

X.—*List of the Species of the Homopterous Genus Hemisphærius, with Descriptions of new Forms in the Collection of the British Museum.* By ARTHUR GARDINER BUTLER, F.L.S., F.Z.S., &c.

[Plate IV.]

THE beautiful little genus of Fulgoridæ known by the name of *Hemisphærius* is particularly interesting, from its general resemblance to the Coleopterous genus *Coccinella*; this similarity is best exemplified in *H. flavimacula*, *H. cruentatus*, and *H. flavus*, all of which, to an inexperienced eye, might pass for ladybirds.

Of the forty-two species now known to science, the types of no less than thirty-four are in the Museum collection, whilst we possess at the same time four other described forms, thus showing a deficiency of only four of the species hitherto named by naturalists. Under these favourable circumstances I thought it would be well to give a list of the species, separating them into sections by the colouring of their tegmina (rather than by structural characters), in order to their easier determination by fellow workers in the group. I am at the same time fully aware that this arrangement of the species is not a natural one; but I employ it as being a ready guide in the identification of the species.

I. *Tegmina red, with three yellow or green streaks on each side.*

1. *Hemisphærius coccinelloides*. Pl. IV. fig. 2.

Issus coccinelloides, Burmeister, Meyen, Reise, Nova Acta Ph. Med. Soc. C. Leop. N. C. xvi. p. 305. n. 38, pl. 41. fig. 11 (1833).

Hemisphærius coccinelloides, Schaum, Allg. Enc. Wissensch. Kunst. i. p. 51.

Hab. Philippines (*Wood & Cuming*). B.M.

II. *Tegmina piceous, with three testaceous streaks.*

2. *Hemisphærius lunaris*.

Hemisphærius lunaris, Walker, Journ. Linn. Soc. x. p. 132. n. 134 (1870).

Hab. New Guinea (*Wallace*). Type, B.M.

III. *Tegmina piceous, with two or three yellow streaks.*

3. *Hemisphærius villicus*. Pl. IV. fig. 1.

Hemisphærius villicus, Stål, Trans. Ent. Soc. ser. 3, i. p. 588. n. 9 (1863).

Hab. Mysol (*Wallace*). Type, B.M.

IV. *Tegmina* clay-coloured, with two longitudinal green streaks.

4. *Hemisphærius tæniatus*. Pl. IV. fig. 3.

Hemisphærius tæniatus, Stål, Trans. Ent. Soc. ser. 3, i. p. 587. n. 3 (1863).

Hab. Waigiou (*Wallace*). Type, B.M.

V. *Tegmina* black, with two cream-coloured streaks.

5. *Hemisphærius vittiger*. Pl. IV. fig. 4.

Hemisphærius vittiger, Stål, Trans. Ent. Soc. ser. 3, i. p. 586. n. 2 (1863).

Hab. Kaisa (*Wallace*). Type, B.M.

VI. *Tegmina* black and castaneous, with yellow margins.

6. *Hemisphærius pulcherrimus*. Pl. IV. fig. 5.

Hemisphærius pulcherrimus, Stål, Trans. Ent. Soc. ser. 3, i. p. 588. n. 10 (1863).

Hab. Batchian (*Wallace*). B.M.

7. *Hemisphærius submarginalis*. Pl. IV. fig. 7.

Hemisphærius submarginalis, Walker, Journ. Linn. Soc. x. p. 132. n. 135 (1870).

Hab. Gilolo (*Wallace*). Type, B.M.

Very like the preceding species, but broader.

VII. *Tegmina* piceous, with narrow fulvous margins.

8. *Hemisphærius nigrolineatus*. Pl. IV. fig. 6.

Hemisphærius nigrolineatus, Walker, Journ. Linn. Soc. x. p. 130. n. 129 (1870).

Hab. Mysol (*Wallace*). Type, B.M.

VIII. *Fulvous* margins clouded, ill-defined.

9. *Hemisphærius plagiatus*.

Hemisphærius plagiatus, Walker, Journ. Linn. Soc. x. p. 131. n. 131 (1870).

Hab. Sula (*Wallace*). Type, B.M.

IX. *Fulvous* margins broad, well-defined.

10. *Hemisphærius lativitta*. Pl. IV. fig. 8.

Hemisphærius lativitta, Walker, Journ. Linn. Soc. x. p. 130. n. 128 (1870).

Hab. Morty (*Wallace*). Type, B.M.

X. *Tegmina piceous, with yellow external margin.*11. *Hemisphærius viduus.**Hemisphærius viduus*, Stål, Trans. Ent. Soc. ser. 3, i. p. 589. n. 11 (1863).*Hab.* Mysol (*Wallace*). Type, B.M.12. *Hemisphærius collaris.**Hemisphærius collaris*, Walker, Journ. Linn. Soc. x. p. 131. n. 133 (1870).*Hab.* New Guinea (*Wallace*). Type, B.M.13. *Hemisphærius latipes.**Hemisphærius latipes*, Stål, Trans. Ent. Soc. ser. 3, i. p. 588. n. 8 (1863).*Hab.* Ceram. Coll. Stål.14. *Hemisphærius dilatatus.* Pl. IV. fig. 9.*Hemisphærius dilatatus*, Walker, Journ. Linn. Soc. x. p. 133. n. 137 (1870).*Hab.* Flores (*Wallace*). Type, B.M.XI. *Yellow marginal line leaving the costal edge of the tegmina long before reaching apex.*15. *Hemisphærius subapicalis*, Walker, MS. Pl. IV. fig. 10.

Frons truncate, subconical, twice as broad in front as behind, as broad as long, nearly smooth; scutellum almost equilaterally triangular; tegmina rather narrow, not prominent in front, smooth and shining: frons black, with a transverse testaceous band at each end; collar testaceous; scutellum black, its apex testaceous; tegmina black, with costal stramineous line, which leaves the margin at basal fourth; abdomen brown, anus and margins of ventral segments ochreous; pectus testaceous; legs ochreous, femora of front pair scarlet, tibiæ of last pair tipped with black.

Length $5\frac{1}{2}$ millimetres.*Hab.* Ceram and Dorey (*Wallace*). Type, B.M.

Variety. Frons with ochreous bands, collar ochreous; scutellum with central longitudinal ochreous line; tegmina with subcostal line ochreous at base, but castaneous from basal fourth to apex.

Hab. Amboina (*Wallace*). B.M.

16. *Hemisphærius pullatus*.*Hemisphærius pullatus*, Stål, Trans. Ent. Soc. ser. 3, i. p. 587. n. 7 (1863).*Hab.* Ceram. Coll. Stål.

This species, although it appears to have the sutural margin of the tegmina margined with testaceous, seems to belong to the same section with *H. subapicalis*.

XII. *Tegmina red, with external black submarginal band and yellow margin.*17. *Hemisphærius contusus*. Pl. IV. fig. 11.*Hemisphærius contusus*, Walker, List Homopt. Ins. ii. p. 378. n. 3 (1851).*Hab.* Sula (Wallace). Type, B.M.XIII. *Tegmina ochraceous, with broad black external border intersected longitudinally by a yellow line.*18. *Hemisphærius circumcinctus*. Pl. IV. fig. 12.*Hemisphærius circumcinctus*, Stål, Trans. Ent. Soc. ser. 3, i. p. 586. n. 1 (1863).*Hab.* Mysol (Wallace). Type, B.M.XIV. *Tegmina unicolorous, testaceous.*19. *Hemisphærius chilocorides*.*Hemisphærius chilocorides*, Walker, List Homopt. Ins. ii. p. 379. n. 4 (1851).*Hab.* Hong Kong (Bowring). Type, B.M.20. *Hemisphærius scymnoides*.*Hemisphærius scymnoides*, Walker, Journ. Entom. i. p. 309 (1862).*Hab.* Chentaboom, Siam (Mouhot). B.M.21. *Hemisphærius torpidus*.*Hemisphærius torpidus*, Walker, Journ. Linn. Soc. i. p. 155. n. 68 (1857).*Hab.* Sarawak (Wallace). Type, B.M.22. *Hemisphærius flavus*, Walker, MS.

General aspect and size of the preceding species, but opaque stramineous; the scutellum stramineous, with its anterior margin black; tegmina with black costal margin; abdomen

ochraceous above; ventral surface purplish brown, segments margined with yellow.

Length 4 millimetres.

Hab. Mysol (*Wallace*). Type, B.M.

This species is more oval than the preceding.

XV. *Tegmina fulvous.*

23. *Hemisphærius rufovarius.*

Hemisphærius rufovarius, Walker, List Homopt. Ins., Suppl. p. 95 (1858).

Hab. Birmah (*Stevens*). Type, B.M.

24. *Hemisphærius bipustulatus.*

Hemisphærius bipustulatus, Walker, List Homopt. Ins., Suppl. p. 95 (1858).

Hab. Ceylon (*Cuming*). Type, B.M.

XVI. *Tegmina semitransparent, reddish or greenish.*

25. *Hemisphærius cassidoides.*

Hemisphærius cassidoides, Walker, Journ. Entom. p. 308 (1862).

Hab. Chentaboom, Siam (*Mouhot*). B.M.

XVII. *Tegmina uniformly green.*

26. *Hemisphærius viridis.*

Hemisphærius viridis, Walker, Journ. Linn. Soc. x. p. 133. n. 136 (1870).

Hab. Mysol (*Wallace*). Type, B.M.

XVIII. *Tegmina greenish testaceous, with a nearly perfect black ring on each side.*

27. *Hemisphærius signatus.* Pl. IV. fig. 13.

Hemisphærius signatus, Stål, Trans. Ent. Soc. ser. 3, i. p. 587. n. 4 (1863).

Hab. Batchian (*Wallace*). Type, B.M.

XIX. *Tegmina testaceous, with two irregular parallel transverse black lines.*

28. *Hemisphærius typicus.* Pl. IV. fig. 14.

Hemisphærius typicus, Walker, Journ. Linn. Soc. i. p. 155. n. 67 (1857).

Hab. Borneo (*Wallace*). Type, B.M.

XX. *Transverse bands piceous, very broad.*29. *Hemisphærius fasciatus*. Pl. IV. fig. 15.

Hemisphærius fasciatus, Stål, Trans. Ent. Soc. ser. 3, i. p. 587. n. 6 (1863).

Hab. Mysol (*Wallace*). Type, B.M.

XXI. *Bands very slender, the upper one oblique.*30. *Hemisphærius signifer*. Pl. IV. fig. 16.

Hemisphærius signifer, Walker, List Homopt. Ins. ii. p. 380. n. 5 (1851).

Hab. Hong Kong (*Bowring*). Type, B.M.

XXII. *Bands uniting behind and broad.*31. *Hemisphærius dubius*, n. sp. Pl. IV. fig. 17.

Hemisphærius Schaumi, Walker, MS. (nec Stål).

Entire structure the same as in *H. bipustulatus*, of which it may be a variety; the frons is of the same fusiform shape, scarlet, with the margins and central ridge green; the head narrow, testaceous above; scutellum and basal margin of tegmina greenish testaceous; tegmina fulvous, with basal half of costal margin and apical margin edged with black; a broad sigmoidal black central band, and below it, connecting it with the inner margin, a mass of congregated black atoms; two or three brownish atoms towards the apex; venter creamy, with the anus and a broad transverse band black; legs reddish testaceous, longitudinally streaked with green and black at the knees.

Length $4\frac{1}{2}$ millimetres.

Hab. Ceylon, Ramboddo (*Nietner*). Type, B.M.

I do not know how far the species of *Hemisphærius* are subject to variation; so far as I have seen they seem to be pretty constant; still, from the perfect identity in structure of this species with *H. bipustulatus*, I feel some doubt of its distinctness. The *H. Schaumi* of Stål is described as "dirty yellowish, with greenish yellow frons, a central red streak; hemelytra dirty subhyaline, the anterior part of costal margin black, and a small sutural black spot, two somewhat curved oblique submedian yellow lines: length 5, width 5 millimetres. Island of Taprobana." This may be another variety.

XXIII. *Brownish testaceous, with paler transverse irregular bands.*

32. *Hemisphærius cervinus*. Pl. IV. fig. 18.

Hemisphærius cervinus, Walker, Journ. Linn. Soc. x. p. 131. n. 130 (1870).

Hab. New Guinea (*Wallace*). Type, B.M.

33. *Hemisphærius Schaumi*.

Hemisphærius Schaumi, Stål, Öfvers. Kongl. Vetensk. Akad. Förhandl. xii. p. 191 (1855).

Hab. Ceylon.

Walker labelled an entirely distinct form in the Museum collection as this insect (see no. 31).

XXIV. *Tegmina darker or paler brown, spotted with yellow.*

34. *Hemisphærius flavimacula*. Pl. IV. fig. 19.

Hemisphærius flavimacula, Walker, List Homopt. Ins. ii. p. 378. n. 2 (1851).

Hab. Hong Kong (*Bowring*). Type, B.M.

XXV. *Tegmina piceous, with two irregular streaks on apical half and the apical margin testaceous.*

35. *Hemisphærius recurrens*, Walker, MS. Pl. IV. fig. 20.

Structure of *H. chilocorides*: frons rugulose, longer than wide, excavated above, gradually expanding downwards; lateral marginal ridge not prominent, punctured; head narrow; scutellum triangular, nearly equilateral, with central longitudinal and marginal ridges; tegmina with prominent shoulders, rugulose, semitransparent: body testaceous; tegmina piceous, apex, apical half of costal margin, a diffused subapical streak nearly parallel to the costa, and a straight transverse dash from the inner margin towards apex testaceous.

Length 6 millimetres.

Hab. Fowchowfoo, China (*G. T. Lay*). Type, B.M.

Evidently nearly allied to *H. chilocorides*.

XXVI. *Tegmina with four irregular streaks or spots, the apex and costal margin testaceous.*

36. *Hemisphærius variabilis*, n. sp. Pl. IV. fig. 21.

Allied to the preceding: frons longer, less excavated above, much smoother; scutellum much wider than long, without central ridge; tegmina much more rugose, shoulders much

less prominent: body testaceous; tegmina piceous, with the base, apex, costal border, two ill-defined spots placed transversely on basal area, and two streaks (as in the preceding species) on apical area testaceous; the ground-colour towards the margins on apical half blackish; apical margin narrowly black.

Length 6 millimetres.

Var. Tegmina wholly testaceous.

Hab. Japan (*Fortune*). Type, B.M.

Var.? Smoother than the preceding, sordid testaceous, the pale testaceous markings obsolescent; two subcostal black spots towards apex of tegmina.

Hab. South Japan (*G. Lewis*). B.M.

XXVII. *Tegmina black, spotted with scarlet.*

37. *Hemisphærius cruentatus*, n. sp. Pl. IV. fig. 22.

Frons truncate-subconical, excavated at vertex, at its lower extremity nearly as wide as it is long, almost smooth; head rather broad, scutellum nearly equilaterally triangular; tegmina rather prominent at the shoulders, slightly rugulose, opaque: body scarlet, legs stramineous; tegmina black, shining, each with three large rounded scarlet spots, the largest almost in the centre, the second oval, on apical area, the smallest upon the centre of the sutural line and almost in a transverse line with the largest.

Length $4\frac{1}{2}$ millimetres.

Hab. —? (*from Mr. Saunders's collection*). Type, B.M.

This beautiful little species has more nearly the aspect of a *Coccinella* than any other member of the genus.

XXVIII. *Tegmina unicolorous, dark piceous, castaneous, or black.*

38. *Hemisphærius niger*.

Hemisphærius niger, Walker, Journ. Linn. Soc. i. p. 155. n. 66 (1857).

Hab. Malacca (*Wallace*). Type, B.M.

Walker gives no reason for inserting this species in his paper on Bornean Homoptera.

39. *Hemisphærius concolor*.

Hemisphærius concolor, Walker, Journ. Linn. Soc. x. p. 131. n. 132 (1870).

Hab. New Guinea (*Wallace*); Java (*E. India Company*). Type, B.M.

Very like the preceding species; but darker, with narrower

head and much smoother tegmina. A small example of this species from Dorey has received from Mr. Walker the MS. name of *H. subconcolor*.

40. *Hemisphærius tristis*.

Hemisphærius tristis, Stål, Trans. Ent. Soc. ser. 3, i. p. 587. n. 5 (1863).

Hab. Batchian (*Wallace*). Type, B.M.

41. *Hemisphærius Walkeri*, n. sp.

Hemisphærius chilocoroides [sic, nec *chilocorides*], Walker, Journ. Entom. p. 308 (1862).

Hab. Siam.

This is not at all likely to be the male of Walker's Chinese species.

42. *Hemisphærius bacculinus*, n. sp.

Narrow, compressed, ovate; frons truncate, pyriform, transversely rugose at the sides and longitudinally depressed in the middle, nearly twice as long as broad; head rather wide; scutellum nearly equilaterally triangular; tegmina almost elliptical, appressed at the sides: frons piceous, paler on vertex; collar sordid testaceous; scutellum piceous; tegmina deep castaneous, paler at apex and at the extreme edge of the sutural margin; venter and legs testaceous.

Length 4 millimetres.

Hab. Borneo (*Wallace*). Type, B.M.

This species is even more compressed in appearance than *H. pulcherrimus*.

EXPLANATION OF PLATE IV.

The right tegmen of the following species is figured, to show the pattern.

- | | |
|--|---|
| <i>Fig. 1.</i> <i>Hemisphærius villicus</i> , Stål. | <i>Fig. 12.</i> <i>Hemisphærius circumcinctus</i> , Stål. |
| <i>Fig. 2.</i> — <i>coccinelloides</i> , Burmeister. | <i>Fig. 13.</i> — <i>signatus</i> , Stål. |
| <i>Fig. 3.</i> — <i>tæniatus</i> , Stål. | <i>Fig. 14.</i> — <i>typicus</i> , Walker. |
| <i>Fig. 4.</i> — <i>vittiger</i> , Stål. | <i>Fig. 15.</i> — <i>fasciatus</i> , Stål. |
| <i>Fig. 5.</i> — <i>pulcherrimus</i> , Stål. | <i>Fig. 16.</i> — <i>signifer</i> , Walker. |
| <i>Fig. 6.</i> — <i>nigrolineatus</i> , Walker. | <i>Fig. 17.</i> — <i>dubius</i> , Butler. |
| <i>Fig. 7.</i> — <i>submarginalis</i> , Walker. | <i>Fig. 18.</i> — <i>cervinus</i> , Walker. |
| <i>Fig. 8.</i> — <i>lativitta</i> , Walker. | <i>Fig. 19.</i> — <i>flavimacula</i> , Walker. |
| <i>Fig. 9.</i> — <i>dilatatus</i> , Walker. | <i>Fig. 20.</i> — <i>recurrens</i> , Walker. |
| <i>Fig. 10.</i> — <i>subapicalis</i> , Walker. | <i>Fig. 21.</i> — <i>variabilis</i> , Butler. |
| <i>Fig. 11.</i> — <i>contusus</i> , Walker. | <i>Fig. 22.</i> — <i>cruentatus</i> , Butler. |

