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A CONTRIBUTION TO THE KNOWLEDGE OF THE GENUS SPHEGINOBACCHA DE MEIJERE (DIPTERA, SYRPHIDAE)

by

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With nine text-figures and three plates

In 1883 J. M. F. Bigot described *Speghina? macropoda* after one female from "Birmania". Bigot used to place a question mark after the generic name when he was not sure that the described species did belong to the genus in question. The not forwardly produced oral margin, the presence of a facial tubercle, the spinose hind femora, and the wing-venation created a doubt about the correct use of the name *Speghina*. He thought *macropoda* might need a new genus.

De Meijere (1908) erected the new genus *Spheginobaccha* with *Sphegina macropoda* Bigot as type-species. He recorded one ♂ and one ♀ from Semarang, Java. He described both specimens and figured the wing. Though in many respects his female answered to Bigot's description of the female, De Meijere found also minor differences.

Brunetti (1923) recorded *S. macropoda* (Bigot) from India on the score of Bigot's specimen from Burma, but he did not know the species. The given description of *macropoda* is a compilation from that by Bigot and that by De Meijere.

However, in the same work Brunetti (p. 120) recorded six males and four females, and figured the male abdomen, of his *Baccha robusta*. According to Hervé-Bazin (1923) this should be the same as *S. macropoda* (Bigot). This may be right as Brunetti's description of *Baccha robusta* does not contain anything contrary to that of Bigot. It is strange, however, that Brunetti did not mention the spinose hind-femora and the curious venation of the wings.

Finally, Hull (1937) described *Spheginobaccha melancholia* after two females from Cochin-China.

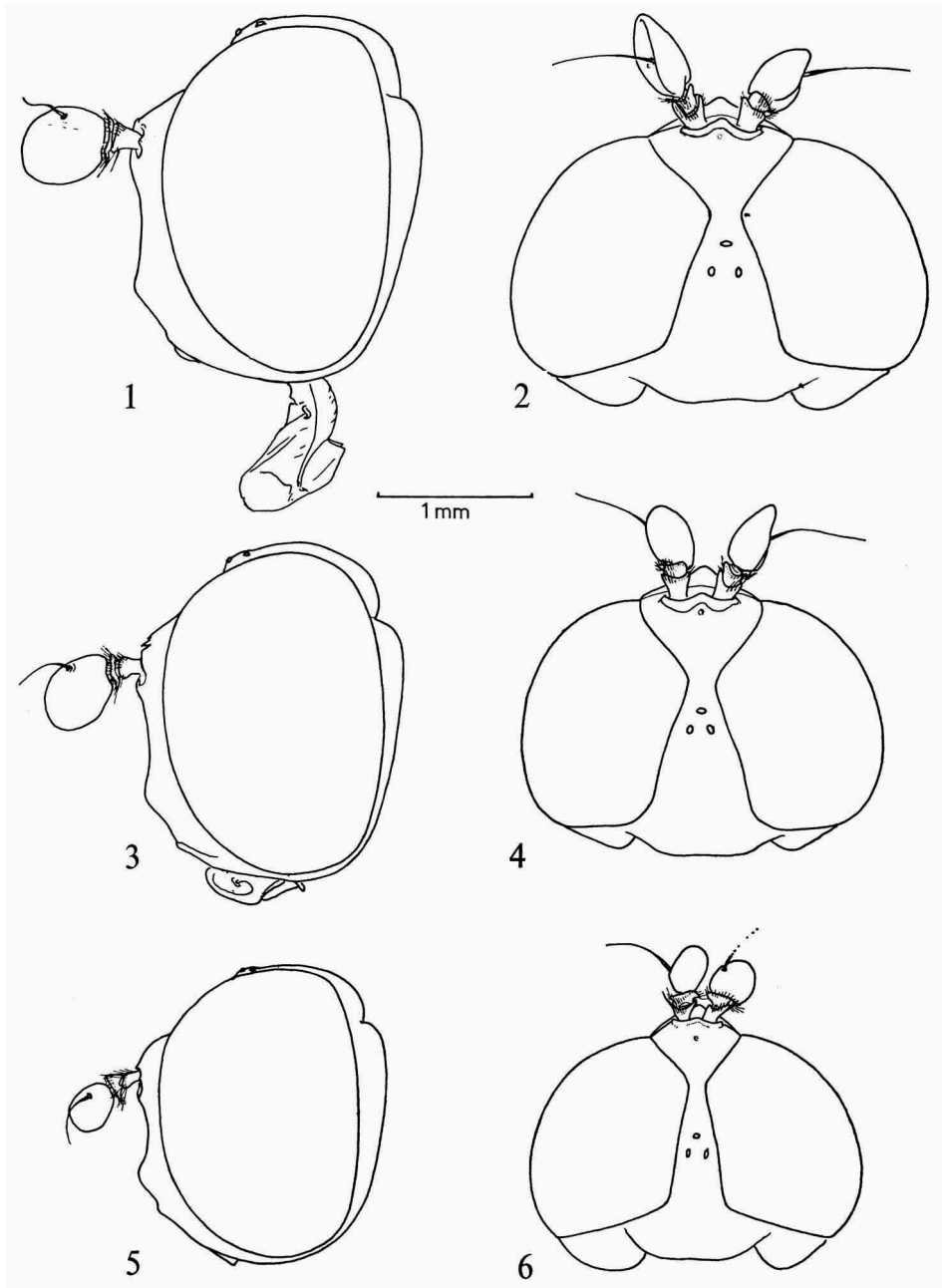
By a lucky chance I received nearly synchronously two shipments of Syrphidae for determination: one from the Riksmuseum at Stockholm, and the other from the Riksmuseum at Leiden. In the Stockholm collection I found eleven specimens of *Spheginobaccha*, in the material from Leiden this genus was represented by eight specimens. Moreover there are four specimens in my own collection.

The specimens in the Stockholm collection (6 ♂, 5 ♀) all had been collected in 1934 by Malaise in Burma. The females answer very well to Bigot's description of *macropoda*. Because his single female was also from Burma, and the species proves to be rather abundant there we may admit that the eleven specimens caught by Malaise are *S. macropoda* (Bigot).

The collection of the Riksmuseum Leiden contains eight specimens of *Spheginobaccha*. Seven of them (3 ♂, 4 ♀) were collected by Dr. M. A. Lieftinck in Malaya. They differ from the Burma specimens in many respects. The eighth specimen, a female, was caught at Tapos, Java, by Dr. J. v. d. Vecht.

In my own collection there are four specimens. A couple from Depok, Java, received from Mr. C. M. C. Brouerius van Nidek, belongs, together with the above Tapos specimen, to a third distinct species. A couple from Cochin-China is similar to the Burma specimens, except that the vertical triangle in the male, and the vertical part of the front in the female, are narrower than is the case in the Burma specimens. They may belong to *S. melancholia* Hull, but Hull described only the female.

All the males at hand are dichoptic; in consequence the "vertical triangle" is in reality a truncated one, separated from the front by an undepressed depression. The facial tubercle is small and insignificant but well visible in profile. The humeri, and the remainder of the thorax, are bare with exception of a tuft of long, stiff, outstanding hairs on the anterior margin of the propleura. The squamae are well developed having an upper and lower lobe as in *Syrphus*. The shape of the male abdomen has perfectly been pictured by Hull (1949, fig. 17, A). It is strongly narrowed at the joint of the 2nd and 3rd abdominal segments. The slender forepart is steadily narrowing from base to constriction, the hind half is again widening to the apical margin of the 4th segment. At least basally the third tergite has a shallow, linear impression not far from, and parallel with the lateral margin. This impression is also present in the females. The female abdomen is broad, not at all constricted and but very little broadened beyond the second segment.



Figs. 1-6. Lateral and dorsal aspects of male head. 1, 2, *Spheginobaccha macropoda* (Bigot); 3, 4, *Spheginobaccha lieftincki* n.sp. (holotype); 5, 6, *Spheginobaccha demeijerei* n. sp. (holotype).

Spheginobaccha macropoda (Bigot) (figs. 1, 2, 7; pl. 1)

Sphegina ? *macropoda* Bigot, 1883, Ann. Soc. ent. France, (6) III: 331 (♀).

?*Baccha robusta* Brunetti, 1908, Rec. Ind. Mus., 2: 50; 1907, l.c., 1: pl. 11 figs. 3, 4; Hervé-Bazin, 1924, Ann. Soc. ent. France, 92: 292.

Male. — Head (figs. 1, 2) seen from above fully twice as broad as long, vertical triangle rather coarsely punctate, one and a half times as high as broad basally; eyes at nearest point of approach separated for a distance larger than that between the posterior ocelli, eye-facets but very little enlarged in front; frontal triangle large, inflated, shining black; face one-fourth of the breadth of head, scarcely concave between antennae and tubercle, black, covered by white dust and bearing white pile. Facial tubercle is just visible in profile. Antennae orange, the upper half of the third joint somewhat darkened, the basal two joints very small, the third large, inflated, one and a half times as long as high. Arista short, dark brown.

Mesonotum dull, black, the sides and two sub-median vittae, greyish, the large humeral callosities, the notopleura and the postalar calli, yellow. The suture between the notopleura and mesopleura is rather deep, the transverse suture between the notopleura is less deep but still well visible. Pleura mostly blackish; below the notopleura there is a broad band of greyish white, silky dust, nearly reaching the mid coxae and upwards covering the notopleura. Scutellum tawny with, at the tip, a few short, black, marginal bristly hairs. Metascutum blackish.

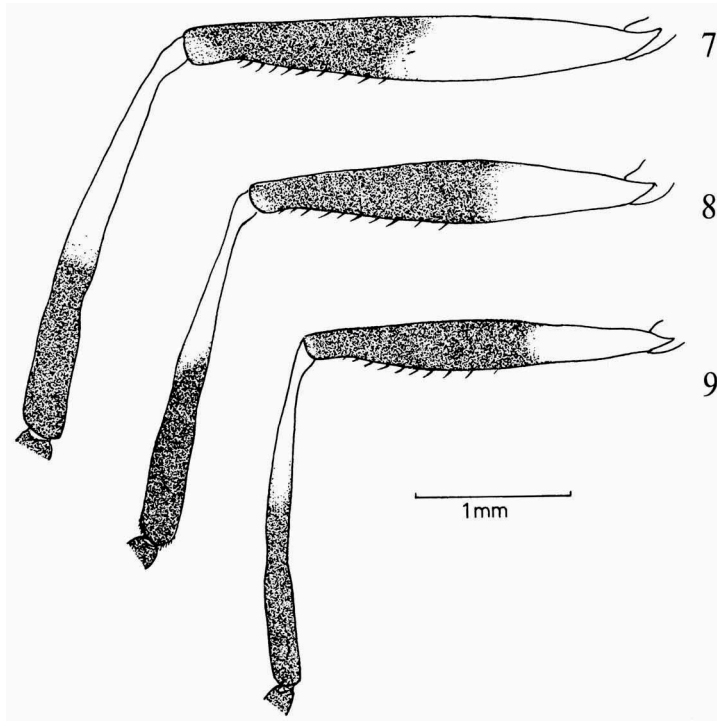
Abdomen slender, three times as long as mesonotum and scutellum together, basally nearly as broad as the scutellum, from there steadily narrowing to the apex of the second segment, then again widening so that the third and fourth segments together form a longish, rather inflated club. Dorsum of abdomen black, hind margin of all tergites, basal two-thirds of second and third tergites, and the very large hypopygium, yellow. Sometimes the basal yellow band of the second tergite is divided by a darker yellow or brown vitta, that of the third tergite is always divided into two rectangular blocks. Fourth tergite with a subbasal, broad, bent band of grey dust on either side, broadly separated medially. Basal three sternites of the venter yellow with a narrow, blackish, medial vitta, fourth sternite blackish. Abdominal pile very short and scanty, except on the fourth tergite where it is well visible, and on the venter where it is fairly long, white.

Coxae black. Anterior four legs with yellow femora and tibiae, the latter with darkened apex. Hind femora (fig. 7) with exactly the basal half yellow, the remainder black with narrow yellow apex. Hind tibiae also with the basal half yellow, the other half black. All tarsi black, the metatarsi more or less yellowish. Front tarsi shortened and dilated.

Wings hyaline, stigma dark brown, elongate; alulae well developed. Squamae white, lower lobe with very short, scanty fringe. Halteres yellowish.

Length, 10-12 mm.

One male, S. Shan States, Burma, Taunggyi, 1500 m, 1-viii/22-ix, 1934; three males, S. Shan States, 40 km E. of Taunggyi, 25-ix/13-x, 1934; two males, S. Shan States, Pekkong, 900 m, 8-x-1934; all collected by Malaise; in the collection of the Riksmuseum, Stockholm.



Figs. 7-9. Male hind leg. 7, *Spheginobaccha macropoda* (Bigot); 8, *Spheginobaccha lief-tincki* n. sp. (holotype); 9, *Spheginobaccha demeijerei* n. sp. (holotype).

Female. — To Bigot's description of the female the following may be added. Arista short, bare, blackish with dark reddish base. Abdomen not club-shaped, broad, slightly widening from base to the fourth segment. The abdominal markings are somewhat variable, sometimes the grey bands on the fourth segment are fully reddish. The females more tend to melanism than the males. The hind femora, however, are constantly yellow on the basal half and black on the remainder. Length, 11-13 mm.

There are four females in the Stockholm collection: two from Pekkong, 900 m, x-1934, and two from Taunggyi, 1-viii/22-ix, 1934 (Malaise).

Spheginobaccha liefstincki n. sp. (figs. 3, 4, 8; pl. 2)

Male. — Head (figs. 3, 4) not quite twice as broad as long when viewed from above; vertical triangle twice as long as its base, shining black, wholly punctate, with rather long, erect, black pile on the upper half; ocellar triangle small, equilateral, situated far in front. Front somewhat inflated, shining black. Face black, about one-fourth of the breadth of head, completely covered with white dust which is upwardly continued along the eye-margins. The central tubercle is scarcely developed. Cheeks narrow, oral opening pear-shaped, not fully twice as long as wide. Antennae orange, third joint very little longer than high, the upper margin darkened. Arista dark brown.

Thorax black, mesonotum black with two submedian greyish vittae, the humeral and postalar calli yellow, the sides between humeral calli and the suture, the notopleura included, with bluish shine. Pleura blackish, the meso- and sternopleura with bluish shine. There is a broad band of white dust between notopleura and mid coxa. Scutellum very dark yellow to blackish. Metascutum grey-dusted, black.

Abdomen shaped as in *macropoda* but only twice as long as mesonotum and scutellum together, since the mesonotum is relatively longer than in *macropoda*. Abdomen black, all tergites with yellow hind margin. Second tergite with two yellow, elongate side-spots occupying two-thirds of the length of the segment, their inner margins are convex and well separated. Third tergite with two large, triangular, basal side-spots which occupy less than half the length of the segment. They touch medially, leaving a small basal triangle black. Fourth segment with a subbasal, medially interrupted band of grey dust which broadens towards the lateral margins of the segment. The large hypopygium is yellow. The fourth segment is but little inflated. Venter as in *macropoda*. Abdominal pile scanty, mostly white, short but longer basally and on the fourth segment.

Coxae black; anterior four femora yellow with some traces of black on the apical third; hind femora (fig. 8) black, the basal third yellow. All tibiae black with basal half yellow. All tarsi black.

Wings hyaline, somewhat greyish by microvilli, alulae well developed, stigma light brown. Squamae large, dirty white, with short, white fringe.

Female. — Upper part of front about one-fifth of the breadth of head, twice as long as wide, with parallel sides, shining black with closely set, fine punctation and rather long, black, erect pile. Lower front black, shining, separated from the upper part by a shallow, transverse impression in which the united, white dusty side spots form a transverse band. Abdomen broader than that of the male, hardly narrowed to the base of the third segment.

Fourth segment less inflated but very strongly and closely punctate. The yellow markings of the second tergite are more widely separated, those of the third tergite are transverse. Apical margin of the fourth tergite broadly red. Fifth tergite black with narrow red margins, sixth tergite dark orange.

Length, 10-11 mm.

Holotype, male, and allotype, female (caught in copula), Malaya, Perak, Ipoh, Sungei Raia, 4-iii-1963 (M. A. Lieftinck).

Paratypes: one male, Malaya, Selangor, Rayang, Serendah, Forest Res., 25-iii-1963; one male, Malaya, Penang I., Batu Feringgi, 25-ii-1963; two females, Malaya, Selangor, Templer Park, 23-iii and 11-iv-1963; one female, Malaya, W. Kedah, foot of Mt. Djerai, Gurun, 22-ii-1963; all collected by M. A. Lieftinck.

All specimens mentioned above have been collected by Dr. M. A. Lieftinck, in whose honour the species has been named. Holotype, allotype and paratypes are in the collection of the Rijksmuseum van Natuurlijke Historie at Leiden, with the exception of two paratypes (1 ♂, 1 ♀) which are in the author's collection.

***Spheginobaccha demeijerei* n. sp. (figs. 5, 6, 9; pl. 3)**

Spheginobaccha macropoda De Meijere (nec Bigot), 1908, Tijds. v. Ent., 51: 327, pl. 8 fig. 43.

Male. — Head (figs. 5, 6) seen from above but little broader than long, nearly globular. Vertical triangle very narrow, almost five times as high as its base. At their nearest point of approach the eyes are separated by a distance shorter than that between the posterior ocelli. Frontal triangle inflated, shining black, its top wholly dulled by grey dust. Face grey dusty with exception of the facial tubercle which is shining black and distinctly perceptible. Oral opening broadly oval, cheeks extremely narrow. Antennae small, orange, third joint about one and a half times as long as high.

Mesonotum black, the roundish humeral callosities, the notopleura, and the postalar calli, tawny. The transverse suture between the tips of the notopleura is also narrowly tawny coloured. Scutellum yellowish. Pleura shiny, bluish black with a yellow dusted band below the notopleura, and with a reddish yellow, vertical stripe below the humeri on the propleura.

Abdomen about twice as long as mesonotum and scutellum together, its slender anterior half narrows steadily to the apex of the second segment; beyond this point the abdomen is again steadily widening to the hind corners of the fourth segment. Fourth segment not at all inflated, its apical margin straight and broader than the base of abdomen. First abdominal tergite black with reddish hind and side margins; second tergite black, on either side a

basal, elongate, narrow, yellow spot along the basal four-fifths of the lateral margin. The inner margins of these spots are broadly separated, straight for about half the length of tergite, and then bent outwards to the lateral margin. The remaining medial black band occupies half the width of the tergite. Third tergite black with on either side a basal, lateral spot. These spots are connected by the narrowly yellow base of the segment, apart from that they are very broadly separated, their inner margins convex. Fourth sternite black, very finely punctate and with an arched, subbasal, grey-dusty band; in front of this band, and also under it, the ground-colour is more or less reddish. All tergites with narrow, yellowish hind margin. The moderately large hypopygium is yellow and grey dusted. Venter mostly yellow, the fourth sternite black. Abdominal pile inconspicuous with exception of the long hairs at the base laterally and the shorter hairs on the apical part of the fourth tergite, which are white and well visible.

Coxae brownish black. Anterior four femora orange with blackish apex, hind femora (fig. 9) black, the basal two-fifths yellow. About the basal half of all tibiae yellow, the remainder black. All tarsi black, the frontal tarsi somewhat broadened. Hind metatarsi thickened, as long as the remaining four joints together.

Wings greyish hyaline, stigma light brown, filling up nearly the whole stigma-cell. Between the tip of this cell and the tip of wing the costa is slightly bordered with brown. Squamae very small, brown, the fringe inconspicuous. Halteres light brown.

Female. — Front shining black, inflated, divided into two halves by an un-deep, transverse impression which is wholly filled up by grey dust. Upper half of front occupying one seventh or eighth of the breadth of head, its sides are parallel. Lower part of front more strongly inflated. Face one fourth of the breadth of head in front-view, grey dusted with short white hairs; central tubercle rather well developed. The facial grey dust is very narrowly connected along the eye-margins with the grey band of the frontal impression. For the rest the female is similar to the male.

Length, male 9 mm, female 10 mm.

Holotype, male and allotype, female, Depok, Java, 27-xi-1949 (Brouerius van Nidek), in the author's collection.

Paratype: one female, Tapos, Java, 1936 (v. d. Vecht) in the collection of the Rijksmuseum at Leiden.

In the collection De Meijere (now in the Zoölogisch Museum at Amsterdam) I found: one male and one female, Semarang, Java, x-1905; two males and one female, Nongkodjadjar, Java, i/ii-1911; one female, Depok, Java, x-1907; one female, Sumatra, Muara Saka, x-1915; one female, Java. All

these specimens were collected by E. Jacobson, and placed into the collection under *macropoda* Bigot. Undoubtedly the first couple recorded above was treated by De Meijere in his "Studien" III (1908).

I wish to thank Dr. P. I. Persson, Riksmuseet, Stockholm, and Mr. P. J. van Helsdingen, Rijksmuseum, Leiden, for sending the flies recorded above for study. I am indebted to Dr. C. A. W. Jeekel, Zoölogisch Museum, Amsterdam, for giving an opportunity to study the specimens in the De Meijere collection recorded above. I render also many thanks to Dr. P. H. van Doesburg Jr. who made the elucidating drawings and photographs.

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Pl. I. *Spheginobaccha macropoda* (Bigot), male.



Pl. 2 *Spheginobaccha tieffincki* n. sp., male holotype.



Pl. 3. *Spheginobaccha demeijeri* n. sp., male holotype.