

COMMENTS ON THE ORIENTAL GENERA *AGORIUS* THORELL AND *SYNAGELIDES* BÖSENBERG & STRAND (ARANEAE: SALTICIDAE)

Jerzy Prószyński

*Museum and Institute of Zoology,
Polish Academy of Sciences, 00-679 Warsaw, Poland*

Abstract — Three species of *Agorius* Thorell, 1877 are described as new: *Agorius kerinci*, *A. lindu*, and *A. saaristoi*. Redescriptions are given for *A. cinctus* Simon, 1901; *A. constrictus* Simon; 1901, *A. formicinus* Simon, 1901; and *A. semirufus* Simon, 1901. The genus *Agorius* Thorell, 1877 and some species of *Synagelides* Bösenberg & Strand, 1906 display a number of comparable diagnostic characters, varying independently in a mosaic fashion, which makes classification of species uncertain. Similarities in the general plan of internal structures of the epigynum that exist between known females of *Agorius* and females of the genera *Habrocestum*, *Sobasina*, and *Synagelides* are discussed.

Key words: *Agorius*, *Habrocestum*, *Sobasina*, *Synagelides*, new species, taxonomic revision, redescription, spermatheca, Salticidae, Indonesia, Philippines, Singapore

INTRODUCTION

The genus *Agorius* Thorell, 1877 was described from Indonesia: first from Sulawesi (Celebes) and now also known from Lombok, Borneo, Java, and Sumatra, as well as from Singapore, the Malay Peninsula, the Philippines, New Guinea, and New Britain. Its environment is mentioned on labels as leaf litter in rain forest. It is identifiable by the unique proportions of patella I, which is almost as long as femur I, and on the basis of a concentration of spines of tibia I on the distal (apical) half of the segment, ventrally. Metatarsal I spines are unusually long. Body shape is elongate and narrow, with abdomen constricted, in males the constriction being much more pronounced, with abdominal bumps also having a sclerotized dorsal surface. The genus was originally described from a female of the single species *Agorius gracilipes*, with females of five more species described subsequently. We now know males of nine species, but only four of them are matched with females (*A. baloghi*, *A. constrictus*, *A. kerinci*, and *A. lindu*), and these only provisionally. Conspecificity of these forms is uncertain and aggravated by significant differences of body appearance between females and males (sexual dimorphism), but genital organs are also diverse. The only common characters for all these forms therefore remain leg I proportions and spination, but even these are not unequivocal, because of similarity of leg I in

Synagelides palpalis, which has genital organs typical of the very speciose genus *Synagelides* Bösenberg & Strand, 1906.

The genus *Synagelides* is seemingly uniform, with very special genital organs in males and females; however, there are a few species in Vietnam, Borneo, and China with bodies similar to *Agorius*. The general plan of internal structures of the epigynum in some *Agorius* and *Synagelides* species can, perhaps, be compared with otherwise very different structures in not related *Habrocestum* Simon, 1876 and *Sobasina* Simon, 1898.

The aims of the present paper were to define *Agorius* species, as they were originally classified; give added descriptions of three new, related species; and draw attention to the unsolved problems of relationships and conspecificity of the species, pending further studies. *Agorius baloghi* Szuts, 2003 is not discussed.

MATERIALS AND METHODS

Specimens were studied under a stereomicroscope, with magnification of up to 100x (with an additional 2x objective lens giving 200x). Palpal organs were detached from the body and fixed for examination in sand on the bottom of a Petri dish with 75% ethanol. After examination, the palps were placed in microvials and stored with the specimen in the same collection vial. The epigynum was drawn from the intact specimen, then cut off for examination of internal structure. The tip of a small scalpel was slipped under the epigynum, the integument around it was cut, and the epigynal plate was placed in a 10-20% aqueous KOH solution and cleared for about 24-72 hours, after which it was stained in Chlorazol Black E alcohol solution, mounted on a temporary slide in clove oil, and examined under a compound microscope (objectives 20x and for details 40x). After examination, the epigynum was deposited in a microvial and stored together with the specimen. All drawings were made with a square net micrometer (ocular graticule with squares) on paper with a temporary faint grid (with dimensions selected to fit the requested drawing size).

The type specimens studied were borrowed from Museum Paris [=MNHN] - Laboratoire de Zoologie (Arthropodes), Muséum National d'Histoire Naturelle, Paris; Personal Collection of Dr. Ch. L. Deeleman-Reinhold, Ossendrecht, the Netherlands. I also used descriptions and drawings of previously studied specimens from Museum London [=BMNH] - Natural History Museum (British Museum), London, UK, Museum Genoa [=MSNG] - Museo Civico di Storia Naturale, Genoa, Italy.

TAXONOMIC SURVEY

Genus *Agorius* Thorell, 1877

Type species: *Agorius gracilipes* Thorell, 1877

Definition. Males of all species have a narrow, elongate body, with abdomen constricted in the middle between two abdominal swellings, anterior and posterior, both having the dorsal surface hardened.

Females, also narrow and elongate, have a higher and broader abdomen with shallower constriction than in males and no dorsal abdominal hardening. The shape and proportions of leg I are particularly diagnostic – it is long, thin, with the patella almost as long as the femur, pairs of long tibial spines concentrated ventrally on the anterior (distal) half of tibia I, and a single lateral row of long metatarsal spines. Genital organs are diverse, in some species resembling those in members of the genus *Synagelides* Bösenberg & Strand, 1906.

Agorius borneensis Edmunds & Prószyński, 2001

(Figs. 3, 18, 35, 36, 45, 46)

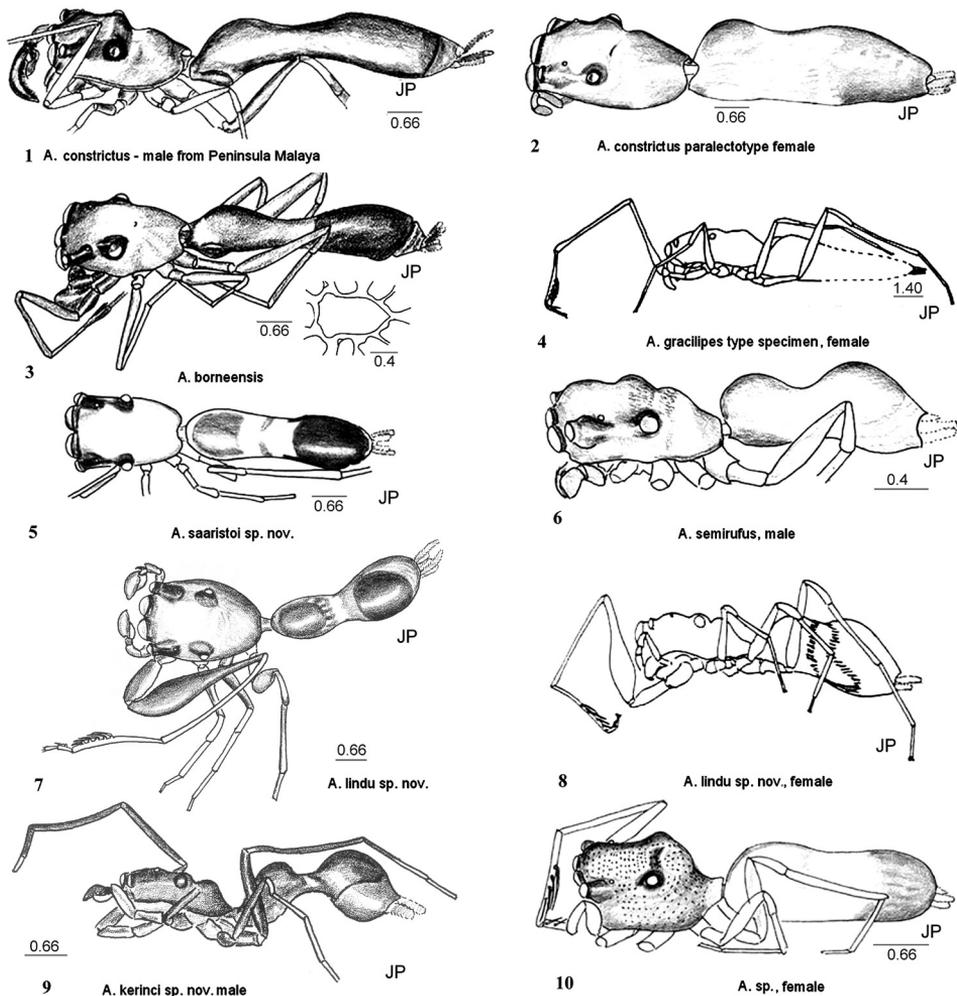


Fig. 1-10. Body shape diversity in *Agorius*. *A. constrictus* - male from the Malay Peninsula (1), *A. constrictus*, paralectotype female (2), *A. borneensis* – body and sternum (3), *A. gracilipes*, type specimen, female (4), *A. saaristoi* sp. nov. (5), *A. semirufus*, female (6), *A. lindu* sp. nov., male (7), *A. lindu* sp. nov., female (8), *A. kerinci* sp. nov., male (9), *A. sp.* from Simon’s collection (10).

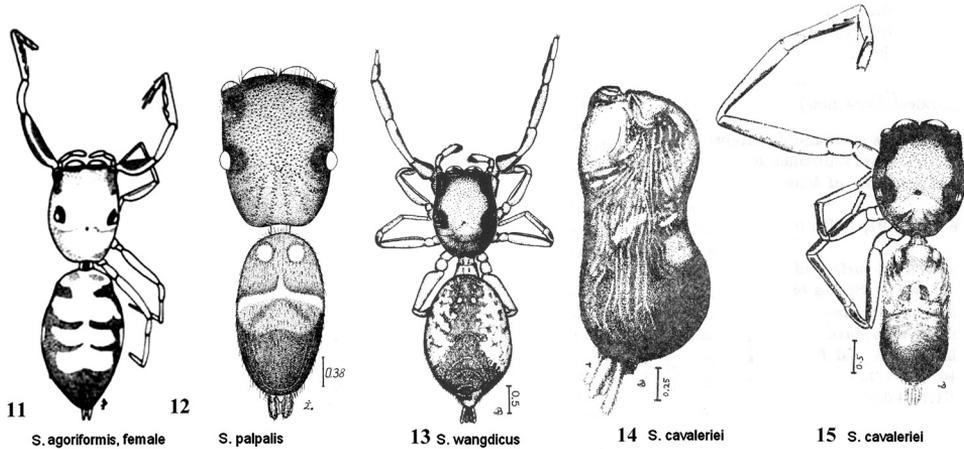


Fig. 11-15. Body shape diversity in *Synagelides*. *S. agoriformis* Bösenberg & Strand, 1906, female (11), *S. palpalis* Zabka, 1985 (12), *S. wangdicus* Bohdanowicz, 1978 (13), *S. cavaleriei* (Schenkel, 1963) (14-15).

Agorius borneensis Edmunds & Prószyński, 2001. 12 (3): 139-140, Figs 1-8.

Agorius borneensis: Prószyński, 2003b (on line).

Material. One male (holotype), one male (paratype) "Malaysia: Sabah, Sepilok Reserve, on forest floor, 3 March 1989 (accession No. BMNH(E) 2000-184. Museum London.

Distribution. Malaysia [Borneo]: Sabah.

Remarks. A detailed description is given in Edmunds and Prószyński (2001). Classification into *Agorius* is warranted by the thin, elongate body (Fig. 3), truncated sternum, patella I almost as long as femur I, and thin, elongate tibia I, with pairs of ventral spines concentrated in its anterior (distal) part. The palpus distinctly resembles that in members of the genus *Synagelides*, with enormous patella, longer and more robust than the small femur, and broad cymbium. The tibial apophysis (RTA) is biramous, with both rami very large (Figs 45-46), the dorsal one articulating with the lateral surface of the cymbium, but neither grown into it nor immobilized, as in *Synagelides palpalis* and other species of that genus (Figs 47-48).

The bulbus is large, appears intermediate between *Agorius* and *Synagelides*, has a distinctly developed prolateral part, terminates in a large bent process, and is encircled by a broad coil of the thin embolus (Figs. 35-36).

Agorius cinctus Simon, 1901

(Fig. 53)

Agorius cinctus Simon, 1901a: 144.

Agorius cinctus: Simon, 1901b: 535, Figs. 644-648.

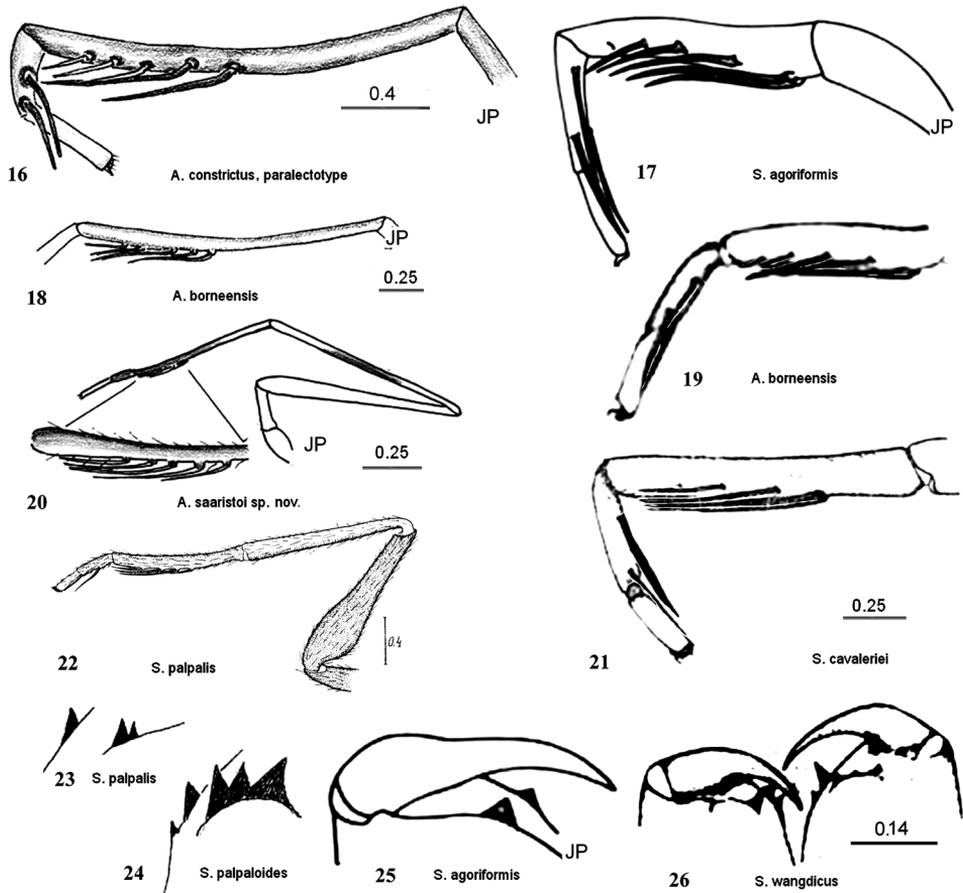


Fig. 16-26. Leg I and cheliceral teeth diversity in *Agorius* and *Synagelides*. *Agorius constrictus* paralectotype (16), *S. agoriformis* (17), *A. borneensis* (18), *S. wangdicus* (19), *A. saaristoi* sp. nov. (20), *S. cavaleriei* (21), *S. palpalis* (22-23), *S. palpaloides* Żabka, 1985 (24), *S. agoriformis* (25), *S. wangdicus* (26).

Agorius cinctus: Prószyński, 2003b (on line).

Material. One female (holotype): "10767. *Agorius cinctus* E.S. Lombok (CF)". Museum Paris.

Other collections: Hamburg (Prószyński, 1971, 2003 b (on line)).

Distribution. Indonesia: Lombok Is.

Description. The only known specimen, the holotype, is an immature female with an incompletely formed epigynum (Fig. 53), which has visible dark pigmentation of the posterior half and two indistinct anterior grooves. This epigynum can be compared with the epigynum in *A. constrictus* (Fig. 51); unfortunately its internal structure is not known. The abdomen resembles that of females of other species, being higher and broader than in males.

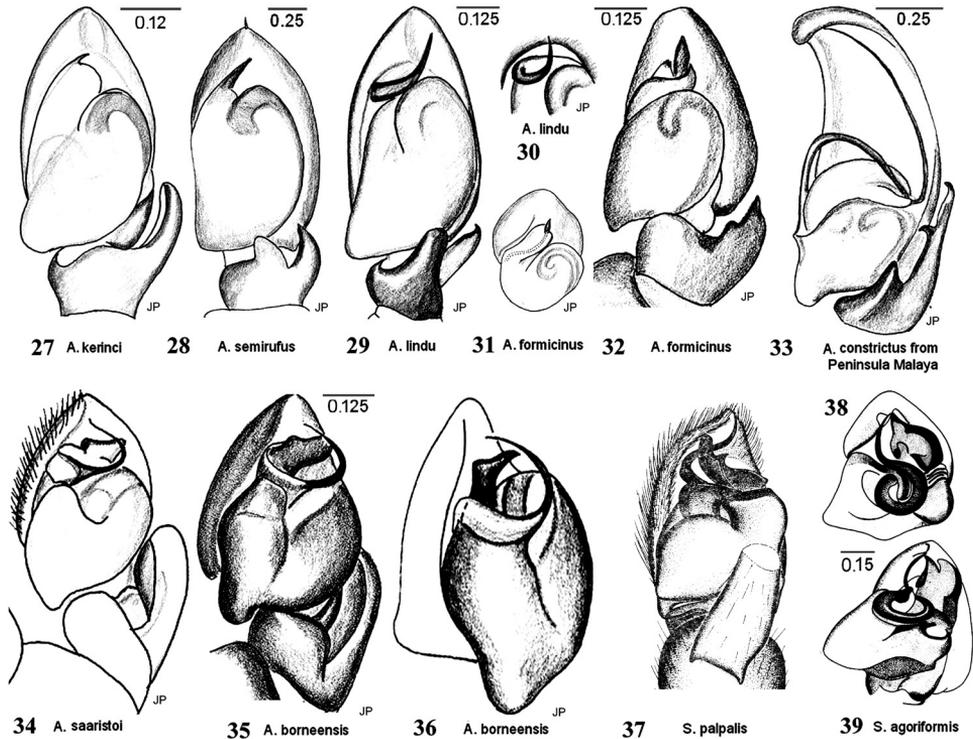


Fig. 27-39. Male palpal organ diversity in *Agorius* and *Synagelides*, ventral view. *Agorius kerinci* sp. nov. (27), *A. semirufus* (28), *A. lindu* sp. nov. (29-30), *A. formicinus* (31-32), *A. constrictus* from the Malay Peninsula (33), *A. saaristoi* sp. nov. (34), *A. borneensis* (35-36), *Synagelides palpals* (37), *S. agoriformis* (38-39).

***Agorius constrictus* Simon, 1901**

(Figs. 1, 2, 16, 33, 43, 51)

Agorius constrictus Simon, 1901a: 144.

Agorius constrictus: Simon, 1901b: 535, Figs 644-648.

Agorius constrictus: Koh, 1989: 133, color photo 133.

Agorius constrictus: F. and J. Murphy, 2000: 303, Plate 31.6.

Agorius constrictus: Prószyński, 2003b (on line).

Material. one male lectotype (new, here designated), one female paralectotype (new, here designated) "15159 *Ag.[orius] constrictus* ES. Singapore". Museum Paris. one male, "*Agorius constrictus* Malay Peninsula, Genting Highlands, Leg. M. Edmunds". Museum London.

Distribution. Malaysia: Malay Peninsula; Singapore.

Description. Male. The body is elongate with a very thin abdomen, constricted,

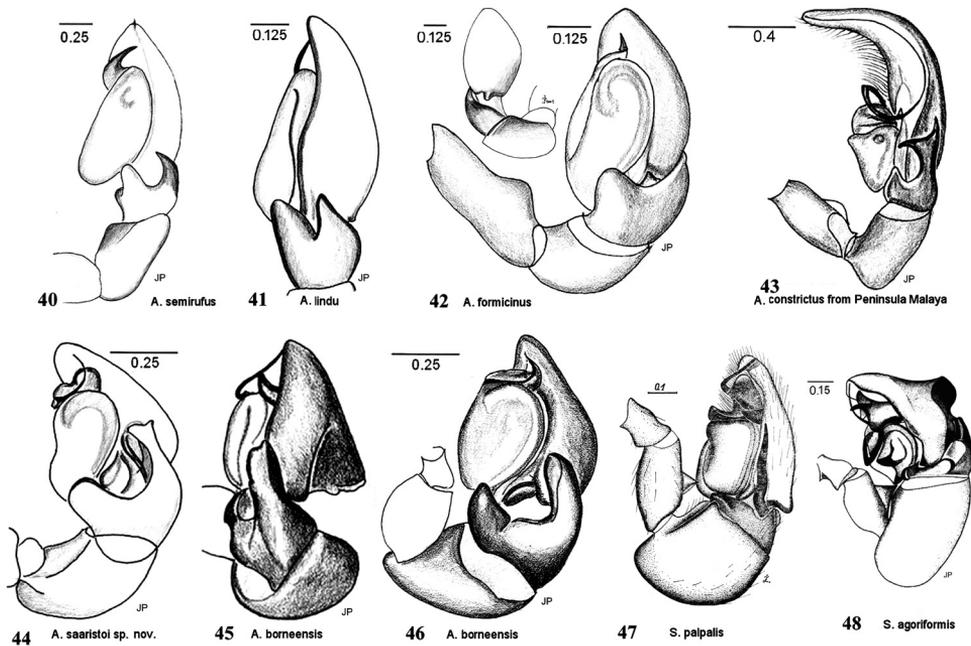


Fig. 40-48. Male palpal organ diversity in *Agorius* and *Synagelides*, lateral view. *A. semirufus* (40), *A. s lindu* sp. nov. (41), *A. formicinus* (42), *A. s constrictus* from the Malay Peninsula (43), *A. saaristoi* sp. nov. (44), *A. borneensis* (45-46), *Synagelides palpalis* (47), *S. agoriformis* (48).

and slightly bent (Fig. 1). The eye field of the cephalothorax, slightly converging to the rear, is raised above the thorax and convex, with its posterior edge forming a transverse depression just behind eyes III. The basic color is orange-brown, with some darkening on the cephalic part. The patella and tibia I are very thin and long, five pairs of long stout spines are concentrated on the anterior (distal) part of the tibia, and two long spines are present on metatarsus I. The palpal organ is most unusual, with a very long tip of the cymbium and embolus, extending far beyond the bulbus (Fig. 33); analogies of such elongation are known from the unrelated Eastern Palaearctic genera *Yllenus* Simon, 1868 and *Marpissa* Koch C.L., 1846. The tibial apophysis (RTA) is biramous, with a dorsal ramus as long as the bulbus, and with a tooth-like protuberance.

Female. The abdomen is broader and higher than in the male and has less striking constriction, without dorsal hardenings (Fig. 2). Leg I is typical, as in the male (Fig. 16). The epigynum is an oval depression laterally and anteriorly limited by a sclerotized edge, its posterior half being more darkly pigmented, with a pair of narrower grooves that are clearly delimited (Fig. 51). I abstained from making a preparation from the paralectotype specimen.

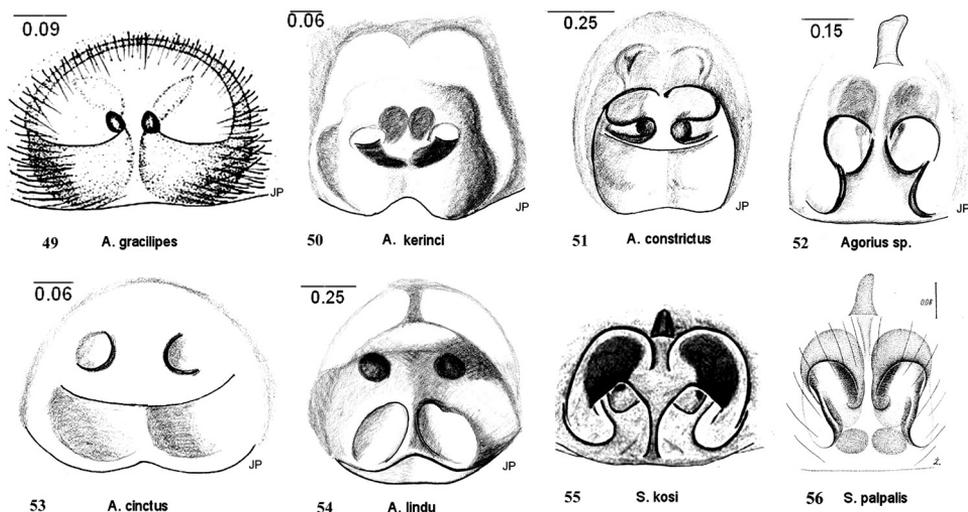


Fig. 49-56. Epigynum diversity in *Agorius* and *Synagelides*. *A. gracilipes* (49), *A. kerinci* sp. nov. (50), *A. constrictus* (51), *A. sp.* (52), *A. cinctus* (53), *A. lindu* sp. nov. (54), *S. kosi* Logunov & Hereward, 2006 (55), *S. palpalis* (56)..

***Agorius formicinus* Simon, 1903**

(Figs. 31, 32, 42)

Agorius formicinus Simon, 1903: 307.

Agorius formicinus: Prószyński, 2003b (on line).

Material. One male, lectotype (new, here designated) „22175. *Ag[orius] formicinus* E.S. Palembang (Bonek)“. Museum Paris.

Other collections: Vienna (Prószyński, 1971, Prószyński 2003b, on line).

Distribution. Indonesia: Sumatra.

Remarks. The palpus could be interpreted as representing the initial state of evolution towards *Synagelides*: the patella is enlarged (Fig. 42) but not as much as in *Synagelides palpalis*, and has a small ventral protuberance. The tibia is large, with an unusually big tibial apophysis (RTA), rounded in retrolateral view, and with some indentation visible in the ventral position (Fig. 32). The prolateral part of the bulbus is weakly developed; the bulbus ends with a rounded flap that terminates in a small triangular embolus, bent but not coiled (Fig. 31).

***Agorius gracilipes* Thorell, 1877**

(Figs. 4, 49, 57)

Agorius gracilipes Thorell, 1877: 557.

Agorius gracilipes: Badcock, 1918: 318, Fig. 12 (conspecificity uncertain).

Agorius gracilipes: Prószyński, 1968: 26: 221-225, Figs 10-12.

Agorius gracilipes: Prószyński, 2003b (on line)

Material. One female (holotype) – “*Agorius gracilipes*. Thor. Typus. Kandari (Selebes) 1874. O. Beccari”. Museum Genoa.

Other collections: Paris (Prószyński, 1971; Prószyński, 2003b, on line).

Distribution. Indonesia: Sulawesi.

Remark. The type species of the genus and conspecificity with other species of *Agorius* require confirmation.

Description. Male unknown.

Body measurements of holotype female of <i>Agorius gracilipes</i>	in mm	in % of length of cephalothorax
Length/Length of cephalothorax	2.35	100%
Length of eye-field	1.51	64%
Height of cephalothorax	100	42%
Width of eye-field at eyes I	1.38	59%
Width of eye-field at eyes III	1.38	59%
Length of abdomen	3.24	138%

	Length of legs of holotype female of <i>Agorius gracilipes</i> (in mm)						five segments	
	tarsus	metatarsus	tibia	patella	femur	in mm	as % of leg I	
Leg I	0.41	0.35	1.35	2.21	1.94	5.85	100%	
Leg II	0.54	0.84	0.97	0.57	1.30	4.22	72%	
Leg III	0.54	1.08	1.03	0.54	1.32	4.51	77%	
Leg IV	0.73	1.76	1.67	0.81	1.89	6.86	117%	

Female. A redescription of a single female from Sulawesi, the holotype, was given by Prószyński (1968) without comparison of other species, which were not revised at that time. The female in question externally resembles females of other *Agorius* and has an abdomen that is elongate and thin (but not as thin as in males) and long and thin leg I, with a very long patella and spines concentrated in the anterior (distal) part of tibia I (Fig. 4). The epigynum (Fig. 49) resembles the outline of the not fully developed epigynum in *A. cinctus* (Fig. 53). Internal structures of the epigynum differ from those in other species, and it takes some imagination to find a resemblance in the general plan to the remaining two known females of *Agorius* (Figs. 58-59). It consists of narrow copulatory ducts running anteriorly; the spermathecae are large and bean-shaped, terminate in a narrow anterior duct, and are completed with a small enlargement from which the fertilization duct arises (Fig. 57). The enclosed drawing was made in 1966, when minute details (e.g., the porous spot and scent gland opening) were not understood, and so are not marked.

***Agorius kerinci* sp. nov.**

(Figs. 9, 27, 50, 58)

Agorius sp. 3 Prószyński, 2003 (on line).

Agorius sp. Deeleman-Reinhold, 2001: Fig. 62.

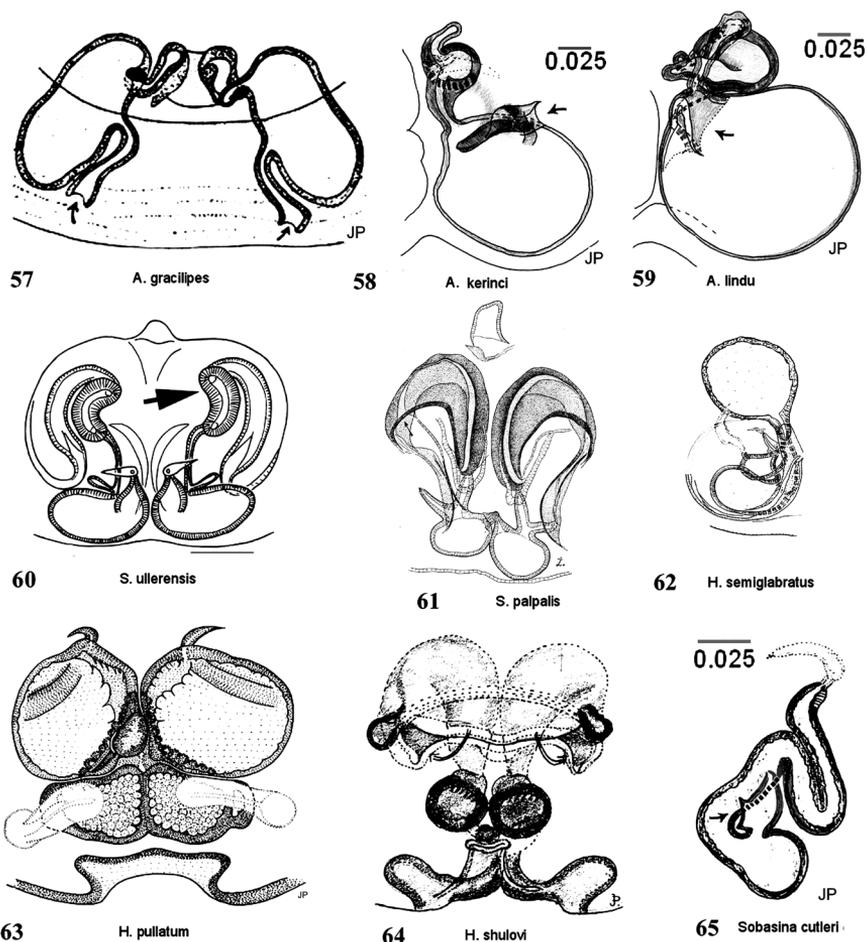


Fig. 49-56. Diversity of epigynum internal structure in three species of *Agorius* as compared with *Synagelides*, *Habrocestum*, and *Sobasina*. *A. gracilipes* (57), *A. kerinci* sp. nov. (58), *A. lindu* sp. nov. (59), *Synagelides ullerensis* Bohdanowicz, 1987 (60), *S. palpalis* (61), *Habrocestum semiglabratus* (Simon, 1868) (62), *Habrocestum pullatum* (Simon, 1876) (63), *Habrocestum shulovi* Prószyński, 1999 [2000] (64), *Sobasina cutleri* Berry, Beatty & Prószyński, 1998 (65).

Material. One male holotype, one female allotype, one imm. “*Agorius* sp. 3. Sumatra: Kerinci Seblat National Park, near river from leaves, 800 m, 21-30. VII. 88. Leg. Suharto Djojosedharmo”. Coll. Deeleman. Personal Collection of Dr. Ch. L. Deeleman-Reinhold, Ossendrecht, the Netherlands.

Distribution. Indonesia: Sumatra - Kerinci Seblat National Park.

Description. Male. This species has a characteristic thin elongate body, with long thin leg I, particularly long patella I, and spines concentrated in the anterior (distal) part of tibia I. It seems to differ from other species in having a strongly bent abdomen, with constriction more striking because of stronger development of its anterior

and (especially) posterior parts (Fig. 9). The palpal tibia, cymbium, and bulbus do not differ from the average generalized shapes in other Salticidae (Figs. 27, 41). The prolateral part of the bulbus forms a broad flap, more extended anteriorly than the retrolateral part and seminal receptacle. The embolus is minute, claw-like. The tibial apophysis (RTA) is biramous, both rami being of equal length, separated by a narrow slit-like gap, the ventral one slightly broader.

Female. The epigynum (Fig. 50) is light, encircled by a more darkly pigmented frame. The organ in question has a median pair of small round grooves, followed by a pair of diagonal darkenings of unknown function.

Internal structures of the epigynum (Fig. 58) consist of two chambers of unequal size, connected by a short thick-walled duct. The posterior chamber is globular, large, and thin-walled. The copulatory opening forms a small pocket-like chamber, is located ventral to the antero-lateral part of the large chamber, and opens to the spermatheca via a short bent connection. Visible on the epigynum, a sclerotized darkening is located in this area, but I was not able to see any connection of it with the duct or spermatheca. The posterior chamber is connected with the thick-walled much smaller anterior one by a sclerotized duct having gradually thickened walls. This chamber has a duct-like extension which could possibly be part of scent gland armor. The fertilization duct arises from the median part of the anterior chamber, dorsal to it, but I could not observe any porous spot, which is usually located nearby.

The general plan of internal structures in this species, including two chambers of unequal size, can be tentatively compared with structures in other *Agorius* species, as well as in *Synagelides* (Figs. 57, 59, 60–62) and with the more distant *Sobasina cutleri* Berry, Beatty & Prószyński, 1998 (Fig. 60).

***Agorius lindu* sp. nov.**

(Figs. 7, 8, 29, 30, 41, 54, 59)

Agorius sp. 5. Prószyński, 2003 (on line).

Agorius sp. Deeleman-Reinhold, 2001: Fig. 60.

Material. One male holotype, one female allotype, “*Agorius* sp. 5, Sulawesi, Lore Lindu reserve, Marena (Palu), riverside, leaf litter, 23. VII. 82. Leg. C. L. Deeleman”. Personal collection of Dr. Deeleman-Reinhold.

Distribution. Indonesia: Sulawesi - Lore Lindu Reserve.

Description. Male. Males of the new species are similar in general appearance and in genital organs to males of *Agorius kerinci* from Sumatra, but distinctly different in details (Fig. 7). The cephalothorax is broad, the basal part of femur I distinctly broadened, and the trochanter relatively broad. The embolus is longer, makes a single coil atop the bulbus, and has a base not distinctly separated from the bulbus (Fig. 30). The ventral ramus of the tibial apophysis (RTA) is somewhat broader than in *Agorius kerinci*.

Female. The basal part of femur I is broadened (Fig. 8). Grooves of the epigynum are larger, oval, located in the posterior part of the epigynum; a pair of small translucent dark spots are more distant from the grooves (Fig. 54). The thin-walled posterior chamber of the spermathecae is larger than in *Agorius kerinci*, with the copulatory opening ventral to the antero-medial part of that chamber. The thick-walled duct connecting both chambers runs diagonally forward to the bent, thick-walled anterior chamber, which touches the edge of the posterior chamber (Fig. 59).

***Agorius saaristoi* sp. nov.**

(Figs. 5, 20, 34, 44)

Agorius sp. 13, Prószyński, 2003 (on line).

Material. One male holotype – “*Agorius* sp. 13. Borneo/E. Sabah: Danum Valley Field Center, 6-16. V. 91. Leg. C. L. Deeleman”. Personal Collection of Dr. Ch. L. Deeleman-Reinhold, Ossendrecht, the Netherlands.

Distribution. Malaysia [Borneo]: Sabah.

Etymology. Named for the late arachnologist Michael I. Saaristo of Turku University, Finland.

Description. The body and legs I are similar to those in males of other species of *Agorius* (Figs. 5, 20). The palpus, however, is intermediate between *Agorius* and *Synagelides*, although its proportions are somewhat less pronounced. The palpal patella is very large, longer and thinner than the small femur, while the tibia is almost as long as the cymbium and has an enormous biramous apophysis with rami separated by a broad gap (Figs. 34, 44). The cymbium is thick, with a broad postero-dorsal depression; the embolus makes a single coil around the plate-like process of its base. We can conclude that appearance of the palpus is intermediate between *Agorius formicinus* (Figs. 31, 32, 42) and *A. borneensis* (Figs. 18, 35, 36, 45, 46), but less modified than in *Synagelides palpalis*.

***Agorius semirufus* Simon, 1901**

(Figs. 6, 28, 40)

Agorius semirufus Simon, 1901a: 143.

Agorius semirufus: Simon, 1901b: 535, Fig. 649.

Agorius semirufus: Prószyński, 2003b (on line).

Material. one male lectotype (new, here designated) – “*Agorius semirufus* Sim., Antipolo”. Museum Paris.

Distribution. Philippines.

Remark. Classification uncertain.

Description. The body is elongate, its abdomen shorter, higher, and broader than in males of other related species, resembling that in females (Fig. 6). The palpus with patella resembles that in *Synagelides*, but is proportionately not as large (Fig. 40); the

tibial apophysis (RTA) is biramous. The bulbus is of average size, with an indistinctly developed base of the embolus, which is short, slightly inclined, and in retrolateral view slightly bent, but not so much as to form a coil (Fig. 28).

Agorius sp. unidentified Prószyński, 2003

(Figs. 10, 52, 56)

Agorius sp. unid. Prós., 2003 (on line).

Material. One female “2315. *Agorius* ft. pr. Kha[?]la CBL”[?]. Coll. Simon. Museum Paris.

Distribution. The incomplete and illegible label gives no collecting locality or geographical area, which could be S China, Vietnam, the Philippines, or Sumatra.

Remarks. The lack of a locality of origin prevents description of this specimen as a new species. It was found unidentified in the Simon’s collection in Museum Paris, with a label indicating to have been collected by one “CBL” from an unknown locality given as “f[ore]t pres Kha?la” [?]. The body shape and leg I proportions (Fig. 8) warrant placing it in the genus *Agorius*, but the epigynum’s outline (Fig. 52) indicates a rather close relationship to *Synagelides palpalis* Żabka, 1985 (Fig. 56). The scarcity of information on these spiders justifies publication of the enclosed drawings.

Resemblances of internal structures of the epigynum

The general plan of the epigynum in the majority of the Salticidae, which I have studied for 50 years (Prószyński, elsewhere), seems to be rather simple: there is a pair of copulatory openings, each connected by a copulatory duct to the spermatheca, from which a fertilization duct leads to the uterus. The initial part of the spermatheca has a small and indistinct opening, in exceptional cases with a preserved connection to body surface, which I used to call the “opening to the scent gland”, while the posterior part of the spermatheca has a small porous spot, which may promote the survival of sperm stored in the spermatheca. There is much variation in these structures among the over 5000 species of Salticidae: the proportions of different parts vary, the walls may be membranous or sclerotized, thin or very thick; the duct may be short or long and straight, bent, or coiled into a spiral; the spermatheca may be globular or have a more complex shape; and its internal surface may be smooth or armored with various spines or ridges.

Internal structures of the epigynum in *Agorius* depart the above general plan by having a spermatheca divided into anterior and posterior parts connected by a narrow duct. This unusual plan can also be seen in the very complicated epigynum of *Synagelides*, which is best illustrated by Logunov and Hereward (2006) (Fig. 60) and by Żabka (1985) (Fig. 61) and which possibly indicates relationship. Can these also be homologous with the two-chambered spermatheca in some *Habrocestum* (Figs 62-64) and the strange posterior spermatheca in *Sobasina* (Fig. 65), the latter appearing as a long thick-walled duct, either bent or coiled?

DISCUSSION

The state of taxonomic knowledge of *Agorius* is much more complicated than it appeared to be at the beginning of the research. The diversity is much greater and there are large gaps between particular forms, suggesting the existence of intermediate species yet to be discovered. The geographical distribution is much broader, but very incompletely known. Explanation of resemblances to *Synagelides* and classification into genera must be postponed until more species are known.

Acknowledgements — Diagnostic drawings of Simon's type specimens were made on specimens borrowed for the purpose from the Muséum National d'Histoire Naturelle in Paris through the courtesy of Dr. Christine Rollard. Drawings of new species of *Agorius* were made for Dr. C. L. Deeleman - Reinhold in 1994-1995 on specimens from her collection and are published now with her permission. Drawings of *A. gracilipes* and *A. borneensis* are reprinted after first being published in *Annales Zoologici* (1968, 2001). Comparative drawings of *Synagelides*, *Habrocestum*, and *Sobasina* are copied from *Annales Zoologici* (1985, 1979, 2003a), *Bulletin of the British Arachnological Society* (2006), *Entomologica Basiliensia* (1978), and *Journal of Arachnology* (1998) with the consent of their authors: Mr. A. Bohdanowicz, Dr. D. Logunov, and Dr. M. Žabka. I wish to express my sincere gratitude to the above-mentioned persons and publishers of the respective periodicals.

REFERENCES

- Badcock, H. D. (1918). Antlike Spiders from Malaya, collected by the Annandale-Robinson Expedition 1901-02. *Proc. Zool. Soc. London*, **1917**: 277-321.
- Berry J. W., Beatty J. A., and J. Prószyński (1998). Salticidae of the Pacific Islands. III. Distribution of seven genera, with description of nineteen new species and two new genera. *J. Arachnol.* **26** (2), 149-189.
- Bohdanowicz, A. (1978) Araneae: Salticidae, Genus *Synagelides*. Ergebnisse der Bhutan-Expedition 1972 des Naturhistorischen Museum in Basel. *Entomol. Basil.* **27**.
- Deeleman-Reinhold, Ch. (2001). Forest spiders of South East Asia, 591 pp. Koninklijke Brill NV, Leiden.
- Edmunds, M., and J. Prószyński (2001). New species of Malayasian *Agorius* and *Sobasina* (Araneae: Salticidae). *Bull. Brit. Arachnol. Soc.* **12** (3), 139-140.
- Koh, J. (1989). *A Guide to Common Singapore Spiders*, Singapore Science Center.
- Logunov, D. V., and J. Hereward (2006). New species and synonymies in the genus *Synagelides* Strand in Boesenberg & Strand, 1906 (Araneae: Salticidae). *Bull. Brit. Arachnol. Soc.* **13** (8), 281-292.
- Murphy, F. and J. (2000). *An Introduction to the Spiders of South East Asia*, 267-356. Malaysian Nature Society, Kuala Lumpur.
- Prószyński, J. (1968). Redescriptions of the type-species of genera of Salticidae (Araneida). *Ann. Zool. (Warsaw)* **26**, 217-225.
- Prószyński, J. (1971). Catalog of Salticidae (Aranei) specimens kept in major collections of the world. *Ann. Zool. (Warsaw)* **28**, 367-519.
- Prószyński, J. (1979). Systematic studies on East Palaearctic Salticidae III. Remarks on Salticidae of the USSR. *Ann. Zool. (Warsaw)* **34**, 299-369.
- Prószyński, J. (2003a). Salticidae (Araneae) of the Levant. *Ann. Zool. (Warsaw)* **53** (1), 1-180.
- Prószyński, J. (2003b). *Salticidae (Araneae) of the World*. [On line <http://www.miiz.waw.pl/salticid/main.htm>]
- Simon, E. (1901a). Descriptions d'espèces nouvelles de la famille des Attidae (suite). *Ann. Soc. Entomol. Belg.* **45**, 141-161.
- Simon, E. (1901 b). *Histoire Naturelle des Araignees*, 381-668. Paris.

- Simon, E.* (1903). Etudes arachnologiques. 33e Mémoire. LIII. Arachnoides recueillis a Phuc-Son (Annam) par M. H. Fruhstorfer (Nov.-Dec.1899). *Ann. Soc. Entomol. Fran.* **71**, 725-736.
- Szuts, T.* (2003). New species of *Agorius* Thorell, 1877 (Araneae: Salticidae) from New Guinea. *Acta Zool. Acad. Sci. Hung.* **49**, 62.
- Thorell, T.* (1877). Studi sui Ragni Malesi e Papuani. I. Ragni di Selebes raccolti nel 1874 dal Dott. O. Beccari. *Ann. Mus. Civ. Stor. Nat. Genova* **10**, 341-634.
- Žabka, M.* (1985). Systematic and zoogeographic study on the family Salticidae (Araneae) from Viet Nam. *Ann. Zool. (Warsaw)* **39** (11), 1-485.

