

line on metasternum extends anteriorly upto middle. Aedeagus (Fig. 139) with parameres elongated widest near apex and each paramere with four setae at apex; median sturt broad at apex and its apical margin curved outwardly.

Measurements of holotype : Total length 1.62 mm, width of head across eyes 0.39 mm, length of antenna 0.60 mm, width of prothorax across middle 0.41 mm, length of elytra 1.02 mm and width across middle 0.58 mm.

Holotype ♂, INDIA : MEGHALAYA, Sarengina, Dainadubi, 19.xi.1974, T. Sengupta, flower of Boga medulla. Aedeagus dissected and mounted on cover slip and pinned with the holotype; Paratypes 11 ex., data same as holotype (in Zoological Survey of India, Calcutta).

Distribution : INDIA : Meghalaya.

Genus Silvanopsis Grouvelle

Silvanopsis Grouvelle, 1892, Annls Soc. ent. Fr. 61 : 285.

Type-species : Silvanopsis simoni Grouvelle.

Silvanopsis is a small genus and comprised of minute beetles ranging from 2.61-3.08 mm in length. This genus was established by Grouvelle in 1892 based on two species namely, Silvanopsis simonis Grouvelle and Silvanopsis raffrayi Grouvelle

Eyes larger and about half as long as head, distance between two eyes on ventral side of head less than 1.5 times of length of each eye; anterior spine of prothorax short or long but distinctly broader and less pointed; posterior one-third of elytra slightly narrowed towards apex (Figs.29,31); hind trochanter of male devoid of any spine10

10. Anterior spine of prothorax short and about one-third of length of each eye (Fig.33).....
..... andamanicus sp.nov.

Anterior spine of prothorax distinctly longer and about half as long as eye or longer (Figs.29,31). 11

11. Anterior spine of prothorax large, distinctly longer than half of length of each eye, anterior spine slightly narrow and its tip somewhat pointed, lateral margin of prothorax sinuate before posterior angle to form a short spinous projection; antennal joint 7 not longer than joint 6 (Fig.31); hind femora widest before middle (Fig.32); colour blackish brown
..... nigrans Pal and Sengupta

Anterior spine of prothorax moderately large and about half of length of each eye, anterior spine comparatively broader than above and its tip blunt, lateral margin of prothorax not or little sinuate before posterior angle and without spinous projection; antennal joint 7 slightly longer and broader than joint 6 (Fig.29); hind femora widest at middle (Fig.30); colour reddish brown. ruficorpus Pal and Sengupta

1. Silvanus lewisi Reitter

Silvanus lewisi Reitter, 1876, Col. Hefte 15 : 76; Grouvelle, 1908. Annls Soc. ent. Fr. 77 : 491; Halstead, 1973, Bull. Br. Mus. nat. Hist. (Ent.) 29(2) : 53; Pal and Sengupta, 1977, Oriental Ins. 11(2) : 272-273. (Type-loc. : Japan).

Silvanus (Silvanus) lewisi Reitter : Grouvelle, 1912, Annls Soc. ent. Fr. 81 : 338.

Reitter (1876) described this species from Japan, Grouvelle (1908) first time recorded this species in India from Nilgiri Hills. Halstead (1973) reported it from Sendhara (Madhya Pradesh), Cinchona, Anaimalai Hills, Coimbatore (Tamil Nadu), Dohnavar, Kanara, Mysore (Karnataka). He recorded this species from various stored food products and dunnage, at light, under bark of tree stumps. S. lewisi is a rather distinct species and can be easily distinguished from other Indian species of Silvanus in having large eyes, temple shorter than one eye facet and with pointed outer apical angle; prothorax elongated and slightly convergent posteriorly, with anterior spine about half as long as eye and its tip pointed; aedeagus (Fig. 48) with apex of each paramere bilobed, outer apical lobe with two setae of which the outer one is comparatively shorter.

General appearance (Fig. 21) elongated, moderately depressed, uniformly yellowish to reddish brown; covered with short, semi-erect, golden pubescence.

Legs (Fig. 146) moderately long and slender, 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 segments 1-3 subequal and segment 3 slightly lobed below, segment 4 shortest, claws simple.

Abdomen (Fig. 148) elongated, ventrite 1 longest, intercoxal process broad and broadly pointed at apex, femoral lines closed, ventrites 2-5 subequal. Aedeagus (Fig. 155) with median lobe broad and narrowed towards apex, median sturt elongated and bifid at apex; parameres well-developed, slender and with a few setae. Ovipositor (Fig. 156) with well-developed paraprocts, valvifers, coxites and styli attached on outer margin of apex coxites.

Habitat : Chiefly found in brood lac; also in crop, cotton ('Toola'), bush etc.

Distribution : India, Nepal, Philippines, Singapore.

KEY TO THE SPECIES OF SILVANOPSIS FROM INDIA

- Antennal club 3-jointed and joint 9 slightly narrower than joint 10; pronotum distinctly bordered (Fig. 140); lateral margins of mesosternal process notched (Fig. 141) grouvelli sp.nov.
- Antennal club distinctly 2-jointed; pronotum not bordered (Fig. 142); lateral margins of mesosternal process devoid of any notch (Fig. 143). ... nepalensis sp.nov.

from Philippines (Manilla) and Singapore respectively. Hetschko (1930) in Junk's "Coleopterorum Catalogus" listed these two species under this genus. Representatives of this genus are found chiefly in brood lac and also noted in crop (Bajra) and bush. Imms and Chatterjee (1915) reported that the larvae of one species is a common enemy of lac insect (Kerrea lacca). In the present study two species are described as new to science.

Definition :

General appearance (Fig.140) elongated, moderately flattened, usually reddish brown to blackish brown.

Head (Fig. 144) transverse, front margin of clypeus usually almost straight, eyes moderately large and coarsely faceted, temple flattened beneath eye and shelf-like, transverse impressed line on vertex behind eyes present, tentorium with two long tentorial arms and a transverse bridge near middle. Antenna short and slender, antennal insertions hidden under projection of frons, 11-jointed, scape broadly elongated, joints 2-9 subequal and narrower than scape, club loose and indistinctly 3-jointed or 2-jointed. Mandible (Fig. 151) elongated, with 3 apical teeth, mola well-developed, a trace of dorsal mandibular cavity present near base. Maxilla (Fig. 152) with lacinia narrow and elongated and without apical spines, galea short and broad and its apex densely hairy; palpi with segments 2 and 3 almost

equal, apical segment longest and fusiform. Labium (Fig. 153) with mentum somewhat triangular and transverse, palpi with apical segment longest and fusiform. Labrum (Fig. 154) with apical margin slightly concave.

Prothorax (Fig. 145) almost quadrate or slightly elongated, lateral margin undulated and forming six broad teeth, pronotum slightly convex, front coxae moderately widely separated, coxal cavities slightly elongated, cavities broadly closed behind externally and opened internally, prosternal process broad at apex and its apical margin almost straight, sterno-pleural suture extending to anterior tooth.

Meso-metathorax (Fig. 147) : Mesocoxae almost contiguous, cavities broadly opened outwardly, lateral margins of mesosternal process usually notched at middle, sternal fitting between mesocoxae almost in a straight line. Metasternum transverse, median impressed line on metasternum extends anteriorly near apex of mesosternal process, hind coxae widely separated. Metendosternite simple and represented by two appophyses.

Wing and Elytra : Wing (Fig. 150) with single anal vein and radial cell, without anal cell and subcubital fleck. Elytra somewhat parallel-sided, each elytron (Fig. 149) with 9 rows of strial punctures, without scutellary striole, alternate interstices with single and double rows of pubescence, epipleura narrow and complete upto apex.

30. Silvanopsis grouvelli sp.nov.

Imms and Chatterjee (1915) mentioned that Silvanus iyeri Grouvelle is an enemy of lac insect. Mahdihassan (1955) recorded a different variety, Silvanus iyeri var. mysorensis from Mysore (Karnataka). It is an unpublished species and moreover, it is not a member of Silvanus Latreille but Silvanopsis Grouvelle. The author has examined several examples of this species including two examples (from Assam) determined by Grouvelle as Silvanopsis iyeri Grouvelle present in the collection of Zoological Survey of India. Moreover, Dr. D.G.H. Halstead in a personal communication confirmed the author that Grouvelle did not publish the description of this species, and there are 'types' of this species present in the 'Paris Museum'. Henceforth, the species is described here and the name is given in honour of A. Grouvelle, who originally discovered and determined the species.

General appearance (Fig. 140) elongated, moderately depressed, reddish brown to blackish brown; covered with short, semierect, golden pubescence.

Head: Exposed part of head wider than long, eyes moderately large and slightly shorter than one-third of length of head, temple about as long as one eye facet and its outer apical angle slightly pointed, puncturation on vertex coarse and dense and that of towards anterior margin of clypeus slightly finer, setae short and

projected towards middle line. Antenna short and slender, scape moderately large, pedicel and joint 3 slightly shorter and narrower than scape, joints 4-7 shorter than joint 3 and about as long as broad, joint 8 elongated and slightly longer than joint 7, joint 9 wider than joint 8 and about as long as broad, joints 10 and 11 transverse. Prothorax convex, slightly elongated and almost parallel-sided; anterior tooth moderately large, broad and projected outwardly; lateral margin with six broad and blunt teeth including anterior tooth, margin of pronotum finely bordered; puncturation on pronotum coarse, dense and similar to that of vertex of head; setae projected towards middle line. Scutellum moderately large, transverse and pubescent. Elytra less than two times as long as broad, widest near middle, lateral margins wavy and slightly explanate, apex of elytra slightly notched, alternate interstices slightly raised and depressed, setae projected posteriorly. On ventral side puncturation finer than on dorsal side. Aedeagus (Fig. 155) with apical projection of median lobe elongated and pointed at apex, each paramere with a long apical seta and four shorter setae on inner margin near apex.

Measurements of holotype : Total length 2.61 mm, width of head across eyes 0.52 mm, length of antenna 0.63 mm, width of prothorax across anterior teeth 0.64 mm, length of elytra 1.58 mm and width across middle 0.85 mm.

Holotype ♂, INDIA : BIHAR, Namkum, 6.i.1971, T. Sengupta, lac. Aedeagus dissected and mounted on slide. Paratypes 6 ex., data same as holotype; Paratype 1 ex., Locality, date and collector same as holotype, bush of grass; Paratype 1 ex., Chaibasa, Putida hills, 29.xii.1970, T. Sengupta, bajra (crop); Paratype 1 ex., ASSAM, Silchar, Cachar, 1911, from 'Toola'; Paratypes 2 ex., Locality ?, 10.xi.10, brood out of lac (in Zoological Survey of India, Calcutta).

Distribution : INDIA : Bihar, Assam, Karnataka.

31. Silvanopsis nepalensis sp.nov.

This is a distinct species and can be readily separated from the former one by its antennal club distinctly 2-jointed and pronotum not bordered.

General appearance (Fig. 142) elongated, moderately depressed, blackish brown; covered with short, semierect, golden pubescence.

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

than scape; joints 4-8 short, subequal and about as broad as long; joint 9 slightly wider than joint 8 and transverse, joints 10 and 11 distinctly transverse of which joint 10 slightly wider than joint 11. Prothorax convex, about as broad as long and almost parallel-sided; anterior tooth moderately large, broad and outwardly projected; lateral margin with six broad and blunt teeth including anterior one, margin of pronotum not bordered; puncturation on pronotum coarse, dense and similar to that of vertex of head; setae projected towards middle line. Scutellum moderately large, transverse and pubescent. Elytra less than two times as long as broad, rather parallel-sided, widest near middle, lateral margins wavy and slightly explanate, apex of elytra slightly notched, alternate interstices slightly raised, setae projected posteriorly. On ventral side puncturation finer than on dorsal side.

Measurements of holotype : Total length 3.08 mm, width of head across eyes 0.61 mm, width of prothorax across anterior teeth 0.76 mm, length of elytra 1.77 mm and width across middle 1.02 mm.

Holotype ♀, NEPAL : Pokhara, 820 m, 15-18.vi.1976, W. Wittmer & C. Baroni Urbani (in Nat. Hist. Mus., Basel).

Distribution : NEPAL.

Remark : Unlike other Silvanopsis the above mentioned species has distinct 2-jointed antennal club, lateral margins of pronotum not bordered and lateral margins of mesosternal process not notched. No attempt has been made to erect a new genus for this species as the species is represented by only single female.