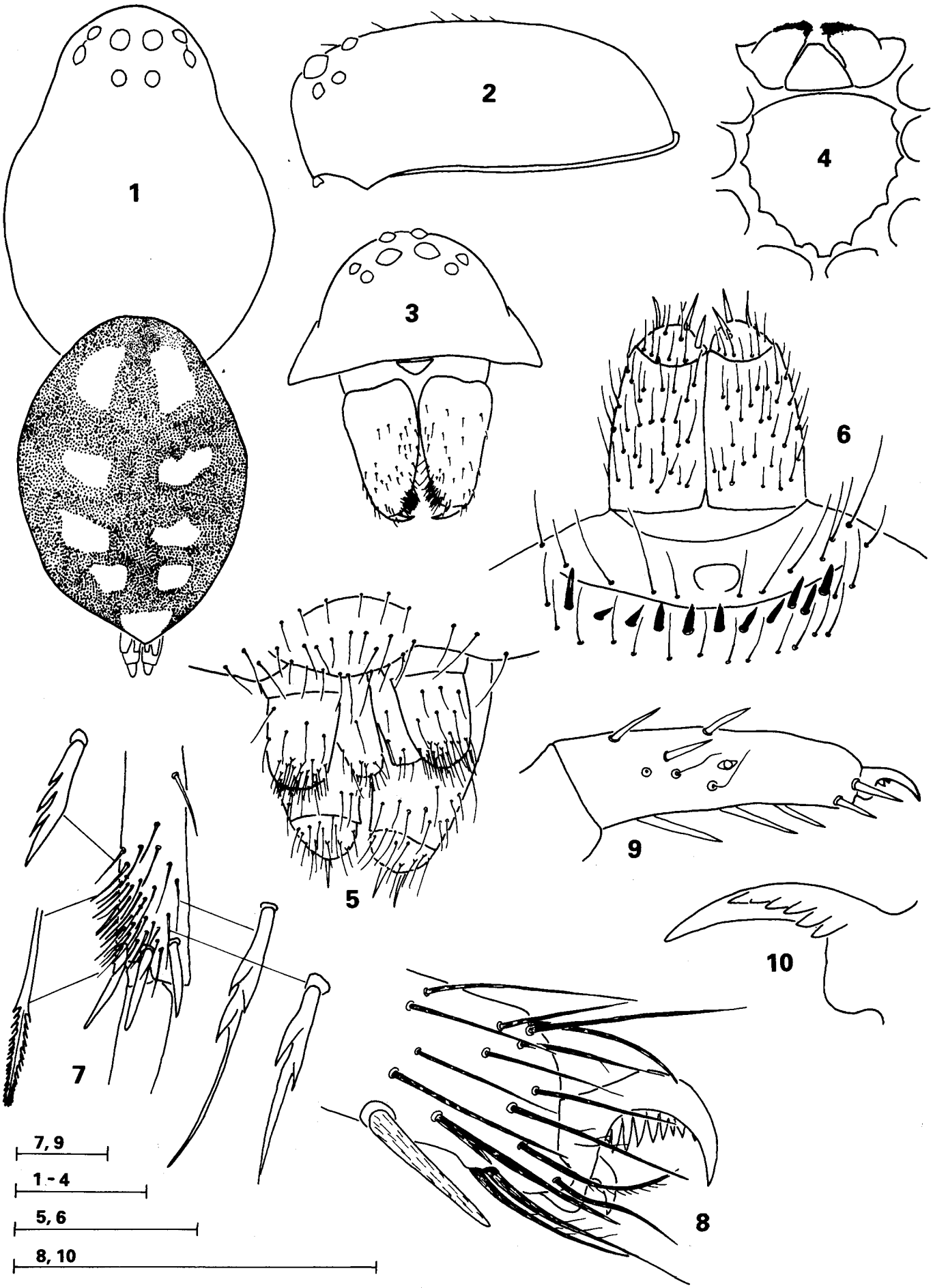
Diagnosis

Langbiana can be distinguished from other zodariid genera by combined genital characters: males have a thick lateral tibial apophysis, a cymbium with basolateral groove, an elongated, mostly toothed or ridged tegular apophysis, an excavated, distally chitinised conductor, and a thread-like embolus with broad base; females have a simple epigyne, with few or no exterior sclerifications; vulva with more or less coiled ducts.

The presence of a row of small spines anterior to the spinnerets may represent another diagnostic character, but this needs confirmation; all species so far examined possess this character.

Description (Figs. 1-10)

Medium-sized spiders (4-7.8 mm); carapace (Figs. 1-2) convex, oval, with reticulated integument, distinct fovea, cervical groove poorly indicated; mostly dark coloured, sometimes cephalic part paler. Seen from above, eyes in two procurved rows, anterior row slightly, posterior strongly procurved; eyes of equal size, or AME much larger (up to twice diameter of other eyes); AME separated by 0.4-0.8 their diameter, from ALE by 0.3-1.2 their diameter; PME separated by about their diameter, ALE from PLE by 1.6-3.1 their diameter; clypeal height at AME 3 to 6 × diameter of AME, depending on their diameter; median ocular quadrangle in front 1-1.5 × wider than at back, and 1-1.35 × longer than wide. Chelicerae (Fig. 3) with lateral groove, with few frontal hairs, promargin with conspicuous tuft of setae; no teeth in fang groove; fang small. Chilum large, trapezoid. Gnathocoxae strongly converging, anteriorly slightly narrowed. Labium in form of an equilateral triangle. Sternum (Fig. 4) with uniformly short setae, sclerified extensions to coxae and a small terminal point separating 4th coxae by ⅓ their diameter. Female pedipalp (Figs. 9-10) strong, tarsus longer than tibia, both with strong lateral and ventral spines, tarsal claw long, with many teeth. Legs orange-brown, often annulated; leg formula 4123 or 4132; legs strongly spined, but spination inconstant, as observed in a series of 10 specimens of both sexes of two species; metatarsus of leg II and III with dense, terminal group of spines (Fig. 7), somewhat less expressed on leg IV; tarsi with some long trichobothria, and 3 claws (Fig. 8), with many spines; no onychium or scopulae. Abdomen oval, dorsal surface darkly coloured, anterodorsally coriaceous or with scutum, dorsally with paler spots; venter in front of spinnerets and in front of genital slit sclerotised. Anterior spinnerets cylindrical (Figs. 5-6), touching at their base; other spinnerets much smaller, especially the medians; a row of short spines in front of anterior spinnerets. Male palpal tibia with thick distolateral apophysis; cymbium with strong lateral ridge, very short or extending towards its tip; bulbus large, with well-developed chitinous tegular apophysis, bearing ridges or teeth; conductor chitinous, distally excavated to receive tip of embolus; embolus with broad base orientated in lateral, posterior or mesal direction, with large anterior membrane, ending in a thread-like filament of variable length, sometimes with supplementary teeth or bifurcations. Epigyne very simple, consisting of a small, hairless plate bordered by a chitinous ridge, generally with two anterior depressions lacking hairs; vulva with



Figs. 1-10: *Langbiana decurtata* (Thorell). **1** Dorsal aspect of male; **2** Carapace, lateral view; **3** Carapace and chelicerae, frontal view; **4** Sternum and labium, ventral view; **5** Spinnerets, dorsal view; **6** Spinnerets, ventral view; **7** Metatarsal-tarsal articulation of leg III; **8** Claw of leg III; **9** Tarsus of female palp; **10** Claw of female palp. Scale lines: 1 mm (1-4), 0.25 mm (5-10).

very short or very long, coiled ducts, depending on the length of the embolus.

Species included in the genus

On the basis of the present investigation, the genus *Langbiana* now contains the following afrotropical species:

leonardi group: *L. leonardi* (Simon) n.comb.
L. bandamaensis (Jézéquel) n.comb.
L. bicolor (Jézéquel) n.comb.
L. cameroonensis (Van Hove & Bosmans) n.comb.
L. sylvatica (Van Hove & Bosmans) n.comb.

nyikae group: *L. nyikae* (Pocock) n.comb.
L. decurtata (Thorell) n.comb.
L. selecta (Pavesi) n.comb.
L. submonticola (Van Hove & Bosmans) n.comb.
L. monticola (Van Hove & Bosmans) n.comb.
L. etindei (Van Hove & Bosmans) n.comb.
L. kibonotensis n.sp.

L. octosignata (Simon, 1903), n.comb., cannot be classified with certainty. Only one adult female is known, and the vulva was not studied. The two groups are characterized as follows:

leonardi group:
(a) male pedipalp with long cymbial ridge, reaching or nearly reaching its tip;
(b) long, thread-like embolus;
(c) vulva with long, coiled ducts, corresponding with the long embolus.

nyikae group:
(a) male pedipalp with short cymbial ridge, shorter than half its length;
(b) embolus relatively broad, shorter, sometimes with lateral tooth or longitudinal furrow;
(c) vulva with short ducts.

Afrotropical species excluded from the genus "*Storena*"

Storena zodarioninae Simon 1907a: The type female from Guinée-Bissau has been examined (MNG). On the basis of the carapace shape, the spination and the large, complicated vulva, the species can most probably be placed in the genus *Asceua*. In his original description, Simon (1907a) already indicated the species was atypical for the genus.

Storena zavattarii Di Caporiacco, 1941: The type female from Ethiopia has been examined (MZF); it belongs to the family Clubionidae, but we do not know the genus.

Incertae sedis

Storena nilotica Simon 1907b: This species was described on an immature female from Ethiopia. The type specimen has been examined (NRSN); according to the carapace shape, and the absence of the row of spines anterior to the anterior spinnerets, this species is not a *Langbiana*. Also considering its juvenile status, the name has to be considered *incertae sedis*.

Storena aethiopica Pavesi, 1895: This species also was described from an immature specimen from Ethiopia. Its type specimen was examined (MCG); for the same reasons as *S. nilotica*, it has to be considered *incertae sedis*.

Storena senegalensis Simon, 1885: This species was based on a juvenile specimen from Senegal. The type was not found in the examined collections. According to Jézéquel (1964), who perhaps saw the type specimen, it belongs to *Suffucioides* (= *Langbiana*). Topotypic material could elucidate the identity of this species.

Key to afrotropical *Langbiana* species (males only)

1. Embolar base orientated in lateral or anterolateral direction (Figs. 12, 14, 17) 2
— Embolar base in posterior direction . *submonticola*
— Embolar base in mesal direction (Figs. 22, 24, 29) 6
2. Cephalic part of carapace darker than thoracic part . . . . . *bicolor*
— Carapace uniformly coloured 3
3. Cymbial ridge ¾ length of cymbium . . *sylvatica*
— Cymbial ridge as long as or only slightly shorter than its length 4
4. Basal part of suprategulum without teeth or ridges (Fig. 12) . . . . . *leonardi*
— Basal part of suprategulum with teeth or ridges . 5
5. Tegular apophysis with very prominent, basomesal tooth . . . . . *cameroonensis*
— Tegular apophysis with small basal tooth . . . . . *bandamaensis*
6. Embolus linear (Figs. 22, 24) 7
— Embolus toothed or bifurcate (Fig. 28) 10
7. Embolus terminally twisted. Tegular apophysis with one large, longitudinal fold . . . . . *decurtata*
— Embolus straight. Tegular apophysis different . 8
8. Embolar base with posterolateral concavity. Embolus short, gradually narrowing . *monticola*
— Embolar base rounded posterolaterally. Embolus narrow from the base 9
9. Tegular apophysis slender, S-shaped, without teeth or folds. Tibial apophysis slender (Figs. 21-22) . . . . . *nyikae*
— Tegular apophysis broader, straight, with basal fold. Tibial apophysis stout (Figs. 23-24) . . . . . *kibonotensis*
10. Embolus with two mesal teeth . . . . . *etindei*
— Embolus with one mesal tooth (Fig. 29) . *selecta*

Species descriptions

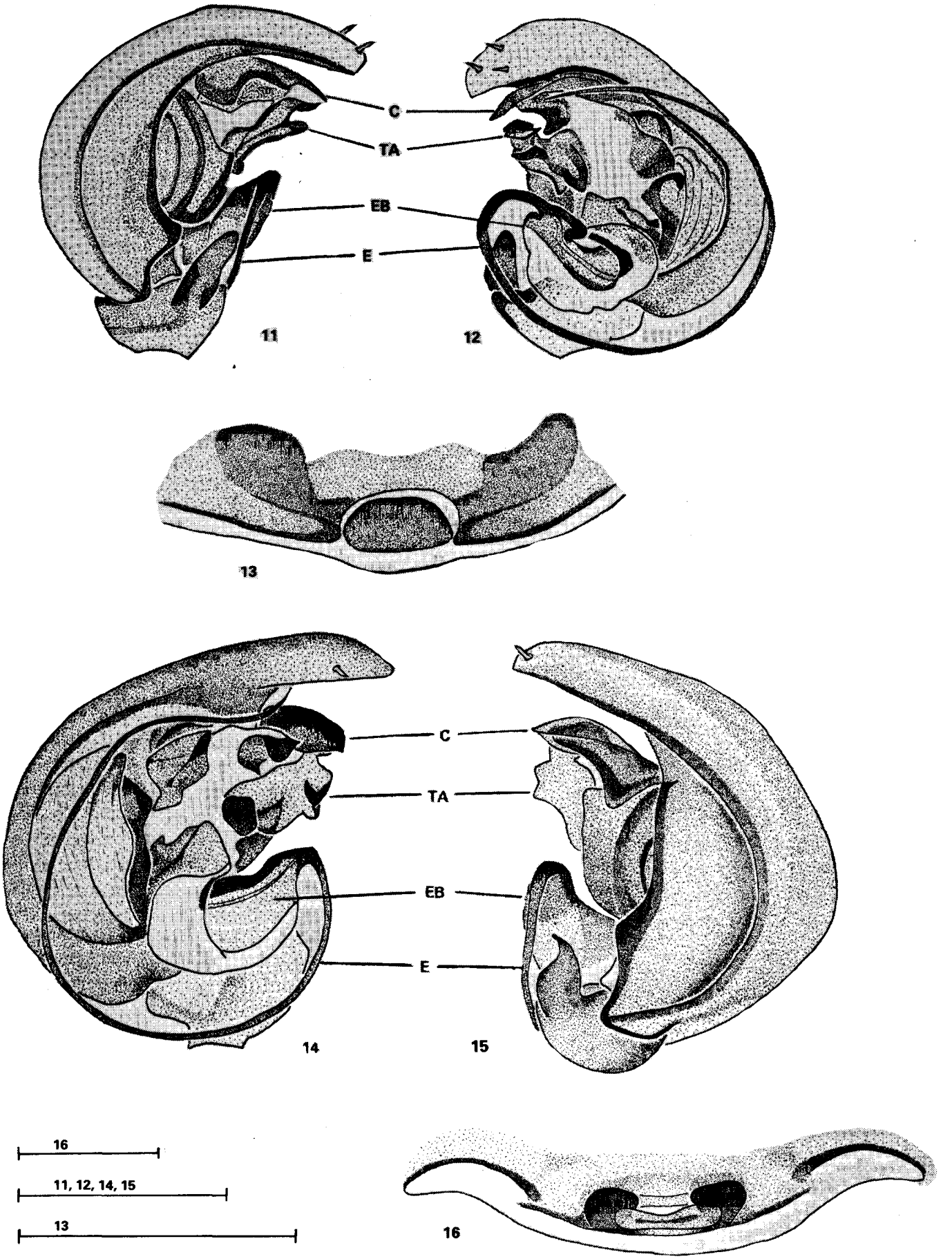
***Langbiana leonardi* (Simon) comb.nov.** (Figs. 11-13)

Storena leonardi Simon, 1907a: 245 (Descr. ♂, ♀, Principe Islands).
Storena (*Suffucioides*) *leonardi*; Jézéquel, 1964: 334.

Type material: Male lectotype (by present designation): Principe Islands (Fea leg., MCG); 1 ♀ (MCG), 2 ♀ (MNHNP) paralectotypes, same data; the last tube also contained a female of *Langbiana submonticola* (Van Hove & Bosmans, 1984).

Male lectotype

Measurements: Total length 5.63; carapace 2.80 long, 2.22 wide; sternum 1.23 long, 1.05 wide;



Figs. 11-13: *Langbiana leonardi* (Simon). **11** Male palp, lateral view; **12** Idem, ventral view; **13** Epigyne.

Figs. 14-16: *Langbiana bandamaensis* (Jézéquel). **14** Male palp, ventral view; **15** Idem, lateral view; **16** Epigyne.
Scale lines: 1 mm. Abbreviations: TA = tegular apophysis; C = conductor; EB = embolar base; E = embolus.

chelicerae 0.89 long. *Colour:* Carapace reddish brown with narrow black margin. Legs pale yellow with traces of annulations on femora and tibiae. Abdomen dorsally blackish brown, with large, whitish spots; ventrally pale grey. *Eyes:* AME = PME = 1; ALE = PLE = 7/8; a = b = ½, c = ¾, d= 1⅜. *Legs:* Spination of leg I: femur pl 1, d 11111; tibia d 11, v 1222; metatarsus d 1, v 11112. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	2.19	0.86	1.99	2.09	1.51	8.64
II	2.15	0.89	1.66	1.91	1.35	8.12
III	2.06	0.89	1.66	2.22	1.29	8.12
IV	2.37	0.86	2.25	3.29	1.72	10.49
palp	1.19	0.46	0.22	—	1.60	3.47

Male palp (Figs. 11-12): Tibial apophysis rather long, bluntly pointed. Cymbium with ridge nearly reaching its tip, terminally with three spines. Conductor with broad base, gradually narrowing into a sharp tooth. Tegular apophysis without basal tooth or ridge; terminally and subterminally with rounded, ventrally orientated lobes. Embolar base directed anterolaterally, with a strong mesal concavity; embolus very long and slender, making a complete circle.

Female

Measurements: Total length 6.38; carapace 2.95 long, 1.91 wide; sternum 1.26 long, 1.17 wide; chelicerae 1.05 long. *Colour:* As in the male, but carapace somewhat paler, and fovea more reddish. Eyes and spination as in male. Leg measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	2.09	0.89	1.69	1.72	1.32	7.71
II	1.94	0.83	1.51	1.63	1.14	7.05
III	1.82	0.83	1.48	1.48	1.14	6.75
IV	2.25	0.83	2.00	2.80	1.98	9.86
palp	0.82	0.49	0.49	—	0.80	2.60

Epigyne (Fig. 13): An oval, transverse plate, flanked by two oblique, elongated spots. *Vulva:* Not studied.

Distribution: Principe Island.

***Langbiana bandamaensis* (Jézéquel) comb.nov.** (Figs. 14-16)

Storena (*Suffucioides*) *bandamaensis* Jézéquel, 1964: 334 (Descr. ♂, ♀, Ivory Coast).

Type material: Male lectotype (by present designation): Ivory Coast, Savane de Singrobo, Lamto, 1962-1963 (MNHNP); several male and female paralectotypes, same data.

Description

This species, and the following, were excellently described by Jézéquel (1960). Only the sexual organs are redescribed here. *Male palp* (Figs. 14-15): Tibial apophysis with broad base, and slender, pointed tip. Cymbium with deep, curved ridge, ¾ length of cymbium; 2 terminal spines. Conductor strongly excavated, terminally pointed. Tegular apophysis with 4 teeth. Embolar base in transverse position, embolus very long and linear, making a complete circle. *Epigyne* (Fig. 16): A small, oval, transverse plate, laterally flanked by two dark spots. A large anterior area is dark as well, with two paler coloured spots. *Vulva:* Ducts long, with 6 coils.

Distribution: Ivory Coast.

***Langbiana bicolor* (Jézéquel) comb.nov.** (Figs. 17-19)

Storena (*Suffucioides*) *bicolor* Jézéquel, 1964: 336 (Descr. ♂, ♀, Ivory Coast).

Type material: Male lectotype, 2 female paralectotypes: Ivory Coast, Savane de Singrobo, Lamto, 1962-1963 (MNHNP).

Description

Male palp (Figs. 17-18): Tibial apophysis rather long, curved anteromesally. Cymbium terminally with two spines, ridge very long, reaching tip of cymbium. Conductor terminally with a ventrally curved tooth, its posterior margin in ventral view with two concavities. Tegular apophysis with a very prominent, basal tooth, a subterminal, transverse ridge and a terminal, slightly pointed lobe. Embolar base in transverse position, with strong anterolateral concavity; embolus long and linear. *Epigyne* (Fig. 19): A somewhat triangular plate with base and basal corners darkened, and flanked by two dark spots. *Vulva:* Ducts very long, with 11 coils.

Distribution: Ivory Coast.

***Langbiana octosignata* (Simon) comb.nov.** (Fig. 20)

Storena octosignata Simon, 1903: 68 (Descr. immature ♂, Equatorial Guinea).
Storena octosignata; Simon, 1907a: 244 (Descr. ♀, Fernando Poo).
Storena octosignata; Roewer, 1942: 247 (Fernando Poo).

Material examined: Fernando Poo, Basile, 1 ♀, Fea leg. (MCG); 1 juv., Eidmann leg. (SMF).

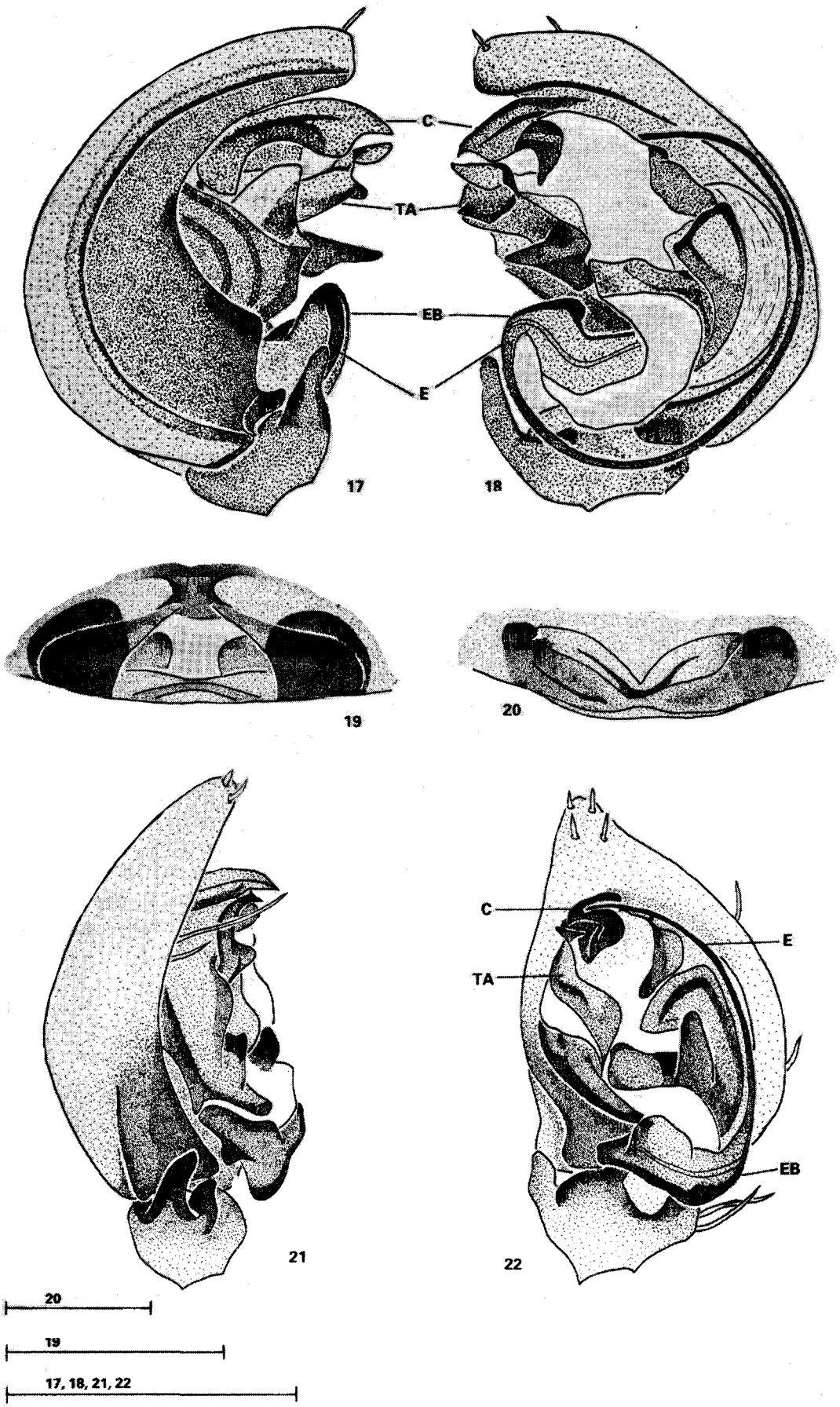
Female

Measurements: Total length 7.38; carapace 3.60 long, 2.52 wide; sternum 1.42 long, 1.29 wide; chelicerae 1.45 long. *Colour:* Carapace dark reddish brown, with blackish fovea. Legs brown, proximal part of femora and tibiae yellowish brown. Abdomen greyish black, with 8 small paired spots. *Eyes:* Of equal size; a = ¾, b = 1⅕, c = 1⅓, d = 2⅓. *Legs:* Leg I: femur d 1211; pl 1; patella d 1; tibia d 11, pl 11, v 222; metatarsus pl 11, v 1121. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	2.15	0.95	1.85	—	—	—
II	2.13	0.92	1.66	1.85	1.32	7.88
III	2.00	0.95	1.66	2.25	1.29	8.15
IV	2.59	0.99	2.25	3.08	1.60	10.51
palp	1.05	0.52	0.55	—	0.92	3.04

Epigyne (Fig. 20): With two oblique, dark stripes, flanked by two blackish spots.

Distribution: Simon (1903) described an immature male from Equatorial Guinea. In 1907, he mentioned an adult female of the same species from Fernando Poo,



Figs. 17-19: *Langbiana bicolor* (Jézéquel). **17** Male palp, lateral view; **18** Idem, ventral view; **19** Epigyne.

Fig. 20: *Langbiana octosignata* (Simon). Epigyne.

Figs. 21-22: *Langbiana nyikae* (Pocock). **21** Male palp, lateral view; **22** Idem, ventral view.
Scale lines: 1 mm. Abbreviations: TA = tegular apophysis; C = conductor; EB = embolar base; E = embolus.

an island off the coast of Equatorial Guinea; this female is described above. About the conspecificity of both specimens, we can only follow Simon.

Langbiana nyikae (Pocock) comb.nov. (Figs. 21-22)

Storena nyikae Pocock, 1898: 440 (Descr. ♂, Malawi).
Storena (Suffucioides) nyikae; Jézéquel, 1964: 334.

Type material: Holotype male: Malawi, Nyika Plateau, 2000 m, Whyte leg. (BMNH).

Holotype male

Measurements: Total length 7.44; carapace 3.81 long, 2.63 wide; sternum 1.72 long, 1.42 wide; chelicerae 1.20 long. *Colour:* Carapace dark reddish brown. Legs uniformly reddish brown. Abdomen blackish brown, with pale symmetrical spots. *Eyes:* AME = PME = 1, ALE = 4/5, PLE = 1 1/5; a = 2/3, b = 1 2/5, c = 1, d = 2. *Legs:* Leg I; femur pl 1, d 111; tibia pl 1, v 2212; metatarsus rl 1, v 211112, tarsus v 212. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	2.74	1.02	2.39	2.40	1.82	10.37
II	2.52	1.05	1.97	2.25	1.57	9.36
III	2.52	1.07	1.91	2.49	1.32	9.31
IV	2.99	1.14	2.59	3.45	1.72	11.89
palp	1.42	0.52	0.31	—	1.48	3.73

Male palp (Figs. 21-22): Tibia with short, bluntly pointed apophysis, and deep, lateroventral ridge. Cymbium with 4 terminal and 2 mesal spines; ridge very short, limited to a short fold. Conductor a very short, excavated sclerite. Tegular apophysis without teeth or folds, terminally pointed. Embolar base orientated posteromesally, with an anterior concavity; embolus relatively short, linear.

Distribution: Malawi. Tullgren's citation (1910) from Tanzania refers to another species (see below).

Langbiana kibonotensis new species (Figs. 23-25)

Storena nyikae; Tullgren, 1910: 117 (Misidentification, Tanzania, Kibonoto).

Type material: Holotype male: Kenya, Kajiado District, Namanga, 1200 m, 30 July 1951, Basilewsky & Leleup leg. (MRAC 145964); 1 female paratype, same data. Other material: Tanzania, Kibonoto, cultivated area, October 1905, Sjöstedt leg.; 2 females, 2 male palps (NRS).

Male holotype

Measurements: Total length 5.47; carapace 2.59 long, 1.92 wide; sternum 1.18 long, 1.06 wide; chelicerae 0.82 long. *Colour:* Carapace reddish brown. Legs yellowish brown, tibia I darkened, patella and metatarsus I whitish. Abdomen dorsally blackish, with brown anterior scutum of half length of abdomen, one terminal and 3 posterodorsal whitish spots; venter whitish, with brown longitudinal stripes. *Eyes:* ALE = PME = PLE = 5/6; a = 2/3, b = c = 1, d = 1 1/5. *Legs:* Tibia I distinctly swollen at its ventral margin. Spination of leg I: femur d 11, pl 1; tibia v 2 (terminally); metatarsus pl 1, v 2. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	1.80	0.65	1.58	1.44	1.25	6.72
II	1.70	0.62	1.34	1.42	1.03	6.11
III	1.61	0.62	1.30	1.58	0.91	6.02
IV	1.97	0.72	1.78	2.40	1.25	8.12
palp	1.01	0.36	0.41	—	1.18	2.96

Palp (Figs. 23-24): Tibia with very short, pointed apophysis. Cymbial ridge reduced to a short fold; cymbium terminally with two spines. Conductor with broad base, terminally bluntly pointed. Tegular apophysis relatively broad, with a basal fold and terminally pointed. Embolar base in a transverse position; embolus relatively short and thick, with a longitudinal groove.

Female paratype

Measurements: Total length 6.98; carapace 2.88 long, 1.97 wide; sternum 1.22 long, 1.10 wide; chelicerae 0.79 long. *Colour:* Generally as in male, but tibia I not darkened, abdomen without scutum, and patella and tibia of palp whitish. *Legs:* Spination of leg I: femur and tarsus as in male; tibia pl 1, v 112, metatarsus v 122. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	1.68	0.70	1.42	1.22	1.10	6.12
II	1.56	0.71	1.22	1.32	0.98	5.79
III	1.49	0.67	1.18	1.56	0.94	5.84
IV	1.94	0.74	1.63	2.18	1.22	7.71
palp	0.82	0.43	0.41	—	0.70	2.36

Epigyne (Fig. 25): Hardly sclerotized, with two lateral oblique spots, and a transverse, incomplete furrow just in front of epigastric groove.

Diagnosis: The species is closely related to *nyikae,* but can be easily recognized by the swollen tibia I and the broad embolus in males, and by the transverse furrow in the female epigyne.

Etymology: The name refers to one of the localities where the species was collected.

Distribution: South Kenya, North Tanzania.

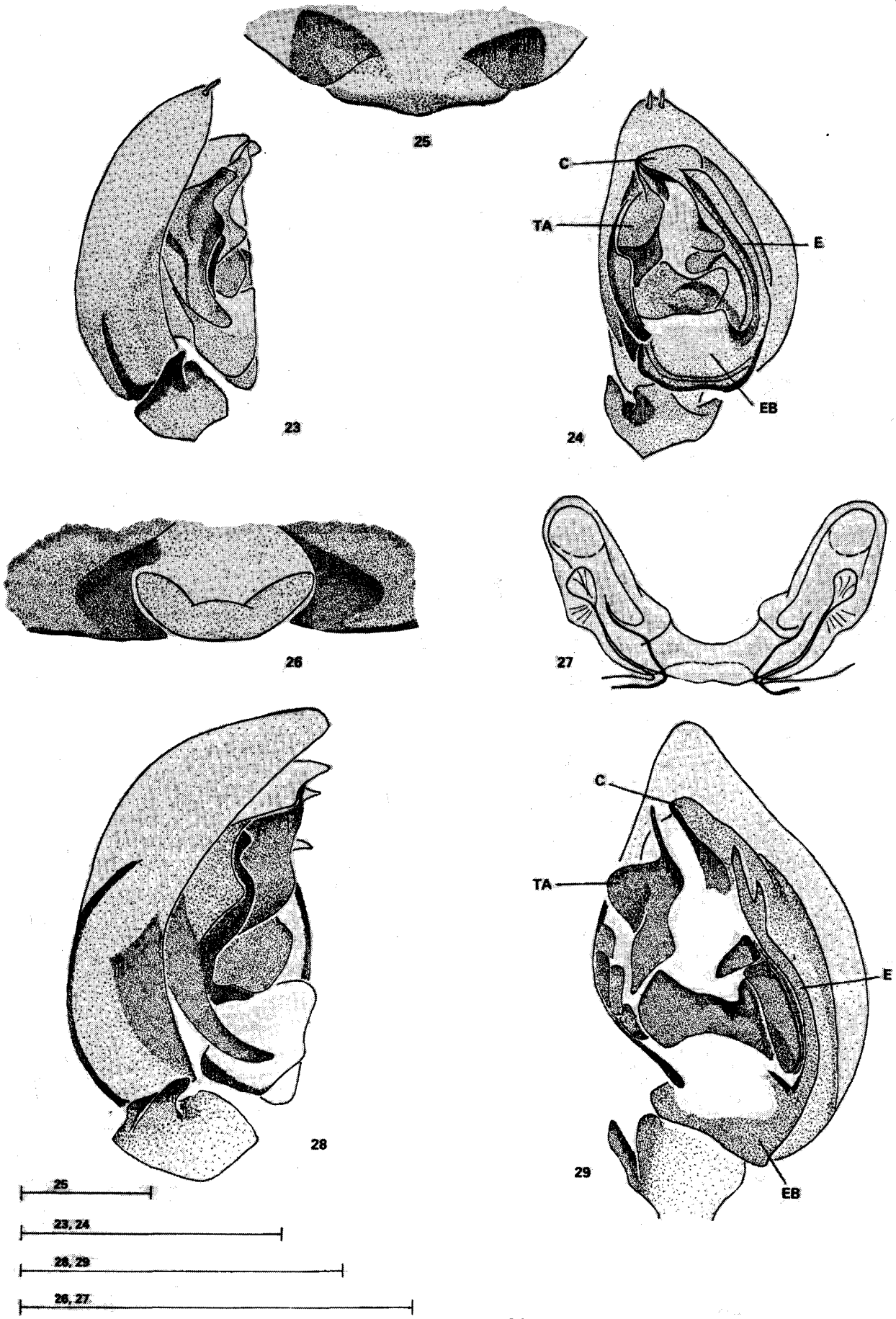
Langbiana decurtata (Thorell) comb.nov. (Figs. 26-27)

Storena decurtata Thorell, 1899: 12 (Descr. ♀, Cameroon).
Suffucioides decurtata; Van Hove & Bosmans, 1984: 90.

Type material: Holotype female: Cameroon, Kitta, 1891, Sjöstedt leg. (NRS). Other material: Cameroon, Mount Cameroon, 7 males, 8 females (Van Hove & Bosmans, 1984).

Female holotype

Measurements: Total length 6.13; carapace 3.00 long, 1.97 wide; sternum 1.15 long, 1.15 wide; chelicerae 0.94 long. *Colour:* Carapace, legs and abdomen all yellowish brown, discoloured. *Eyes:* AME = 1, PME = 2/3, ALE = PLE = 5/6; a = 5/6, b = 7/6, c = 1 3/4, d = 3. *Legs:* Femur I with 1 prolateral and 4 dorsal



Figs. 23-25: *Langbiana kibonotensis* n.sp. **23** Male palp, lateral view; **24** Idem, ventral view; **25** Epigyne.

Figs. 26-27: *Langbiana decurtata* (Thorell). **26** Epigyne; **27** Vulva.

Figs. 28-29: *Langbiana selecta* (Pavesi). **28** Male palp, lateral view; **29** Idem, ventral view.
Scale lines: 1 mm. Abbreviations: TA = tegular apophysis; C = conductor; EB = embolar base; E = embolus.

spines; patella spineless; other segments broken off. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	1.76	0.76	—	—	—	—
II	1.55	0.76	1.18	1.27	1.09	5.85
III	1.67	0.79	—	—	—	—
IV	2.00	0.82	1.67	2.15	1.55	8.19
palp	1.15	0.59	0.52	—	0.70	2.96

Epigyne (Fig. 26): Consisting of a rounded central part, with darkened posterior margin, and flanked by two darker spots. *Vulva:* Fig. 27.

Remark: The male of this species was recently described by Van Hove & Bosmans (1984).

Langbiana selecta Pavesi comb.nov. (Figs. 28-29)

Hermippus selectus Pavesi, 1895: 504 (Descr. ♂, Ethiopia).

Type material: Male holotype: Ethiopia, between Cormoso and Daua (Arussi-Galla), April 1893, V. Bottego leg. (MCG).

Male holotype

Measurements: Total length 7.2; carapace 3.2 long, 2.3 wide. *Colour:* Carapace chestnut brown, sternum and chelicerae orange-brown. Legs yellowish brown, distal parts of femora and tibiae dark orange-brown, giving legs a banded appearance. Abdomen black with pale grey spots, scutum covering ⅔ of abdomen. *Eyes:* AME slightly larger than other eyes; a = ⅓, b = 1, c = ¾, d = 2. *Legs:* Metatarsus I slightly curved. Femur I with 2 dorsal spines; metatarsus I with one dorsal spine. Measurements:

	Fe	Pa	Ti	Mt	Ta	Total
I	2.23	0.80	1.91	1.70	1.59	8.23
II	2.17	0.80	1.70	1.86	1.43	7.96
III	2.17	0.85	1.59	2.17	1.32	8.10
IV	2.70	0.85	2.23	3.32	1.75	10.85

Palp (Figs. 28-29): Tibia with short, oblique apophysis, terminally bluntly pointed. Cymbium with short ridge. Conductor rather slender, directed anterolaterally, terminally rounded. Tegular apophysis slender, basally with a short fold, and terminally narrowed into a distinct apophysis. Embolar base in a transverse position; embolus short, rather broad, with a supplementary lateral tooth before the tip.

Distribution: Ethiopia.

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Palearctic species		
1.	*histrionica* (Simon)	(−)
2.	*islamita* (Simon)	
3.	*hoosi* Kishida	
4.	*libani* (Simon)	(−)
5.	*meadii* (O. P.-Cambridge)	(−)
6.	*reticulata* (Simon)	(−)
7.	*segmentata* (Simon)	(−)
8.	*tribulosa* Simon	(−)
Afrotropical species		
9.	*aethiopica* Pavesi	(−)
10.	*bandamaensis* Jézéquel	(+)
11.	*bicolor* Jézéquel	(+)
12.	*cameroonensis* (Van Hove & Bosmans)	(+)
13.	*decurtata* Thorell	(+)
14.	*etindei* (Van Hove & Bosmans)	(+)
15.	*kibonotensis* n.sp.	(+)
16.	*leonardi* Simon	(+)
17.	*monticola* (Van Hove & Bosmans)	(+)
18.	*nilotica* Simon	(−)
19.	*nyikae* Pocock	(+)
20.	*octosignata* Simon	(+)
21.	*selecta* (Pavesi)	(+)
22.	*senegalensis* Simon	
23.	*submonticola* (Van Hove & Bosmans)	(+)
24.	*sylvatica* (Van Hove & Bosmans)	(+)
25.	*zavattarii* Di Caporiacco	(−)
26.	*zodarioninae* Simon	(−)
Oriental species		
27.	*amabilis* (Thorell)	
28.	*birenifera* Gravely	
29.	*cinctipes* Simon	
30.	*decorata* Thorell	(+)
31.	*dispar* Kulczynski	(−)
32.	*erratica* Ono	+
33.	*exornata* Thorell	(+)
34.	*fasciata* Kulczynski	(+)
35.	*flavopicta* (Simon)	
36.	*flexuosa* (Thorell)	
37.	*gujatarensis* Tikader & Patel	
38.	*fronto* Thorell	
39.	*hilaris* Thorell	(+)
40.	*indica* Tikader & Patel	+
41.	*irrorata* Thorell	(+)
42.	*juvenca* Workman	
43.	*kraepelini* Simon	(−)
44.	*martensi* Ono	+
45.	*melanognatha* Hasselt	(+)
46.	*multiguttata* Simon	
47.	*nepalensis* Ono	+
48.	*nilgherina* Simon	(+)
49.	*obnubila* Simon	
50.	*quinquestrigata* Simon	(−)
51.	*redimita* Simon	(+)
52.	*sciophana* Simon	(+)
53.	*semiflava* Simon	
54.	*sobria* Thorell	(+)
55.	*suavis* Thorell	(+)
56.	*tenera* (Thorell)	(−)
57.	*thorelli* Roewer	(−)
58.	*torquata* Simon	(−)
59.	*uncinata* Ono	+
60.	*vicaria* Kulczynski	(+)
Australian species		
61.	*albomaculata* Rainbow	
62.	*aleipata* Marples	(−)
63.	*annulipes* (L. Koch)	(−)
64.	*auripes* Rainbow	−
65.	*australensis* O. P.-Cambridge	(−)
66.	*beaufortii* Kulczynski	(+)
67.	*braccata* (L. Koch)	(−)
68.	*bradleyi* (O. P.-Cambridge)	(−)
69.	*canalensis* Berland	(−)
70.	*celeripes* (Urquhart)	
71.	*colossea* Rainbow	(−)
72.	*cyanea* Walckenaer	
73.	*eximia* Simon	
74.	*flavipedes* (Urquhart)	
75.	*formosa* Thorell	(−)
76.	*graeffei* (L. Koch)	(−)
77.	*grimwadei* Dunn	−
78.	*hoggi* Roewer	
79.	*inornata* Rainbow	−
80.	*lesserti* Berland	(−)
81.	*leucosema* Rainbow	(−)
82.	*macedonensis* Hogg	(−)
83.	*maculata* O. P.-Cambridge	(−)
84.	*ornata* (Bradley)	
85.	*parvula* Berland	(−)
86.	*picta* (L. Koch)	−
87.	*procera* Thorell	(−)
88.	*rainbowi* Berland	(−)
89.	*rastellata* Strand	(−)
90.	*rufescens* Simon	
91.	*rugosa* Simon	
92.	*scenica* (L. Koch)	(−)
93.	*scintillans* O. P.-Cambridge	(−)
94.	*scitula* (Urquhart)	
95.	*silvicola* Berland	(−)
96.	*spirafera* (L. Koch)	(−)
97.	*striatipes* (L. Koch)	(−)
98.	*tetrica* Simon	(−)
99.	*toddi* Hickman	(−)
100.	*torosa* Simon	(−)
101.	*tricolor* Simon	(−)
102.	*variegata* O. P.-Cambridge	(−)
103.	*variepes* Rainbow	−
Indo-Australian species		
104.	*zebra* Thorell	(+)
Neotropical species		
105.	*absoluta* Gertsch & Davis	−
106.	*analis* Simon	
107.	*bergi* Simon	
108.	*cufodontii* Reimoser	(−)
109.	*caporiaccoi* Brignoli	
110.	*elegans* Nicolet	
111.	*hasselti* Simon	(−)
112.	*hessei* Chamberlin & Ivie	−
113.	*hirsuta* Mello-Leitão	
114.	*lauta* (O. P.-Cambridge)	(−)
115.	*lebruni* Simon	
116.	*lentiginosa* Simon	(−)
117.	*lycosoides* (Nicolet)	
118.	*major* (Keyserling)	(−)
119.	*minor* (Keyserling)	(−)
120.	*mundella* Gertsch & Davis	−
121.	*petropolitana* Mello-Leitão	
122.	*pollii* Hasselt	(−)
123.	*tinga* F. O. P.-Cambridge	(−)
124.	*veracruzana* Gertsch & Davis	−
Nearctic species		
125.	*americana* (Marx)	(−)
Oriental species		
126.	*Langbiana klossi* Hogg	(+)

Table 1: List of "*Storena*" and *Langbiana* species of the world, arranged according to their distribution. (+): genital configuration the same as *Langbiana klossi*, specimen examined; +: idem, examined on figures; (−): genital configuration different from *Langbiana klossi*, specimen examined; −: idem, examined on figures.