MATERIALS AND METHODS

MATERIALS

This study is based on the material comprising 2411 adults and 507 larvae. Materials for the present study are provided chiefly by the collection of Zoological Survey of India, Forest Research Institute, Dehra Dun and Coimbatore Agricultural College. A large number of collections from different European Museums and Institutions are also studied in the present work namely, British Museum (Nat.Hist.), London, U.K.; Muséum d' histoire Naturelle, Paris, France; Muséum d' histoire Naturelle, Genève, Switzerland; Naturhistorisches Museum, Basel, Switzerland; Termeszettudomanyi Museum, Budapest, Hungary; Deutsches Entomologisches Institut, Eberswalde, E. Germany; Museo Civico di Storia Naturale, Venezia, Italy; and Pest Infestation Control Laboratory, Slough, Bucks, U.K. Moreover, the author has got the opportunity to study the reference collection of Zoological Survey of India. Larvae studied for this work were mainly collected and reared by the author. Larvae of Ahasverus advena were obtained by donation from Dr. D.G.H. Halstead.

METHODS

Collecting techniques - Many species living under bark are collected by sifting the bark with the help of a chopper. Adults and larvae are picked up by a wet sable hair brush and collected in tube filled with 70% alcohol. A large number of species occur

in haystack and in leaf garbage. The hays or vegetable debris adhering to the ground are pulled off from underside and are shaked several times on a tray, beetles and larvae are then collected from the tray similarly by a brush in tube filled with 70% alcohol. Silvanids that live in flower are collected by gently beating the flower on a tray or by sweeping with a butterfly net. The adults and larvae of stored grain silvanid pests are collected by careful examination of infected grains and seeds, and kept them in 70% alcohol.

Slide preparation - Mounted dry specimen is relaxed by putting it in water for about half an hour. The relaxed specimen is transferred on a glass slide with a drop of water and separated from the mounting board with the help of needles. The elytra and wings are dissected out under a dissecting microscope. The specimen is then boiled in 10% KOH Soln. in a hard glass test tube for about 10-15 minutes until the specimen appears clear or semitransparent. The specimen is then transferred to distilled water for 5-10 minutes for washing. The washed specimen is passed on to absolute alcohol through 30%, 50%, 70% and 90% grades of alcohol and for atleast 5 minutes in each grade. The detached elytra and wings are similarly dehydrated as mentioned above. All the parts are kept in absolute alcohol for about 10-15 minutes for complete dehydration and then transferred to clove oil. The specimen and

its parts are then placed on a clear glass slide with a drop of clove oil and finally dissected under a stereoscopic binocular microscope. The dissected parts are mounted in Canada balsam by cover slip.

Preserved larva is boiled in 10% KOH Soln. for 10 minutes to dissolve the muscles and then washed in distilled water. The larva is then passed on to clove oil through different grades of alcohol as mentioned above. Alcoholic Borax Carmine Soln. is sometimes used after 70% alcohol for staining the specimen. The larva is dissected on a glass slide under a binocular microscope, and the dissected mouthparts, head and rest of the body is mounted in Canada balsam.

Illustration - All the illustrations are made with the aid of a squared eye-piece. Dorsal and ventral figures of the whole specimen are drawn under stereoscopic binocular microscope and figures of the dissected parts under monocular microscope.