

Genus Airaphilus Redtenbacher

Airaphilus Redtenbacher, 1858, Fauna Austriaca-Die Kafer  
: 999; Ganglbauer, 1899, Die Kafer von Mitteleuropa  
3 : 578; Grouvelle, 1908, Annls Soc. ent. Fr. 77 :  
488; Reitter, 1911, Fauna Germanica 3 : 33, 45.  
Type-species : Airaphilus elongatus (Gyllenhal)

This genus was established by Redtenbacher (1858) for the species Silvanus elongatus Gyllenhal. Ganglbauer (1899) placed it under the subfamily Silvaninae : Cucujidae, Grouvelle (1908) under the tribe Silvanini : Silvaninae : Cucujidae and Reitter (1911) followed Grouvelle. Hetschko (1930) in Junk's "Coleopterorum Catalogus" listed thirty species under this genus, of which A. abnormis Grouvelle, A. serricollis Reitter and A. andrewesi Grouvelle are recorded from India. So far these species of Airaphilus are recorded from Southern and Eastern India. Hitherto no records of habitats are known. In the present study A. andrewesi has been synonymised with A. serricollis, habitats of above mentioned species are given and larva of Airaphilus serricollis is described for the first time (see p. 286 ).

Definition :

General appearance (Fig. 190) elongated, moderately depressed, deep brown and strongly pubescent.

Head (Fig. 192) elongated or about as broad as long, front margin of clypeus slightly rounded, eyes small to large and coarsely faceted, temple flattened beneath eye to form shelf which partly covers eye, transverse impressed line on vertex behind eyes absent, tentorium with two long tentorial arms connected by a transverse bridge. Antenna moderately long and slender, antennal insertions hidden under projection of frons, 11-jointed, scape moderately large and broadly elongated, joints 2-8 shorter and subequal, club loose and 3-jointed. Mandible (Fig. 199) elongated with 2 apical teeth, mola well-developed, a large mandibular cavity present near base which opened dorsally. Maxilla (Fig. 200) with lacinia narrow, elongated and with one apical spine and few setae; galea broadly elongated and its apex densely hairy; palpi with segments 2 and 3 almost equal, apical segment longest and fusiform. Labium (Fig. 201) with mentum transverse, palpi with apical segment longest and fusiform. Labrum (Fig. 202) transverse with apical margin rounded.

Prothorax (Fig. 193) transverse or elongated, lateral margins with few distinct denticles or teeth, front coxae contiguous, coxal cavities slightly elongated, cavities closed behind externally and opened internally, prosternal process broad at apex and its apical margin almost straight, sternopleural suture extending to anterior margin.

Meso-metathorax (Fig. 195): Mesocoxae contiguous, cavities broadly opened outwardly, lateral margins of mesosternal process slightly notched near apex, sternal fitting between mesocoxae almost in a straight line. Metasternum transverse, median impressed line extends anteriorly about one-third of its length, hind coxae widely separated. Metendosternite simple and represented by two appophyses.

Wing and Elytra : Wing (Fig. 198) with single anal vein and radial cell, without anal cell and subcubital fleck. Elytra somewhat parallel-sided to ovoid, each elytron (Fig.197) with 9 rows of striae punctures, without scutellary striole, punctures and interstices pubescent; epipleura narrow, complete and extending almost upto apex.

Legs (Fig. 194) moderately long, trochanters short and simple, femora swollen towards middle, tibiae not broadened at apex and with two apical spurs; tarsal formula 5-5-5 in both sexes, tarsal segment 1 elongated, segment 2 shorter than segment 1, segment 3 strongly lobed below, segment 4 shortest and claws simple.

Abdomen (Fig. 196) elongated, ventrite 1 longest, intercoxal process broad and its apical margin almost straight, femoral lines opened or closed, ventrites 2-5 subequal. Aedeagus (Fig. 203) with median lobe broad, median sturt

elongated and its apex spatulate; parameres well-developed, slender, elongated and with two apical setae. Ovipositor (Fig. 204) with well-developed paraprocts, valvifers, coxites and styli attached on outer margin of apex of coxites.

Habitat : Haystack.

Distribution : Diversely represented in Europe, with a few species to Africa and Orient.

KEY TO THE SPECIES OF AIRAPHILUS FROM INDIA

1. Prothorax elongated; exposed part of head about as broad as long, eyes large, anterior part of head long and rather narrowed; elytra rather parallel-sided, more than two times as long as broad (2.31 : 1.00)(Fig.188); femoral lines on ventrite 1 closed (Fig.189). .....  
..... abnormis Grouvelle

Prothorax transverse, exposed part of head distinctly transverse, eyes small, anterior part of head short and slightly narrowed; elytra somewhat ovoid, shorter than two times as long as broad (1.78:1.00)(Fig.190); femoral lines on ventrite 1 opened (Fig. 196). ..... serricollis Reitter

39. Airaphilus serricollis Reitter

Airaphilus serricollis Reitter, 1878, Stettin. ent. Ztg.

39 : 319 (Type-loc. : India).

Airaphilus andrewesi Grouvelle, 1908, Annls Soc. ent. Fr.

77 : 493; syn.nov.

This species was described by Reitter (1878a), where he mentioned India as the type-locality but he did not mention any specific locality of collection. So far this species is recorded from Nilgiri Hills : Tamil Nadu. In the present study the author has collected several examples from Howrah and Hooghly districts of West Bengal.

General appearance (Fig.190) elongated, moderately depressed, uniformly deep brown, covered with moderately long and semierect setae.

Head : Exposed part of head wider than long, anterior part of head in front of antennal insertions short and slightly narrowed, front margin of clypeus curved outwardly, eyes small and coarsely faceted, length of eye shorter than one-third of length of head, temple indistinctly visible, two longitudinal depressions well-marked in front of eyes; puncturation on vertex coarse, dense and that of frons and clypeus finer; setae projected posteriorly. Antenna moderately long and slender, scape moderately large, pedicel and joint 3 shorter

and narrower than scape, joints 4 and 5 shorter than joint 3, joint 6 shorter than joint 5, joint 7 slightly wider than joint 6, joint 8 slightly shorter and narrower than joint 7 and transverse, joints 9 and 10 transverse and joint 11 elongated. Prothorax transverse, widest slightly above middle, convex, anterior margin slightly curved; lateral margin outwardly curved and with 10 to 11 denticles, each denticle with a long and posteriorly directed seta and the anterior most denticle with an additional anteriorly directed seta; puncturation on pronotum coarse and dense and similar to that of vertex of head, setae projected posteriorly. Scutellum moderately large, transverse and pubescent. Elytra less than two times as long as broad, more or less ovoid, widest in posterior half, rows of punctures deep and large, setae projected posteriorly. On ventral side puncturation slightly finer than on dorsal side, femoral lines on ventrite 1 opened. Aedeagus (Fig. 203) with apical projection of median lobe broad, parameres long and narrowed towards apex, each paramere with two apical long and few short setae.

Measurements : Total length 2.33-2.37 mm, width of head across eyes 0.38-0.39 mm, length of antenna 0.87-0.88 mm, width of prothorax across middle 0.64 mm, length of elytra 1.54-1.55 mm and width across middle 0.86-0.87 mm.

Materials examined : 34 ex. INDIA : WEST BENGAL, Howrah dist., Sankrail, 32 ex., 2.x.1975 and 7.x.1975, T.K. Pal, haystack; Hooghly dist., Chuchura, 1 ex., 25.ii.1977, T.K. Pal, haystack; Dum Dum, Gopalpur, 1 ex., 14.vi.1974, T. Sengupta, haystack.

Distribution : INDIA : West Bengal, Tamil Nadu.

Remark : Grouvelle (1908) described A. andrewesi from Nilgiri Hills (S. India) but he did not mention any key or differences with its closely related species A. serricollis Reitter. Dr. E. Ratti has informed the author in a personal communication that the cotype of A. andrewesi possess 8 to 10 teeth on lateral margin of prothorax and A. serricollis possess 11 to 13 teeth. 32 examples from Sankrail : Howrah district (West Bengal) are intermediate form of these two species. In the present study the author has examined a long series of 32 examples of Airaphilus sp. and found that the lateral teeth of prothorax vary from 10 to 11. Moreover, in another communication Dr. D.G.H. Halstead who compared these materials with A. andrewesi present in the British Museum (Nat.Hist.) has commented that these are not similar to A. andrewesi Grouvelle and well might be A. serricollis Reitter. Therefore, A. andrewesi Grouvelle mentioned as a junior synonym of A. serricollis Reitter as commented by E. Ratti.

40. Airaphilus abnormis Grouvelle

Airaphilus abnormis Grouvelle, 1912, Annls Soc. ent. Fr.

81 : 326, 330 (Type-loc. : 'Bengal' : India).

Airaphilus depressus Grouvelle (nec.Reitter), 1908,

Annls. Soc. ent. Fr. 77 : 492.

Grouvelle (1908) recorded two examples of Airaphilus depressus Reitter from Bengal and later in 1912 he described these examples as a new species, A. abnormis. One example present in the collection of Zoological Survey of India (Reg.No. 484 )<sup>16</sup> labelled as Airaphilus depressus Reitter has been examined and identified as A. abnormis Grouvelle.

General appearance (Fig. 188) elongated, moderately depressed, uniformly blackish brown, covered with moderately long and semi-erect setae.

Head : Exposed part of head about as broad as long, anterior part of head rather narrowed, eyes large and length of eye slightly shorter than half of length of head, temple indistinct, visible, lateral margin of head elevated in front; puncturation on vertex coarse, dense and that of frons and clypeus finer, clypeus slightly shiny; setae projected posteriorly. Antenna moderately long and slender, scape moderately large, pedicel and joint 3 shorter and narrower than scape, joints 4-6 shorter than joint 3 and subequal, joints 7 and 8 shorter than 6 and

subequal, joints 9 and 10 about as long as broad and joint 11 distinctly elongated. Prothorax elongated, widest across middle, anterior margin curved outwardly; lateral margin uniformly curved outwardly and with 15 denticles, each denticle with a long posteriorly directed seta; puncturation on pronotum coarse and dense and similar to that of vertex of head, setae projected posteriorly. Scutellum moderately large, transverse and pubescent. Elytra more than two times as long as broad, somewhat parallel-sided, slightly wider and more convex in posterior half, apex rounded, rows of punctures deep and large, setae projected posteriorly. On ventral side puncturation of head and prothorax almost similar to that of dorsal side, and of meso-metathorax finer; femoral lines on ventrite 1 closed (Fig. 189).

Measurements : Total length 3.47 mm, width of head across eyes 0.52 mm, length of antenna 1.17 mm, width of prothorax across middle 0.69 mm, length of elytra 2.13 mm and width across middle 0.92 mm.

Materials examined : 2 ex. INDIA : MAHARASTRA, Karla, 1 ex., 16.vii.1967, Gy. Topal, singled material; BIHAR ('Bengal' in label), Madhupur, 1 ex., 5.x.09, C. Paiva. (Z.S.I. Reg. No. 484) .  
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Distribution : INDIA : West Bengal, Bihar, Maharashtra.