

The Genus *Spathomeles* Gerstaecker, with the Description of a New Species from Borneo (Coleoptera: Endomychidae)

By H. F. STROHECKER

University of Miami

(Presented by Mr. Zimmerman at the meeting of June 14, 1948)

Among a lot of Endomychidae submitted to me for study by Mr. Elwood Zimmerman of the Bernice P. Bishop Museum is a specimen representing an undescribed species of *Spathomeles*. In describing this form I have thought the occasion opportune for presenting a modern synopsis of the genus. The species are not numerous nor is identification difficult but a concise review of the genus will bring together several isolated descriptions.

The genera *Amphisternus* Germar and *Spathomeles* Gerstaecker are the most highly derived of the Eumorphinae, the latter especially showing very strong sexual differentiation. Both these genera agree in having the mesosternum transverse and the metasternum tumid on each side, although this latter feature is variable from species to species. *Spathomeles* differs from *Amphisternus* in having the apex of the prosternal process entire (forked in *Amphisternus*), and in the chisel-shaped apex of the mandible (minutely bifid in *Amphisternus*). In both genera the less derived species have a muricate, unpunctured and opaque or glossy surface; the more highly derived species have the surface shining and punctured. In each genus there are species intermediate between these two conditions, e.g. *S. elegans* Gorham, in which the pronotum is finely muricate, the elytra shining and punctured.

With the exception of *S. bonthainicus* Heller, of which I have seen no specimens, I have studied the taxonomy by use of several structural features, including the aedeagus. This last structure, while it shows marked specific differences, is not necessary for identification. In fact, external features may exhibit sharper divergence. I have, nevertheless, included outline drawings of the aedeagi because of the unusual, even gargantuan, development of this organ.

The order in which the species appear in the key is merely one of convenience; the subsequent treatment gives the apparent degree of derivation.

GENUS SPATHOMELES GERSTAECKER

Spathomeles Gerst. 1857. Archiv. Naturgesch. 23: 218

Cacodaemon Thomson 1857 (in part). Archives Entomol. 1: 154.

Rachidophorus Guérin 1857 (in part). Archives Entomol. 1: 581.

Genotype: *Spathomeles anaglyptus* Gerstaecker.

KEY TO THE SPECIES

1. Pronotum without evident punctures, muricate..... 2.
Pronotum punctured, shining, with discal impressions..... 4.
- 2(1). Pronotum with discal impressions.....*elegans* Gorham (p. 440)
Pronotum without discal impressions, its surface even..... 3.
- 3(2). Elytra with weal-like yellow spots.....*turritus* Gerstaecker (p. 438)
Elytra with a reddish reticulum.....*retarius* sp. n. (p. 438)
- 4(1). Pre-apical elytral marking a transverse, serrate band..... 5.
Pre-apical elytral marking a rounded spot..... 6.
- 5(4). Metasternum with a strigose pit at middle of front.....
.....*decoratus* Gerstaecker (p. 441)
Metasternum without distinct median pit.....*dohrnii* Gerstaecker (p. 440)
- 6(4). Middle elytral spot weal-like or moderately tumid..... 7.
Middle elytral spot on a high, conical elevation.....
.....*darwinista* Dohrn (p. 442)
- 7(6). Base of hind tibia of male with a strong tooth.....
.....*anaglyptus* Gerstaecker (p. 442)
Hind tibia of male without tooth.....*bonthainicus* Heller (p. 440)

***Spathomeles retarius* sp. n. (Figs. 1, 2).**

Smaller than any hitherto described species and very different in color pattern. Instead of the tumid, yellow spots of other species the elytral markings of *retarius* consist of a reticulum of reddish color not at all raised above the elytral surface, and not very sharply contrasted with the ground color but nevertheless distinct. General color blackish-brown with violaceous reflections, surface muricate, unpunctured, softly glossy. Head rugose between the antennal bases and with a broad impression on each side. Antennae slender, third joint about half as long again as fourth, club very large and strongly flattened. Pronotum decidedly transverse, its front angles produced and acutely rounded, its hind angles acutely but briefly produced. Basal transverse stria deep, lateral striae short and feeble. Elytra short and highly convex, apices subtruncate. Each elytron is elevated before its middle into a high spine. This spine is very broad at its base, suddenly narrowed at mid-height and there bent abruptly backward and inward. Femora strongly clavate. Tibiae, especially the front ones, curved and with a dense tuft of golden hairs at apex. The middle tibia bears a minute tubercle on its inner face at distal two-thirds of length. Prosternal process narrow between the front coxae, considerably prolonged, smooth, narrowly rounded at apex. Metasternum smooth at middle, with a deep fovea on each side near its front margin. Last abdominal sternite sinuately emarginate. Length 8.5 mm.

Type material: one male, holotype, Sandakan, British North Borneo, December, 1926, Pemberton coll.; Bishop Museum collection.

This species is clearly annectant to *Amphisternus* but presents the critical features of *Spathomeles*.

***Spathomeles turritus* Gerstaecker. 1857. Archiv Naturgesch. 23: 220.**

Spathomeles turritus Gerstaecker. 1858. Monographie der Endomychiden, p. 67.

The male is generally similar in contour to the previous species but the elytral spines are erect, reflexed slightly at their tips. Pronotum without discal impressions, its surface finely muricate, its

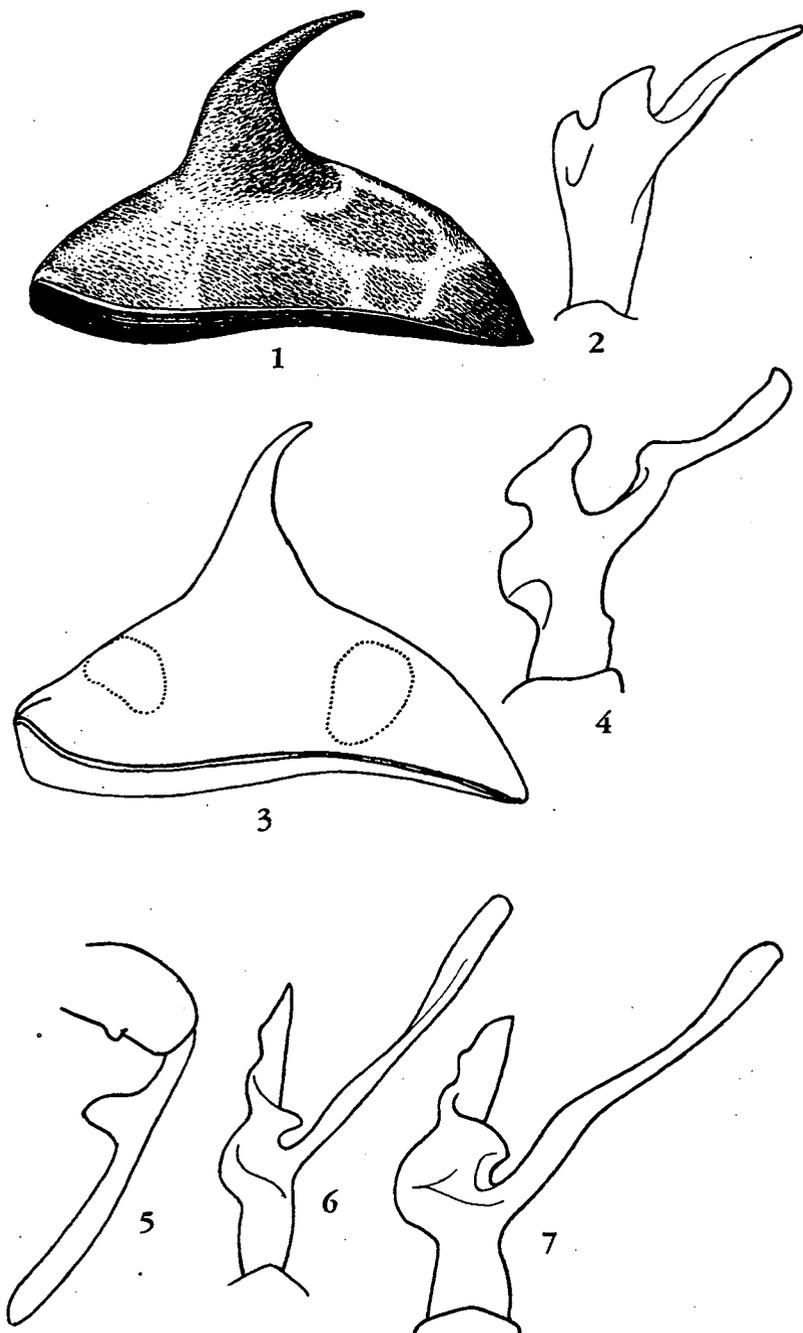


Figure 1. *Spathomeles retarius* sp. n.: left elytron of male (type), side view.
 Figure 2. *Spathomeles retarius* sp. n.: aedeagus of male (type).
 Figure 3. *Spathomeles turritus* Gerstaecker: left elytron of male, side view.
 Figure 4. *Spathomeles elegans* Gorham: aedeagus of male.
 Figure 5. *Spathomeles elegans* Gorham: hind tibia of male.
 Figure 6. *Spathomeles decoratus* Gerstaecker: aedeagus of male.
 Figure 7. *Spathomeles anaglyptus* Gerstaecker: aedeagus of male.

front angles acutely rounded, hind angles briefly and acutely produced. The elytra (fig. 3) show feeble punctures; wholly black except that each elytron has two weal-like yellow spots, the anterior obliquely placed behind the humerus and externally acuminate, the posterior transversely oval. Femora strongly clavate. Tibiae gently curved, the hind tibia with a low, blunt tooth on inner distal third. Prosternal process a little expanded at tip, metasternum as in *retarius*. Length 9.5-10 mm. Reported from Penang. The female is unknown.

Friwaldszky (1883: 126) has reported from Borneo a "variety" *dispar*. The only remark of Friwaldszky is that *dispar* lacks the basal elytral spot, and inasmuch as *turritus* does not have a spot on the elytral base the meaning of Friwaldszky's note is obscure.

Spathomeles elegans Gorham 1873. *Endomycici Recitati*, p. 32.

The following description is based upon the male; females have not yet been reported. Entirely black, excepting two yellow spots on each elytron. Pronotum with surface alutaceous, unpunctured, its front angles bluntly rounded, its hind angles briefly acute. The pronotal disc has a median and two lateral impressions. Elytra moderately shining, distinctly punctured, each elevated at about mid-length into a low, subspiniiform tubercle. The anterior spot is posthumeral, the posterior pre-apical. Prosternal process longitudinally grooved. Metasternum as in the preceding two species. Femora strongly clavate, the hind femur with a high, transverse ridge on its posterior surface near apex. Hind tibia (fig. 5) with a large, triangular flange near base. Last abdominal sternite broadly tuberculate. Length 11-12 mm. Reported from Penang and Sumatra.

Spathomeles bonthainicus Heller 1898. *Abhandl. Mus. Dresden* 7: 39; pl. 3, fig. 13.

Apparently still known only from Heller's unique type, a male from Mt. Bonthain, Celebes. Black, the elytra with bluish reflections. Each elytron with a low, subspiniiform tubercle before the middle and three yellow spots, the first at base near scutellum, the second post-humeral, the third pre-apical. Front femur with a blunt tooth near base. Tibiae curved, the middle tibia subdentate at apical third. Length 11 mm.

I have seen no specimens of this species but Heller's description and figure are adequate for its identification.

Spathomeles dohrnii Gerstaecker 1857. *Archiv Naturgesch.* 23: 219.

Spathomeles dohrnii Gerstaecker 1858. *Monographie der Endomychiden*, p. 64.

Spathomeles dohrni Csiki 1910 (*Junk-Schenkling*). *Cat. Coleopt.* pars 12: 18.

Eumorphus quadrisignatus Guérin 1857. Archives Entomol. 1: 257, pl. 13, fig. 12.

Rachidophorus quadrisignatus Guérin 1858. Revue et Mag. Zool. (2), 10: 61.

The most distinctive features of this species are the elytral markings, which consist of an irregular spot at the base and two sinuous or serrate, transverse bands of reddish-yellow color. The second or posthumeral is connected at its inner end with the outer side of the basal spot. Head very thickly punctured between the eyes. Pronotum shining, densely punctured, with a median depression on each side of which is a rounded impression. Front angles obtuse, hind angles slightly acute. Elytra long-oval, blue-black, densely punctate. Prosternal process broad, rough. Metasternum with a deep fovea on each side in front; between these the metasternum has a shallow, roughened impression. The sexes are alike except that the male has the front femur toothed at base, each elytron with a low tubercle and the middle tibia angulately widened at its distal two-thirds. Reported from Sumatra and Java.

Spathomeles decoratus Gerstaecker 1857. Archiv Naturgesch. 23: 31.

Spathomeles decoratus Gerstaecker 1858. Monographie der Endomychiden, p. 66.

Spathomeles ornatus Gorham 1886. Proc. Zool. Soc. London, p. 155.

Spathomeles decoratus var. *ornatus* Gorham 1896. Ann. Mus. Civ. Genova ser. 2, 16(36): 292.

Spathomeles decoratus Arrow 1925. Fauna Br. India: Col. Erotylidae etc., p. 308, fig.

Cacodaemon hamatus Thomson 1857. Archives Entom. 1: 157.

Rachidophorus latreillei Guérin 1858. Revue et Mag. Zool. (2) 10: 61.

Usually each elytron of this species has an oval, yellowish spot near the scutellum, two spots transversely placed before the middle and a pre-apical bar, transversely placed. In some specimens the two middle spots are coalesced (var. *ornatus* Gorham) but this variation is not correlated with geography or ecology so far as known at present. More rarely the pre-apical bar is divided. The inner of the two posthumeral spots encloses a low, subconical elevation. In the male the front femur is toothed near its base, the middle tibia is toothed at its distal third and the hind tibia may have a tooth near its base. The development of the tooth of the hind tibia is variable, ranging from a feeble tubercle to a decided spine. Length 11.5-12.5 mm. Reported from Java (?), Malay Peninsula, Burma and Assam.

In this species and those following the elytral spines of the males are slender, distinctly recurved and longer than in *elegans*; *dohrnii* and *bonthainicus* but much smaller than in *retiarus* and *turritus*.

Spathomeles anaglyptus Gerstaecker 1857. Archiv Naturgesch.

23: 219 idem. 1858. Monographie der Endomychiden, p. 62, pl. 2, fig. 2.

Cacodaemon Hopei Thomson 1857. Archives Entom. 1: 154.

Eumorphus Hopei Guérin 1857. Archives Entom. 1: 255.

Rachidophorus Hopei Guérin 1858. Revue et Mag. Zool. (2) 10: 59.

The best characters for distinguishing this species have been set forth in the key. The development of the long spine on the hind tibia of the male is apparently constant. The degree of elevation of the middle elytral spot is variable. In specimens from Malacca the elevation is subconical, its highest part about level with the elytral suture when viewed from behind. In the Sumatra specimens at hand this elevation is roundly tumid, in Borneo specimens merely weal-like.

The elytral spines of the male are slender, recurved and subacuminate. The front femur is toothed at base, the front tibia somewhat expanded at apex. The middle tibia is angulately toothed at distal third and clothed there with a dense brush of setae. The metasternum has a very deep, strigose pit at the middle of its front margin. Length 12-13 mm. Range: Malacca, Penang, Sumatra, Java?

Spathomeles anaglyptus insuspectus Gorham.

Spathomeles insuspectus Gorham 1873. Endomycici Recitati p. 31.

Differs from nominate *anaglyptus* in the larger size of the elytral spots. The basal and middle spots are approximate and coalesce in some specimens. The middle spot is feebly elevated. Occurs in Borneo.

Spathomeles darwinista Dohrn 1873. Stettiner Ent. Zeitung, p. 322.

Spathomeles pyramidalis Gorham 1873. Endomycici Recitati, p. 31.

This is clearly the most derivative of the species. In viewing series of *anaglyptus* from various localities and of *darwinista*, one might suppose that a single Rassenkreis was represented but the form of *anaglyptus* occurring in Borneo is less similar to *darwinista* than is nominate *anaglyptus* from farther south. While closely related, *darwinista* differs from *anaglyptus* in several features. The elytral spots are much smaller and the middle spot encloses a high, conical elevation (fig. 9). The elytral spines of the male are more decurved and longer and the hind tibia is feebly toothed or, more often, simple. The front tibia (fig. 11) is very broadly expanded at its apex and deeply excavated on its inner margin. The aedeagus of *darwinista* (fig. 10) shows the greatest degree of development in the genus. The median mesosternal pit is also greatly developed.

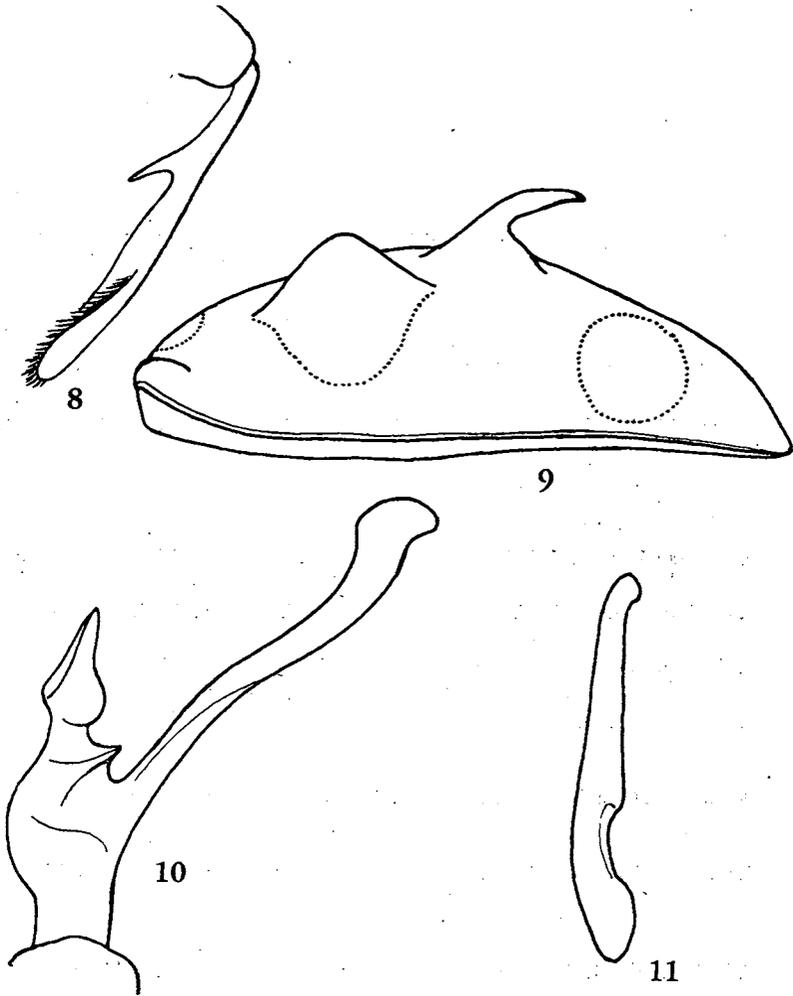


Figure 8. *Spathomeles anaglyptus* Gerstaecker: hind tibia of male.
 Figure 9. *Spathomeles darwinista* Dohrn: left elytron of male, side view.
 Figure 10. *Spathomeles darwinista* Dohrn: aedeagus of male.
 Figure 11. *Spathomeles darwinista* Dohrn: front tibia of male.

Apparently this pit is accessory to the two deep foveae of the mesosternum, which are likely glandular in function. Several collectors have remarked that various species of Oriental Endomychidae exude strong-smelling fluids when disturbed.

The length of the present species is 12-13 mm. It has been reported from the Philippines. More definite are the labels on four of the specimens at hand: "Surigao, Mindanao."

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