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THE GENUS *Phyllodinus* AND ITS ALLIES (HOMOPTERA-FULGORIDAE)

Including the Description of a New Genus and Species

By E. D. BALL

The writer recently collected a new and very interesting species of brachypterous Fulgorid with foliaceous tibiae that was evidently closely related to some members of the genus *Phyllodinus*. On reviewing the group preparatory to describing the species it was found that the other species that have been referred to this genus were, in a number of important characters, quite distinct from *P. nervatus*, the type. In the present paper these two groups have been separated, a new genus and species described and the synonymy and distribution of all the species concerned brought as nearly up to date as the material at hand would permit.

Genus *Phyllodinus* Van Duzee

Resembling *Dicranotropis* but with expanded tibiae and with more longitudinal nervures in the apical portions of the elytra. Head broader than the thorax, vertex nearly square, rounding to the front. Front very broad, slightly angularly expanded below the eyes; median carina forked opposite the eyes. Basal joint of the antennae long, slender, almost equalling the second. Lateral carinae of the pronotum following the contour of the eyes. Anterior and middle tibiae and femora flattened—foliaceous. Brachypterous elytra much longer than wide, covering about half of the abdomen. Nervures sharply distinct, numerous. Macropterous elytra broadening apically with 8 terminal nervures.

The type and only species of this genus as here defined is *P. nervatus* Van Duzee.

Phyllodinus nervatus Van Duzee

Eurysa nervata Van Duzee Bull. Buff. Soc. N. Sc. 5 p. 191. 1894.

Resembling *Pissonotus brunneus* but larger, with longer elytra and expanded tibiae. Length $2\frac{1}{2}$ -3 mm.

Vertex about square, front very broad, broader than the eye; almost parallel margined. Femora and tibiae almost equally foliaceous through-

out. Brachypterous elytra covering the 5th abdominal segment. Macropterous elytra very broad, the radius forked at least twice before the cross nervures. Back of the cross nervures about 8 apical nervures some of which may fork or join.

Color:—Front dark the margins and a number of transverse bands light. Vertex pronotum and scutellum pale. The median foveae of vertex, a pair of crescentic spots on the pronotum behind the eyes, a triangular pair behind them on the scutellum, separated by a pair of narrow stripes, dark. Brachypterous elytra smoky, the nervures definitely light. Abdomen testaceous brown the apex light. Clypeus and expanded legs black or dark smoky.

This species appears to be restricted to Southern Canada and the extreme northern border of the U. S., coming south only in the higher mountains. It was described from N. Y. and Ontario and the writer has taken examples in Logan Canyon, Utah in the Wasatch Mountains, in the Rocky Mountains back of Fort Collins, Colorado, in Rhinelander in Northern Wisconsin, Hardwick in the Green Mountains of northern Vermont and has examples from Franconia, N. H. (Slosson) taken in the White Mountains. All but one of these examples were taken between the 10th and the 30th of July and all were from very wet and often partially shaded meadows.

Genus *Phyllodictus* gen. nov.

Resembling *Pissonotus* in size and form but with expanded tibiae as in *Phyllodinus*. Head definitely narrower than the thorax, the vertex narrower than the long diameter of the eye. Front somewhat broader than long. The carinae of the vertex and front as in *Pissonotus*. Lateral carinae of the pronotum straight, divergent, becoming obsolete before the posterior margin. Middle and anterior femora and tibiae expanded, the anterior tibiae broad and foliaceous, sometimes as broad as the front. Brachypterous elytra short, as wide or wider than long. Venation reticulate or obscure. Macropterous elytra hyaline, venation simple as in *Pissonotus* not more than 5 apical veinlets.

Type of the genus *P. tessellatus* n. sp.

Muir recently called attention to the two groups and their relation to *Dicranotropis* and *Pissonotus* but to the writer the differences in width of head and direction of pronotal carinae, although undoubtedly distinctive, do not represent as great a divergence as the remarkable complexity of venation and the difference in the place of abbreviation of the brachypterous elytra as exhibited in *P. nervatus*, as compared with either *Pissonotus* or *Phyllodictus*.

KEY TO THE SPECIES OF PHYLLODICTUS

- A.—Brachypterous elytra tessellate. Venation reticulate. First antennal joint as broad as long. 1—*tessellatus* n. sp.
- AA.—Brachypterous elytra polished, venation obscure, not reticulate.
- B.—Front with narrow transverse white bands above the broad apical one. Oblique white bands on pronotum and elytra. —2—*flabellatus* Ball.
- BB.—Front highly polished, unicolorous. Narrow transverse white bands on pronotum and elytra. 3—*nitens* Van D.

Phyllodictus tessellatus n. sp.

Superficially resembling *Phyllodinus nervatus* but smaller with shorter elytra and strikingly different venation. Brownish, heavily tessellated above with pale, except for the abdomen. Length 2mm.

Head narrow, vertex longer than wide, about equalling the pronotum, rounding over to the broad retreating front; carinae obscure, the fork long and narrow. Front very broad, almost square, weakly tricarinate. Clypeus tumid. Pronotum broad, parallel margined, the lateral carinae with one or two short spurs on the inner margins. First joint of antennae short, as broad as long, second joint three or more times the first in length. Brachypterous elytra narrow covering the second segment, closely and evenly reticulate. Macropterous elytra with simple venation as in *flabellatus* except that all the main veins are forked and there may be a few faint reticulations in this region.

Color.—Vertex, pronotum, scutellum and elytra white, irrorate and tessellate with brown. Abdomen brown with a few pale lines. Vertex with a brown band on the anterior margin and a pair of black spots at base, a larger pair on pronotum. Front shining brown, clypeus pitchy, a broad white band on suture. Antennae and anterior legs brown. Macropterous elytra transparent the nervures covered with setigerous black dots and there is a black spot before the apex of clavus.

Type female, allotype male and 9 paratypes collected in low wet "flat woods" at Sanford, Fla. by the writer and one paratype female taken at Meridian, Miss. (Drake.)

Phyllodictus flabellatus Ball

Phyllodinus flabellatus Ball Can. Ent. 34 p. 232 1902.

Phyllodinus koebeli Osb. Ohio Nat. 4 p. 46 1903.

Phyllodinus fuscous Osb. Ohio Nat. 4 p. 46 1903.

Pissonotus piceus Spooner Can. Ent. 44 p. 238 1912.

Large, dark brown, shining with white bands on face, pronotum and elytra. Length 2.5-3mm. Vertex and face narrow, almost parallel margined, pitchy, transversely banded with white. Anterior half of pronotum black, posterior half and scutellum obliquely white. Elytra testaceous or black, shining, the posterior margin sharply and slightly obliquely white. Abdomen brown with narrow longitudinal white flecks. Clypeus black. Anterior tibiae expanded more than femora. Macropterous elytra pale with a dark commissural spot; five apical nervures.

This species which superficially resembles *Pissonotus marginatus* is found in similar situations in moist meadows or the margins of swamps. It has been taken in Ohio (Osborne), Pa. (Wirtner), N. Y. (Spooner), N. J., D. C. (Heid) (Ball), Prairie, Miss. (Drake) and Sanford, Fla. (Ball). All the specimens examined have been taken in July or September.

The writer is very certain that the above synonymy will be found to be correct. Osborn described his species before seeing the description of *flabellatus*. The examples of *fuscous* examined have all appeared to be immature. With more material it may be possible to set off a light colored variety for which the name *fuscous* may be used. Spooner apparently did not know that in *flabellatus* and its allies the pronotal carinae are straight and so placed it in the genus *Pissonotus* and described it as new at the same time noting its affinities with *Phyllodinus*.

Phyllodictus nitens Van Duzee

Phyllodinus nitens Van Duzee Bull. Buff. Soc. N. Sc. 9 p. 198, 1909.

Resembling *flabellatus* but smaller with a unicolorous front and greatly enlarged anterior tibiae. Length 2.5mm. Head much narrower than the thorax; vertex small, quadrate; front rather broad, curved, highly polished. Brachypterous elytra very short, quadrate, highly polished. Anterior tibiae much broader than the femora, as wide or wider than the front. Color variable rufous or rufo-piceous shading almost to black on abdomen, face and anterior tibiae. A narrow transverse white band on posterior margin of pronotum and again on elytra. No light band on face.

Van Duzee described this species from two females, one macropterous, from Southern Florida. The writer has taken two pair of brachypterous forms in low "flat woods" and swamp margins at Sanford and New Smyrna, Fla. Although varying from very pale to almost black in color this pretty species can be recognized by the extraordinary size of its anterior tibiae and the narrow and strictly transverse dorsal white bands.

Mr. T. E. Halloway, of the U. S. Entomological Laboratory in New Orleans, is spending several weeks in Florida. He is stationed at West Palm Beach and Canal Point where he is attempting to establish a Tachinid parasite of the cane borer which is being imported from Cuba. The Experiment Station is also attempting to establish these parasites in Florida in cooperation with County Agent Leo Wilson of Manatee County.