

Genus Protosilvanus Grouvelle

Silvanus (Protosilvanus) Grouvelle, 1912, Annls Soc. ent.

Fr. 81 : 336.

Protosilvanus Grouvelle : Halstead, 1973, Bull. Br. Mus. nat. Hist. (Ent.) 29(2) : 89.

Type-species : Protosilvanus lateritius (Reitter)

Grouvelle (1912) erected the subgenus Protosilvanus under the genus Silvanus Latreille and placed the species S. lateritius Reitter, S. inaequalis Grouvelle, S. granosus Grouvelle and S. carinatus Grouvelle under this subgenus. Halstead (1973) while revising the genus Silvanus gave the generic status to Grouvelle's subgenus Protosilvanus and designated S. lateritius Reitter as the type-species of the genus. He also described one more species, P. fasciatus from Fiji. So far, five species have been described under this genus, of which only P. lateritius (Reitter) is recorded from India. Halstead (1973) noted that these beetles occur principally under bark of trees, and he also found that P. lateritius associated with stored products were imported to Britain. This genus can be recognised by its elongated flat body, anterior margin of prothorax sloped at sides to form anterior spines, 7th elytral interstice more or less carinate, and antennal joints 9 and 10 usually with apical spines on lateral sides. Protosilvanus is distributed to

Oriental region and found abundantly all over India, and of which P. lateritius is the most common species. In the present study three species are described, of which two are new to science, and larva of P. lateritius is described for the first time (see p.277).

Definition :

General appearance (Fig.88) elongated, flat, usually yellowish brown to reddish brown.

Head (Fig. 93) transverse, front margin of clypeus straight, eyes moderately large and coarsely faceted, temple flattened beneath eye and shelf-like, transverse impressed line on vertex behind eyes distinct, tentorium simple with two long tentorial arms. Antenna moderately long and slender, antennal insertions hidden under prejection of frons, 11-jointed, scape broadly elongated, joints 2-8 subequal, club loose and 3-jointed. Mandible (Fig.100) elongated, with 3 apical teeth, mola well-developed, a trace of dorsal mandibular cavity near base present. Maxilla (Fig.101) with lacinia narrow and elongated and without apical spines, galea short and broad and its apex densely hairy; palpi with segment 2 longest, segment 3 short, apical segment longer than segment 3 and narrowed at apex. Labium (Fig. 102) with mentum somewhat triangular and transverse, palpi with segment 2 longest and

apical segment short. Labrum (Fig.103) transverse with apical margin slightly rounded.

Prothorax (Fig.94) elongated, lateral margins finely denticulate, front angle with a spine usually beneath anterior margin, pronotum flat, front coxae widely separated, coxal cavities almost round, cavities broadly closed behind externally and internally, prosternal process broad at apex, sternopleural suture extending to lateral margin.

Meso-metathorax (Fig.96): Mesocoxae widely separated and slightly closer than front coxae, cavities broadly opened outwardly, lateral margins of mesosternal process notched near middle, sternal fitting between mesocoxae almost in a straight line. Metasternum about as broad as long, median impressed line extending anteriorly near middle, hind coxae separated slightly wider than mesocoxae. Metendosternite simple and represented by two appophyses.

Wing and Elytra : Wing (Fig.99) with single anal vein and radial cell, without anal cell and subcubital fleck. Elytra parellel-sided, each elytron (Fig.98) with 9 rows of strial punctures, without scutellary striole, alternate interstices with single and double rows of pubescence, epipleura narrow and complete almost upto apex.

Legs (Fig.95) moderately long and slender, trochanters short and simple, hind trochanter with a spine in male, femora swollen towards middle, tibiae not broadened at apex and with two apical spurs; tarsal formula 5-5-5 in both sexes, tarsi simple, tarsal segment 1 long, segments 2 and 3 shorter than segment 1, segment 4 smallest, claws simple.

Abdomen (Fig.97) elongated, ventrite 1 longest, intercoxal process broad and its apex broadly pointed, femoral lines closed, ventrites 2-5 subequal. Aedeagus (Fig.105) with median lobe broad, median sturt elongated and somewhat broader at apex; parameres well-developed, slender, with a few long setae at apex. Ovipositor (Fig.104) with well-developed paraprocts, valvifers, coxites and styli attached on outer margin of apex of coxites.

Habitat : Usually found under bark and also collected from bush, grass and leaf litter.

Distribution : India, Nepal, Bangladesh, Sri Lanka, Burma, Malaysia, Indoneisa, Singapore, Taiwan, Thailand, Japan, China, Philippines, New Caledonia, Moluccas, Solomon Is., Fiji Is.

KEY TO THE SPECIES OF PROTOSILVANUS FROM INDIA

1. Antennal joints 9 and 10 without apical spines (Fig.91),
median impressed line on metasternum extends anteriorly
upto apex of metasternum, species small (2.35 to
2.40 mm). minutus sp.nov.
Antennal joints 9 and 10 with apical spines (Fig.88),
median impressed line on metasternum extends anteriorly
slightly beyond middle, species larger (2.94 to
4.64 mm).2
2. Prothorax widest across anterior spines, anterior spine
prominent (Fig.88). lateritius (Reitter)
Prothorax widest near middle, anterior spine less pro-
minent. (Fig.90). dehradunus sp.nov.

23. Protosilvanus lateritius (Reitter)

Silvanus lateritius Reitter, 1878, Verh. zool.-bot. Ges.
Wien 28 : 194; Grouvelle, 1908, Annls Soc. ent. Fr.
77 : 490. (Type-loc. : Sri Lanka).

Silvanus (Protosilvanus) lateritius Reitter : Grouvelle,
1912, Annls Soc. ent. Fr. 81 : 336.

Protosilvanus lateritius (Reitter) : Halstead, 1973, Bull.
Br. Mus. nat. Hist. (Ent.) 29(2) : 96.

This is the most widely distributed species of Protosilvanus
and found under bark of various trees. Reitter (1878b) described

this species from Sri Lanka. Grouvelle (1908) recorded this species in India from Western Dekhan, Nilgiri Hills and Andaman Is. Halstead (1973) recorded this species from Nepal and Bangladesh. In the present study this species has been recorded from following states of India : Arunachal Pradesh, Meghalaya, Assam, West Bengal, Bihar, Uttar Pradesh, Himachal Pradesh, Kerala, Tamil Nadu and Andaman Is.

General appearance (Fig. 88) elongated, flat, yellowish brown to blackish brown; covered with short, semierect, golden pubescence.

Head : Exposed part of head wider than long, eyes moderately large, length of eye about half of length of head, length of temple shorter than width of one eye facet and its outer apical angle pointed; puncturation on vertex coarse, dense and that of towards anterior margin of clypeus slightly finer; setae projected towards middle line. Antenna moderately long and slender, scape moderately large, joints 2-7 subequal and slightly narrower than scape, joint 8 smallest, joints 9 and 11 about as broad as long and joint 10 transverse, apical spines present on joints 9 and 10. Prothorax flat, elongated, anterior margin slightly sinuate near middle, anterior spines distinct and usually well-developed; lateral margins finely serrated, curved and usually slightly sinuate near posterior angles; lateral

depressions on pronotal disc more or less well-marked; puncturation on pronotum coarse, dense and almost similar to that of vertex of head; setae projected towards middle line. Scutellum moderately large and transverse. Elytra more than two times as long as broad, almost parallel-sided, lateral margins slightly wavy, punctures deep and large, interstice 7 strongly carinate and extending slightly more than anterior three-fourth. On ventral side puncturation finer than on dorsal side. Aedeagus (Fig.105) with median lobe tapered at apex; each paramere with a few apical setae, of which posterior three setae longer than others, median sturt long and slightly broader at apex.

Measurements : Total length 2.94-4.64 mm, width of head across eyes 0.62-0.83 mm, length of antenna 1.00-1.44 mm, width of prothorax near middle 0.61-0.88 mm, length of elytra 1.80-2.50 mm and width across middle 0.74-0.94 mm.

Materials examined : 557 ex. INDIA : ARUNACHAL PRADESH, Paporijo, 4 ex., 26.x.1966; Nalero Lohi, 518 m, 4 ex., 4.xii.69 J.M. Julka & party; Kalek, 1158 m, Abor Exped., 2 ex., 29.xii.11, Kemp, under bark; Rotung, 426 m, Abor Exped. 6 ex., 28.xii, 11 & 2.i.12, Kemp, under bark; Above Panji, 1219 m, Abor Exped., 2 ex., 16.i.12. Kemp, under bark; MEGHALAYA, Dainadubi Reserve Forest, Garo hills, 8 ex., 18.xi.1974, T. Sengupta, under bark of Shorea robusta; Songsak Reserve Forest, 8 ex., 21.xi.1974, T. Sengupta,

under bark of Shorea robusta and Cinnamo mura; ASSAM, Sadiya, Abor Exped., 4 ex., 26.xi.11, under bark; Kaxiranga, Panbari, 3 ex., 14.xi.1974, T. Sengupta, under bark of Shorea robusta; Rajabhtkhawa Forest, 3 ex., 11.xi.1974, T. Sengupta, under bark of Gamelina arboria, Amoora wallichii and Artocarpus chaplasi; WEST BENGAL, Jalpaiguri dist., Hasimara, 20 ex., 2.xii.1974, T. Sengupta, under bark of cut logs of Lagerstroemia perviflora; Dhupguri, 4 ex., 14-15.iv. 1971, T. Sengupta, Sweeping bush, and leaf litter; Gayerkata, 8 ex., 15.ii.1974, A. Datta, under bark of Terminalia belerica; Darjeeling dist., Sukna, 4 ex., 22.iv.1971, T. Sengupta under bark; 5 ex., 5.v.1976, T.K. Pal, under bark; Calcutta (Ultadanga & Chetla) 350 ex., iii.1975 to viii.1975, T.K. Pal under bark of Bombax sp., Tamerindus indica, Mangosa sp. Sirish, Harul and several unknown logs; Howrah dist., Rajganj, 2 ex. 13.x.1974, T.K. Pal, under bark; Burdwan dist., Burdwan, 5 ex., 10.vii.1976, T.K. Pal, under bark; BIHAR, Chaibasa, 35 ex., 19.x.1964, 15.x.1971, 29 & 31.xii.1971, 25.x.1974, T. Sengupta, under bark of Mangosa sp., dead standing and fallen tree and old logs, on living grass etc.; UTTAR PRADESH, Gorakhpur, 2 ex., 15.iv.1973, R. Lyall; 8 ex., 24.ix.1974, T. Sengupta, under bark of Bombax sp. ; Dehra Dun, Lakshibag, 10 + 20 ex., 10.vi.1975, T. Sengupta, under bark of Jhingan tree and under bark of unknown log respectively; Dehra Dun, Natwarabag, 2+9 ex., 1.vii.1975, T. Sengupta, on fungusy bark of Shorea robusta and under bark of Raani log; HIMACHAL PRADESH,

Nahan Renuka, 932 m, 10 ex., 17.vi.1975, T. Sengupta, under bark of dead branch of fig tree; KERALA, Walayar forest, 5 ex., 1.xii.1971, T. Sengupta, under bark; TAMIL NADU, Madumalai Reserve Forest, 10 ex., 7.xii.1971, T. Sengupta, under bark; ANDAMAN Is., Port Blair, 4 ex., 15.ii-15.iii.15, Kemp.

Distribution : So far this species is recorded only from South India and Andaman Is. and in the present study this has been recorded almost throughout India.

24. Protosilvanus dehradunus sp.nov.

This species is closely related to Protosilvanus lateritius (Reitter) but can be differentiated by its prothorax being widest across middle, anterior spine not prominent.

General appearance (Fig.90) elongated, moderately depressed, reddish brown; covered with short, semierect, golden pubescence.

Head : Exposed part of head wider than long, eyes moderately large, length of eye slightly less than half of length of head, length of temple shorter than width of one eye facet and its outer apical angle pointed; puncturation on vertex coarse, dense and that of towards anterior margin of clypeus slightly finer; setae projected towards middle line. Antenna moderately long and slender, scape moderately large, pedicel and joint 3 about as long as scape and slightly narrower, joint 4 slightly shorter than joint 3,

joint 5 slightly longer and wider than joint 4, joint 6 slightly shorter than joint 5 and more or less equal to joint 4, joint 7 longer and wider than joint 6, joint 8 shorter and narrower than joint 7, joints 9 and 11 about as long as broad and joint 10 transverse, apical spines present on joints 9 and 10. Prothorax flat, elongated and narrowed posteriorly, anterior margin slightly sinuate near middle, anterior spine small and not prominent; lateral margins finely serrated, curved and slightly sinuate before posterior angles; lateral depressions on pronotal disc rather well-marked; puncturation on pronotum coarse, dense and slightly coarser than on vertex of head; setae projected towards middle line. Scutellum moderately large and transverse. Elytra more than two times as long as broad, almost parallel-sided, lateral margins slightly wavy near middle, punctures deep and large, interstices 3 and 5 slightly raised and interstice 7 strongly carinate and extending almost upto anterior three-fourth. On ventral side puncturation finer than on dorsal side.

Measurements of holotype : Total length 3.76 mm, width of head across eyes 0.73 mm, length of antenna 1.27 mm, width of prothorax near middle 0.80 mm, length of elytra 2.14 mm and width across middle 0.88 mm.

Holotype ♀, INDIA: UTTAR PRADESH, Dehra Dun, Lakshibag, 10.vi.1975, T. Sengupta, under bark of Jhingan tree (in Zoological Survey of India, Calcutta).

Distribution : INDIA : Uttar Pradesh.

25. Protosilvanus minutus sp.nov.

This species can be easily distinguished from P. lateritius and P. dehradunus by its antennal joints 9 and 10 devoid of apical spines, median impressed line on metasternum extending upto apex of metasternum, 7th elytral interstice less carinate and shorter in length. The aedeagus of this species also differs from lateritius by its median lobe more pointed at apex and apex of paramere broader and with two short setae and six long setae.

General appearance (Fig.91) elongated, flat, reddish brown; covered with short, semierect, golden pubescence.

Head : Exposed part of head wider than long, eyes moderately large, length of eye about half as long as head, length of temple shorter than width of one eye facet and its outer apical angle acute, puncturation on vertex coarse, dense and that of towards anterior margin of clypeus slightly finer; setae projected towards middle line. Antenna moderately long and slender, scape moderately large, pedicel about as long as scape and slightly narrower, joint 3 slightly shorter and narrower than pedicel, joint 4 shorter than joint 3, joint 5 slightly longer than joint 4, joint 6 shorter than joint 5 and equal to joint 4, joint 7 slightly longer and wider than joint 6, joint 8 slightly shorter and narrower than joint 7, joints 9 and 10 clearly transverse and devoid of any spine, joint 11 about as long as broad. Prothorax flat, elongated, slightly narrowed posteriorly and almost similar

to P. lateritius; anterior spine small and its tip slightly pointed; lateral margins finely serrated, curved and slightly sinuate near posterior angles; lateral depressions on pronotal disc slightly marked; puncturation on pronotum coarse, dense and similar to that of vertex of head; setae projected towards middle line.

Scutellum moderately large, transverse. Elytra more than two times as long as broad, almost parallel-sided and lateral margins slightly wavy near middle, punctures deep and large, interstices alternately wider and narrower, 7th interstice slightly raised than other interstices and prominent upto anterior three-fourth. On ventral side puncturation finer than on dorsal side. Aedeagus (Fig. 106) with median lobe broadly elongated and tapered at apex, apex of each paramere slightly broader and with two short and six long apical setae.

Measurements of holotype : Total length 2.35 mm, width of head across eyes 0.52 mm, length of antenna 0.76 mm, width of prothorax near middle 0.50 mm, length of elytra 1.41 mm and width across middle 0.58 mm.

Holotype ♂, INDIA: WEST BENGAL, Darjeeling dist., Rangpo, 450 m, 21.4.1976, T.K. Pal, under bark of Ailanthus grandis. Aedeagus dissected and mounted on cover slip and pinned with the holotype; Paratypes 3 ex., data same as holotype (in Zoological Survey of India, Calcutta).

Distribution : INDIA : West Bengal (Darjeeling district).

Remark : 1 ♀ collected from West Bengal : Ultadanga by author, under bark of Sirish log has been studied and observed the following differences :- anterior margin of prothorax curved at extremities and continues to form the anterior spines, meeting point of anterior margin of prothorax and that of anterior spine not sharply demarcated (Fig. 92).

Genus Ahasverus Gozis

Ahasverus Gozis, 1881, Annls Soc. ent. Fr. (6) 1 Bull.

p. CXXVII; Reitter, 1911, Fauna Germanica 3 : 45;

Grouvelle, 1912, Annls Soc. ent. Fr. 81 : 372-385.

Cathartus (Ahasverus) Gozis : Reitter, 1882, Dt. ent. Z.

26 : 296; Ganglbauer, 1899, Die Käfer Von Mitteleuropa

3 : 587; Grouvelle, 1908, Annls Soc. ent. Fr. 77 : 492.

Type-species : Ahasverus advena (Waltl)

The genus Ahasverus was erected by Gozis (1881) for the species Cathartus advena (Waltl). Reitter (1882), Ganglbauer (1899) and Grouvelle (1908) considered it as a subgenus of Cathartus Reiche. Reitter (1911) re-established its generic status. This genus seems to be more diversely represented in temperate climate and often found in mouldy stored foods. Stebbing (1914) recorded this species in India from Madhya Pradesh,