A new genus of Agrilinae from Southern Africa (Coleoptera: Buprestidae) (1)

Charles L. BELLAMY & R. L. WESTCOTT


A new genus, *Agrilophotus* Bellamy & Westcott, is described for *Agrilomorpha acutipennis* (Fàhraeus) [= *Agrilus fahraei* Saunders, *syn. nov.*] from southeastern Zimbabwe and northwestern Transvaal. The species is redescribed and a lectotype is designated. *Agrilophotus* is discussed in relation to the perceived sister taxa, *Agrilomorpha* Théry and *Diplolophotus* Abeille de Perrin. *Diplolophotus* is recognized at generic level.

**Key words:** Coleoptera, Buprestidae, Agrilinae, Zimbabwe, Transvaal.

INTRODUCTION

A recent paper (Bellamy, 1990) attempted to clarify the classification of the African genera of Agrilini Gory & Laporte while pointing out several areas which still require resolution. In that paper, *Diplolophotus* Abeille de Perrin 1897 was considered a subgenus of the extensive cosmopolitan genus *Agrilus* Curtis 1825. After further study and discussion with colleagues and the continuation of a revision of the confused genus *Agrilomorpha* Théry 1909 by one of us (CLB), it is felt that a more proper placement for *Diplolophotus* would be at full generic rank; the reasoning for this will be given below.

In the process of the revision of *Agrilomorpha*, the controversially placed *A. acutipennis* Fàhraeus was also found to represent a new genus. Since this species has been known only by four syntypes (NHRS), it is coincidental that a small series of recently collected specimens was available for inclusion and provides the basis for redescription, distribution and biological data. Some of this material was collected by us during an expedition to Zimbabwe in early 1986, with the remainder from several localities in the northwestern regions of the Transvaal Province, Republic of South Africa.

Deposition of this material is as follows: CLBC, C. L. Bellamy collection; MCCI, Museo Civico di Storia Naturale, Carmagnola, Italy; NHRS, Naturhistoriska Riksmusset, Stockholm, Sweden; NMPC, National Museum, Prague, Czechoslovakia

---

(1) Studies in the African Agrilinae, Agrilini III
(2) Current address: Charles L. Bellamy, c/o Dept of Entomology, San Diego Museum of Natural History, P.O. Box 1390, San Diego CA 92112, U.S.A.

© 1992 AGAR Publishers
RLWE, R. L. Westcott collection; and SANC, South African National Collection of Insects, Pretoria.

DESCRIPTIONS

Genus Agrilophotus gen. nov.

Type-species

Amorphosoma acutipennis Fåhraeus (here designated).

Agrilini; subcylindrical, elongate; flattened dorsally, transversely convex ventrally; integument nitid iridescent, clothed with irregular vestiture of bicolorous setae.

Head with frontovertex produced between eyes, on either side of broad longitudinal depression, produced lateral portions strongly compressed, bordered laterally by ocular groove; frontoclypeus emarginate distally; gena broad, elongate, disc entire; labrum only feebly visible; mandibles robust; most of oral cavity hidden beneath mentonniere. Antennae serrate from 4th antennomere; antennomeres progressively wider distally.

Pronotum somewhat irregular; disc with feeble depressions and elevations medially, broadly explanate laterally; one small moderately elevated, arcuate premarginal carina on either side; lateral margins carinate; sublateral carina (Fig. 4) widely separated from lateral carina at anterior margin, narrowing gradually to about basal 1/3 before feebly diverging, not quite attaining basal margin of hypomeron.

Scutellum large, transversely carinate.

Elytra attenuate to separately acuminate apices.

Pygidium hidden beneath elytra except for projecting apical spine.

Prosternum with mentonniere strongly produced and broadly rounded; process subparallel between procoxae.

Metacoxal plate with posterior margin excavate to receive femur in repose.

Abdominal sternites robust; sutures well indicated between 2, 3, 4 and 5; 5 with moderately deep premarginal groove which extends parallel to margin.

Legs. Tibiae with two short apical spines; metatibiae with setal comb on external margin; tarsi with ventral pulvilli on first four tarsomeres; 5 with claws bifid, inner teeth shorter.

Wing (Fig. 8): radial cell absent; radiomedian crossvein connects between radial sector and median veins; 1stA absent; 2dA1 shortened, unconnected; 2dA2 elongate, unconnected; 2dA3 connected at base to 3dA; 4thA present.
Fig. 2-10.- (2, 4, 8, 10) *Agrilophotus acutipennis* (Fähraeus).- (5, 7, 9, 11) *Diplophotus nubeculosus* Fairmaire.- (2, 5) head, frontal aspect; (3, 6) head, oblique lateral aspect, arrow indicates subocular genal carina; (4, 7) pronotum, lateral aspect, arrow indicates partial transverse hypomeral carina; (8, 9) metathoracic wing, dorsal aspect; (10, 11) male genitalia, dorsal aspect. Scale lines = 1 mm and are equal for Figs. 2 - 7, 8 & 9, 10 & 11, respectively.
Genitalia: male (Fig. 10), moderately sclerotized, subconvex in lateral view; parameres nearly translucent; female, very elongate, narrow, membranous with subapical and apical areas of sparse, elongate sensory bristles.

Remarks

This genus is named for its somewhat nebulous position between the enormous and heterogeneous worldwide Agrilus and the small, more well defined Afrotropical Diplolophotus. The differences between Diplolophotus (Figs 5-7, 9, 11) and Agrilophotus (Figs. 2-4, 8, 10) are illustrated for comparison. The most noticeable difference is the presence of a subocular genal carina (Fig. 6 arrow) on Diplolophotus, a character which defines this genus and also separates it from the remainder of Agrilus. The configuration of the lateral and sublateral pronotal carinae is also important in defining these taxa. Agrilophotus has these two carinae completely separated along their entire length, while Diplolophotus has a configuration more like Agrilus, with the sublateral carina becoming confluent with the lateral somewhere before the pronotal base. The wing venation of both genera (Figs. 8, 9) is similar and agrees with the general scheme of the Agriliini, most importantly in the absence of a radial cell. The structure of the male genitalia is significant, as Diplolophotus nubeculosus Fairmaire (Fig. 11) is heavily sclerotized and more similar to a generalized Agrilus aedeagus. That of Agrilophotus acutipennis is only moderately sclerotized, with the apicolateral portions of the parameres nearly transparent, and is somewhat convex in lateral view. This structural type is much more similar to that of Agrilomorpha. One other character state which distinguishes Agrilophotus from these related taxa are the separately, strongly attenuate elytral apices. The partial transverse hypomeral carina of Agrilophotus (Fig. 4 arrow) is an autapomorphic character state in relation to the remaining African agriline genera.

Agrilophotus acutipennis (Fähraeus), comb. nov.

(Fig. 1 - 4, 8, 10)


Lectotype male (here designated).

Length 6.1 mm; width of abdomen 1.9 mm, of elytra 1.7 mm; subflattened slightly arcuate from front to back; color above black, weakly shining, with vague reddish coppery reflections, apices of elytra reddish coppery, beneath moderately shining with more evident coppery reflection; surface with patches and patterns of coarse golden and white setae.

Head flattened below, with narrow median groove, above broadly and deeply depressed, with heavy lateral carinae which are wider and strongly produced anteriorly and extend to about middle of eye, with a deep narrow groove along entire mesal margin of eye; clypeus broadly, deeply, arcuately emarginate; surface vaguely and shallowly rugose-punctate, vestiture sparse except dense golden setae along frontoclypeal area, a dense patch of mostly white setae on either side of groove at middle, and dense golden setae at middle of depression on vertex extending forward into narrow median groove. Antennae reaching to apical one-fourth of pronotum, serrate from fourth antennomere.

Pronotum 1.8 X wider than long, widest in front of middle; apical margin broadly, shallowly, arcuately emarginate, vaguely produced medially; basal margin angularly trisinuate; sides moderately explanate, margins shallowly bisinuate in lateral view; submarginal carina bold, much more widely separated anteriorly, converging to just
beyond middle then abruptly and arcuately bent, ending just in front of base; anterior angles equilaterally acute, posterior angles subquadrate; disc irregularly, broadly convex, flattened basally, with a broad, moderately deep anteromedian depression, oblique submedian depressions merging to wide lateral ones, and with bold, sharply elevated arcuate prehumeral carinae; surface moderately, shallowly, vaguely (especially at sides) punctate, and finely, irregularly arcuate-obliquely rugose, with moderately spaced golden setae in depressed areas and apically on hypomera, and a few scattered white ones. Scutellum large, strongly elevated, broadly rounded anteriorly, narrowly and triangularly acuminate apically; surface microstriate, with a fine transverse carina.

_Elytra_ about as wide as pronotum, slightly wider at base than pronotal base, widest in humeral region; lateral margins slightly sinuate, then from apical third rather strongly converging to widely separated, very sharply acuminate apices, finely and sparsely serrate along apical third; sutural carinae rather strongly elevated posteriorly, the elytra narrowly impressed beside them; submarginal humeral carina sharply elevated; surface quite even, with moderate basal depressions on each side, rather finely and densely imbricate-punctate, becoming more or less finely rugose anterolaterally, with pattern of coarse setae as in Fig. 1, the golden ones dense in basal depressions and generally concentrated nearer to suture, intervening areas sparsely clothed with fine short golden setae.

_Underside._ - prosternum with mentoniere strongly produced and broadly rounded, moderately deflexed, disc flattened, posterior process parallel to beyond middle of coxae, then strongly converging to narrowly rounded apex; surface finely transversely impressed anteriorly, finely rugulose-punctate on disc, moderately clothed with long coarse white setae; hypomeron with a bold straight flattened carina which extends laterally to near margin, surface with scattered golden setae; meso-, metasterna and metacoxal plate with lateral dense patches of coarse golden and white setae; metacoxal plate strongly sinuate, outer posterior angle dentately acute; abdominal sternites broadly and shallowly convex, lateral (subvertical) portions broadly visible from above, surface finely and moderately punctate, more densely so anterolaterally on first visible sternite, moderately clothed with medium coarse and long recumbent white setae, dense lateral spots of coarsely golden setae on sternites 2-5, these spots with a few coarse white setae apically on sternites 4 and 5, subvertical portions with coarse golden setae on most of sternite 1, a patch with a few coarse white setae on sternites 2 and 3, small patches of coarse white setae on sternites 4 and 5; last visible (5th) sternite truncate apically, margins rather densely serrulate, narrowly and deeply grooved submarginally, subapical plate with a few coarse asperites and long "flying hairs" near shallowly emarginate apical margin.

Legs with femora stout; protibiae slightly arcuate; meso- and metatibiae straight; pro- and mesotibiae mucronate on inner margin at apex.

_Geniualia_ as in Fig. 10.

_Variation_

Length: _n_ = 22, _x_ = 6.7 mm, range = 5.5 - 7.7 mm. The specimens vary in color on the head and on the projecting elytral apices depending on the angle from which each is viewed. The color on the front-overtex is sometimes roseocupreous like the elytral apices. There are subtle differences in the coloration and arrangement of the elytral vestiture. No external secondary sexual characters are apparent.
Material examined


Biology

The recently collected material was all taken by beating the foliage of several, as yet undetermined, species of Acacia.

Remarks

As is apparent from the above list of synonyms, this taxon has been somewhat confused in the minds of previous workers and it is doubtful if any of them have ever examined the syntype series from NHRS. It is listed in two places in the buprestid fascicles of Coleopterorum Catalogus, once under Agrilomorpha (Obenberger 1935) and again under Agrilus (Obenberger 1936), so we presume that Obenberger was uncertain of the identity and proper generic placement. Saunders (1871) transfer to Agrilus required the new name fabraei due to the preoccupation of acutipennis by a North American species described by Mannerheim. However, in the present combination, the original name can be reinstated with fabraei becoming an objective synonym. The type series is composed of four syntypes with identical locality (“Caffraria”) and collector (“J. Wahlberg”) labels. Two specimens have been labelled as “Typus” and “Para- typus” respectively, but apparently this is only an arbitrary designation as no such record is present in the literature. The original description (Fähraeus, 1851) did not indicate the number of specimens but the size range of “Long. 6-7, Lat. 1-2 millin.” indicates more than one. There remains to better define the type locality than the specimen labels allow. “Caffraria” was a region in eastern coastal South Africa composed of part of the northeastern Cape Province and adjacent southwestern Natal. Most, if not all, of the material collected by Wahlberg and described by Boheman & Fähraeus (1851) is simply labelled “Caffraria”, while more specific localities are given with the descriptions. In the case of A. acutipennis, the description lists “Hab. in tractibus fluvii Gariepis” which is the lower Orange river (E. Holm in litt.). The habitat in this area is much different from that of the Transvaal and southern Zimbabwe savanna and thorn scrub where the species has more recently been collected. However, Acacia does exist in many riparian situations in the northwestern Cape and one of us (CLB) has collected several buprestid species in similar localities in that area (e.g. vicinity of Springbok) which are the same or similar to species from the Transvaal savanna.

Acknowledgments

We wish to thank Svatopluk Bily (NMPC) for his comments on this new taxon and comparisons in the Obenberger collection; Erik Holm, Univ. of Pretoria, for his help and support which allowed travel and fieldwork in southern Africa and for his review of the manuscript; Per Lindskog (NHRS) for the loan of the Fähraeus type series; and Art Evans, Rolf Oberprieler and Schalk Louw for the invitation to join their trip in 1987.
REFERENCES


(Manuscript received 7 February 1991, revised 13 August 1991, accepted 4 September 1991)