S U M M A R Y

The present work deals with the detailed taxonomic studies of the family Silvanidae of India. A brief account of the historical review has been included. A few species are economically important as they are mainly stored grain pests and cause damage to stored products of vegetable origin. The nature of damage done by these species in India is dealt in detail. The habit and habitat of the Silvanidae is dealt in detail. The silvanids are found mainly under bark, haystack, leaf garbage, flower and in stored grain. The Silvanidae seems to be more diversely represented in the tropical and subtropical climate than in temperate climate of both the Old and New World. The subfamilies Silvaninae and Psammoecinae predominantly occur in the Oriental region including India, and the subfamily Cryptamorphinae mainly occur in the temperate climate and also represented in the higher altitudes in India. The geographical distribution of the family and the Indian genera is cited. The genera are studied by making slide preparation of the specimens. The methods employed especially, for collection and slide preparation of adults and larvae are given. The validity and importance of all morphological characters in the taxonomy of this group have been analysed, and the distinction of Silvanidae from the closely related family Cucujidae is given. Each genus has been redefined in the light of re-evaluated characters of adults.

The Silvanidae was hitherto known from India by 9 genera comprising 30 species. The Indian genera belonging to the subfamily Silvaninae are : Silvanus Latreille, Silvanoprus Reitter, Silvanoides Halstead, Protosilvanus Grouvelle, Ahasverus Gozis, Silvanolomus Reitter, Silvanopsis Grouvelle, Oryzaephilus Ganglbauer, Monanus Sharp and Airaphilus Redtenbacher. The subfamilies Psammoecinae and Cryptamorphinae are represented in India by the genera Psammoecus Latreille and Cryptamorpha Wollaston respectively. A total of 62 species are described in this study; of these, 15 species in Silvaninae, 5 species in Psammoecinae and 4 species in Cryptamorphinae are new to science.

1. Genus Silvanus Latreille

This genus is characterised by its simple tarsi and well-developed prothoracic anterior spines. 12 species are dealt with here, of which 2 are new to science. S. lewisi is the most common species in India.

2. Genus Silvanoprus Reitter

This genus is closely related to Silvanus and can be distinguished by its third tarsal segment lobed below. In this treatment 9 species are dealt with, of which S. angusticollis (Reitter) is recorded for the first time from India and 5 species are new to science. S. javanicus (Grouvelle) is synonymised with S. longicollis (Reitter).

3. Genus Silvanoides Halstead

This genus is closely related to Silvanus and can be separated by the femoral lines on ventrite 1 opened and antennal joints 4-8 about as long as broad or slightly transverse. Silvanoides is so far represented by two species but unrecorded from India. This genus is reported here for the first time from India, S. cheesmanae Halstead is synonymised with S. cribricollis (Grouvelle) comb.nov.

4. Genus Protosilvanus Grouvelle

This genus is characterised by its markedly flat body and antennal joints 9 and 10 usually with apical spines. This genus was so far reported only by P. lateritius (Reitter) from India, which is the most common species of Indian silvanids found under bark. The present study includes 2 new species and the detailed distribution of P. lateritius in India.

5. Genus Ahasverus Gozis

This genus can be characterised by its transverse prothorax with callosity-like anterior spines, and femoral lines on ventrite 1 opened. Ahasverus is a small genus with a single species namely, A. advena (Waltl) is stored grain pest and cosmopolitan in distribution. In this study detailed distribution of A. advena is given.

6. Genus Cathartus Reiche

This genus can be distinguished from Ahasverus by its elongated prothorax, femoral lines on ventrite 1 closed and somewhat parallel-sided body. C. quadricollis (Guérin-Méneville) which is a stored grain pest and recorded from Bangladesh.

7. Genus Silvanolomus Reitter

This genus is characterised by its lateral margin of prothorax with six teeth, without pronotal carinae and distinct 3-jointed antennal club. Silvanolomus was unrecorded from India. In the present study S. denticollis (Reitter) is recorded for the first time from India and one new species is described.

8. Genus Silvanopsis Grouvelle

This genus is closely related to Silvanolomus and can be separated by its antennal club indistinctly 3-jointed or 2-jointed and more or less parallel-sided elytra. This genus so far remains represented by two species from Singapore and Philippines. In the present study 2 new species are described from India. Of these, S. nepalensis sp.nov. is appeared to be a new genus but no attempt has been made to erect a separate genus in this study.

9. Genus Oryzaephilus Ganglbauer

This genus is easily recognised by its lateral margin of prothorax with six teeth and well-developed pronotal carinae. The present study includes 2 new species, and distribution of 2 well-known stored grain pests namely, O. surinamensis (L.) and O. mercator (Fauvel) in India.

10. Genus Monanus Sharp

This genus can be characterised by its lateral margin of prothorax with a few denticles and tarsal segments 3 and 4 lobed below. M. concinnulus (Walker) is one of the common species of Indian Silvanidae. The subgenus Monanops Grouvelle was unrecorded from India. In the present study the subgenus Monanops is recorded for the first time from India with a new species. It was realised that Grouvelle's subgenus Monanops can be given generic rank but no attempt has been made to erect a separate genus in this study.

11. Genus Airaphilus Redtenbacher

This genus is characterised by its lateral margin of prothorax with a few denticles and which bear posteriorly directed setae, and only tarsal segment 3 lobed below. In the present study A. andrewesi Grouvelle is synonymised with A. serricollis Reitter.

12. Genus Psammoecus Latreille

This genus is easily recognised by its antennal club indistinguishable, with distinct fronto-clypeal suture and securiform maxillary and labial palpi. In the present study 15 species are dealt with, of which 5 species are new, P. bellus Grouvelle is synonymised with P. nitidus Grouvelle, and P. simoni Grouvelle and P. delicatus Grouvelle are recorded for the first time from India.

13. Genus Cryptamorpha Wollaston

This genus can be characterised by and distinguished from Psammoecus by its elytra with distinct scutellary striole, apical segment of maxillary and labial palpi elongated and rather fusiform, and tarsal segment 3 bilobed. In the present study 7 species are dealt with, of which 4 are new to science.

In the portion of larval taxonomy 8 larvae are dealt with, of which Silvanoprus angusticollis (Reitter), Protosilvanus lateritius (Reitter), Cathartus sp., Airaphilus serricollis Reitter, Psammoecus bipunctatus (F.) and Cryptamorpha brevicornis (White) are described for the first time in this study.

Finally, the generic relationship has been derived by weighting similarity and dissimilarity which is represented in tabular form.