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COLEOPTERA.

CHRYSOMELIDÆ

(HISPINÆ AND CASSIDINÆ).

BY

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PREFACE.

In preparing this volume I have had the great advantage of having continual access to the rich collections contained in the British Museum (Natural History), and I wish to express my obligations to Dr. C. J. Gahan, the Keeper of the Entomological Collections, for kindly affording me facilities for working in his department. Although the European War (1914–1919) prevented my communicating with the continental museums, I have, through the kindness of Dr. R. Gestro, of the Genoa Museum, examined several of his types, for which I take this opportunity of thanking him. I have also examined most of Weise's and Spaeth's types or cotypes in the possession of Mr. H. E. Andrewes, who with his usual courtesy placed the whole of his valuable collections at my disposal. He has also very kindly supplied me with much useful faunistic information regarding the species, which has greatly facilitated my work. I wish to place on record my sincere thanks to him.

While the work was in progress I have received much interesting material from several sources in India. Dr. F H. Gravely, of the Indian Museum, sent me the whole of the museum collections bearing upon my work. From the Coimbatore Museum Mr. T. V Ramakrishna Ayyar sent me a small collection. Professor H. M. Lefroy was good

enough to procure for me some specimens from the Pusa collections. Through Mr. H. E. Andrewes I obtained a small but interesting collection from Mr. E. A. D'Abreu, of the Nagpur Museum. Mr. G. C. Champion has been kind enough to let me examine from time to time all the Hispids and Cassids collected by his son Mr. H. G. Champion in the Naini Tal district and other localities. To each these gentlemen I am under a great obligation.

My work in the British Museum has naturally brought me into contact with the other Coleopterists working there, and to Mr. G. J. Arrow and Mr. K. G. Blair, with whom I have discussed many points, I am much obliged for their courtesy.

To the University of Calcutta and its late Vice-Chancellor, the Hon'ble Justice Sir Asutosh Mukhopādhyāya, and to Professor J. Stanley Gardiner and Dr. Hugh Scott, of the Cambridge University, I owe a debt of gratitude for much encouragement.

I am deeply indebted to Dr. G. A. K. Marshall for his criticisms and suggestions. The great care with which he has read the proof-sheets has saved me from several errors.

I have to thank the Council of the Zoological Society and the Editors of the Annals and Magazine of Natural History for the loan of several illustrations. The drawings have been made under my close supervision by Mr. A. J. E. Terzi and Miss O. F. Tassart. The former has done six, which are marked with his name, the rest are by the latter, who has shown great aptitude for accurately delineating insect structures. To these artists my thanks are due.

S. MAULIK.

12th May, 1919.

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Order COLEOPTERA.

Family CHRYSOMELIDÆ.

Subfamily HISPINÆ.

Historical.

THE name *Hispa*, from a Greek word meaning rough, was first used by Linnæus in 1767 (Systema Naturæ, ed. 12) for two small spiny beetles which he called *atra* and *testacea*. These are generally found along the coasts of the Mediterranean. In 1775 Fabricius founded *Alurnus*, a South American genus of very large beetles, and recognised its relationship to *Hispa*, thus laying the foundation of this group. Then many genera were gradually described as follows: *Chalepus*, Thunberg 1805, *Cryptonychus*, Gyllenhal 1817, *Oxycephala*, Guérin 1830, *Arescus*, Perty 1832, *Platypria*, Guérin 1840, *Estigmena*, Hope 1840, *Cephalolia*, Chevrolat 1843, *Cœlœnomenodera* and *Botryonopa*, Blanchard 1845, *Oncocephala* and *Anisodera*, Chevrolat 1847, *Promecotheca*, Blanchard 1853, and *Octocladiscus*, Thomson 1856.

In 1858 Baly published his Catalogue of the HISPINÆ of the British Museum. This was the first monographic work on this group, in which twenty-five new genera were added by the author. Baly's work increased and systematised our knowledge of HISPINÆ considerably. Then followed again descriptions of several genera: *Aproida*, Pascoe 1863, *Hispoleptis*, *Acanthodes*, *Metaxycera*, *Charistena*, *Stethispa*, *Microrrhopala* and *Uroplata*, Baly 1864, *Octoloma*, Suffrian 1868, and *Aspidispa* and *Chœridiona*, Baly 1869. In 1875 Chapuis reviewed the whole group in Lacordaire's 'Genera des Coléoptères,' Vol. xi. Here he rearranged the genera and erected one or two new ones, among which is *Prionispa*, found within our faunistic limits. A contribution to our knowledge of the Hispid fauna of Central America was made by Baly and Champion (Biologia Centrali-Americana, Coleoptera, Vol. vi., part 2, 1885–1894). Then followed many authors, viz., Péringuey, Kraatz, Horn, Fairmaire, Sharp, Kolbe, Gestro, and Weise. Gestro and Weise have contributed most towards our knowledge of the HISPINÆ of India, Burma, Ceylon, the Indo-Chinese and the Indo-Malay regions. The former has published most of his work in the Ann. Mus. Civ. Genova, and the latter in Deut. Ent. Zeits., Berlin.

The HISPINÆ together with the CASSIDINÆ form a group of the large family CHRYSOMELIDÆ, which has been called Cryptostomes owing to the fact that their mouth-parts are as a rule placed on the underside of the head and thus ordinarily hidden from view. This character is more marked in the CASSIDINÆ than in the HISPINÆ and, coupled with the fact that the antennæ are inserted very close to each other between the eyes, distinguishes these two subfamilies from all other CHRYSOMELIDÆ. The latter family is divided into five divisions, namely, Eupodes, Camptosomes, Cyclica, Trichostomes and Cryptostomes. Their sub-division into subfamilies is shown below:

EUPODES	1. Sagrinæ.
	2. Donaciinæ.
	3. Orsdacninæ.
	4. Criocerinæ.
CAMPTOSOMES	5. Megascelinæ.
	6. Megalopodinæ.
	7. Clytrinæ.
	8. Cryptocephalinæ.
	9. Chlamydinæ.
CYCLICA.	10. Lamprosominæ.
	11. Eumolpinæ.
	12. Chrysomelinæ.
TRICHOSTOMES	13. Galerucinæ.
	14. Halticinæ.
CRYPTOSTOMES	15. Hispinæ.
	16. Cassidinæ.

It will be seen from the above that the CHRYSOMELIDÆ have been divided into sixteen subfamilies, two of which, namely, the MEGASCELINÆ and MEGALOPODINÆ, are not known to occur within our faunistic limits. The first eleven subfamilies have already been dealt with by the late Mr. Martin Jacoby in this Series (Coleoptera, 1908). The last two subfamilies form the subject of the present volume.

External Structure.

The species of HISPINÆ are as a rule elongate-oblong insects, a large majority of which vary in length between three to seven millimetres. Within our faunistic limits *Botryonopa*, *Macrispa*, *Anisodera* and one or two allied genera, contain the largest species, which sometimes attain to twenty-five millimetres in length. The structure of the upper surface of the beetles of this subfamily is of three kinds, namely, (1) quite smooth and plain, (2) rough or tuberculate, and (3) covered with long, well-developed and pointed spines. The spiny character of the prothorax and the elytra, although found occasionally in several families, namely, TENEBRIONIDÆ, ENDOMYCHIDÆ, CURCULIONIDÆ, and CERAMBYCIDÆ, belongs par excellence to the HISPINÆ.

The body of a Hispid is divisible into three distinct regions, viz., the head, the thorax, and the abdomen. The head carries the organs of sense and the mouth-parts; the thorax bears those of locomotion, the wings and the legs; the abdomen is composed of several similar segments.

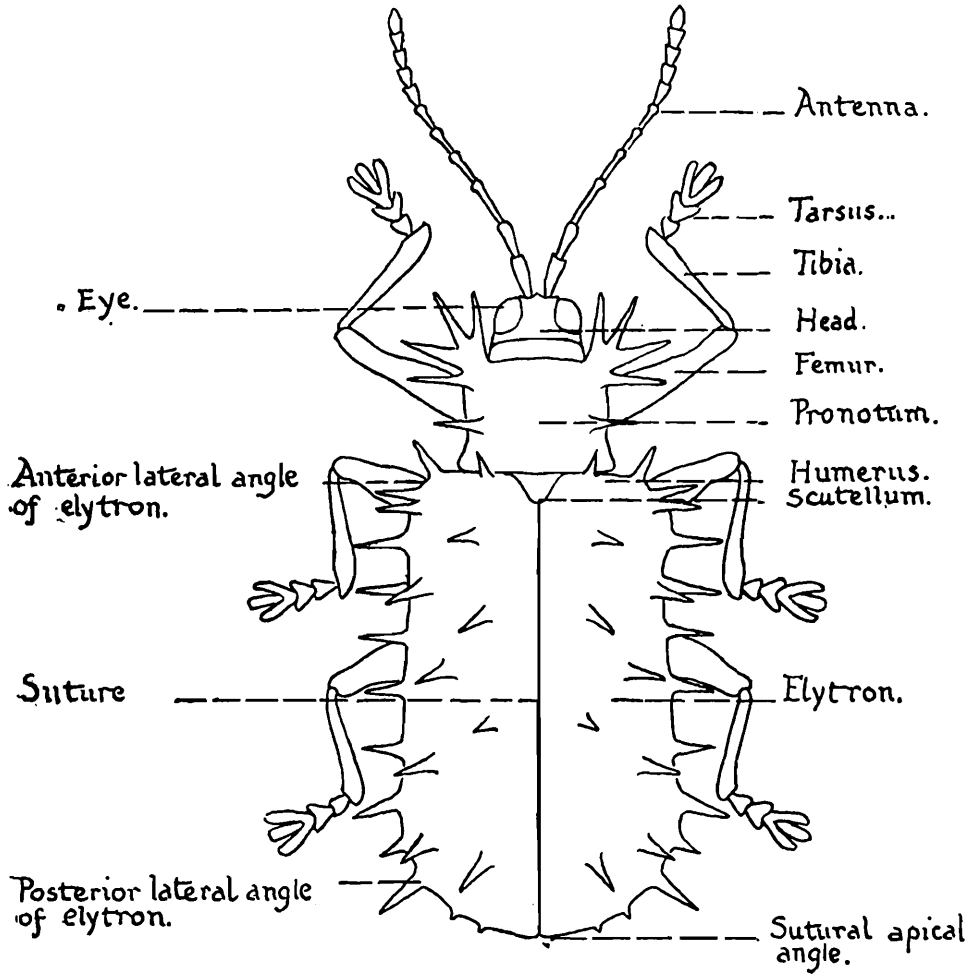
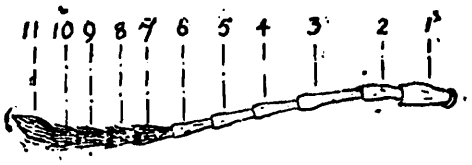
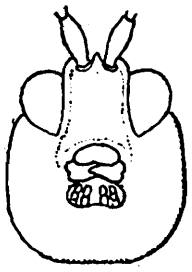


Fig. 1.—Upper side of *Hispa armigera*, Oliv.

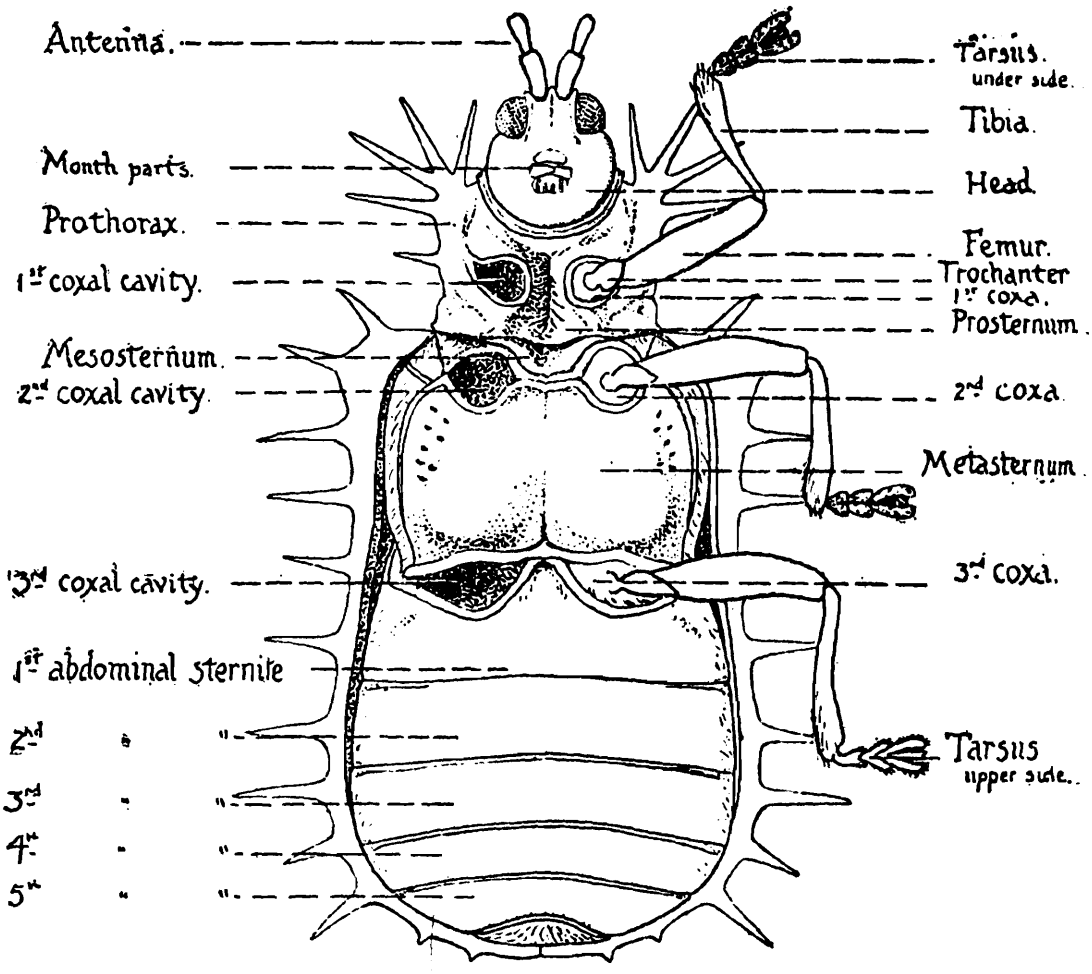
Head.—The eyes are generally convex, large and oval in form. They are situated on each side of the head leaving a space between them. In the genus *Amblispa* the eyes have become very small and are not convex. The interocular space is generally narrow and varies very little in width; it may be smooth, rugose or punctate. In many cases there is a median longitudinal sulcus. Between the antennæ the surface is generally elevated into a ridge, which is in a line with the median sulcus. In the genus *Oncocephala* the interocular space is very strongly produced. *Antennæ*: In all the genera the antennæ are eleven-jointed, except in *Platypria*, in which they are only nine-jointed, the last apical joint being formed by the fusion of three joints. Sometimes the fusion is not perfect so that the joints are more or less distinguishable. The antenna of a Hispid of our regions

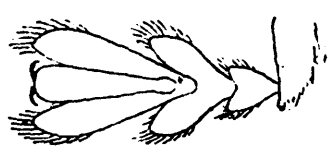


Antenna.



Head.





Tarsus.

Fig. 2.—Underside of *Hispa armigera*, Oliv.

is almost always divisible into two well-defined parts, the basal five or six joints, which are generally less hairy and smoother, and the apical six or five joints, which are more hairy and in many cases dilated. The smooth basal joints are often punctate, the punctures sometimes being elongate. The first joint is always long and thick, being in some cases of a different structure from the rest of the joints; it is often club-shaped, with its base narrower than its apex. *Mouth-parts*: The *mandibles* or upper jaws are distinct and prominent. Forming the front of the mouth

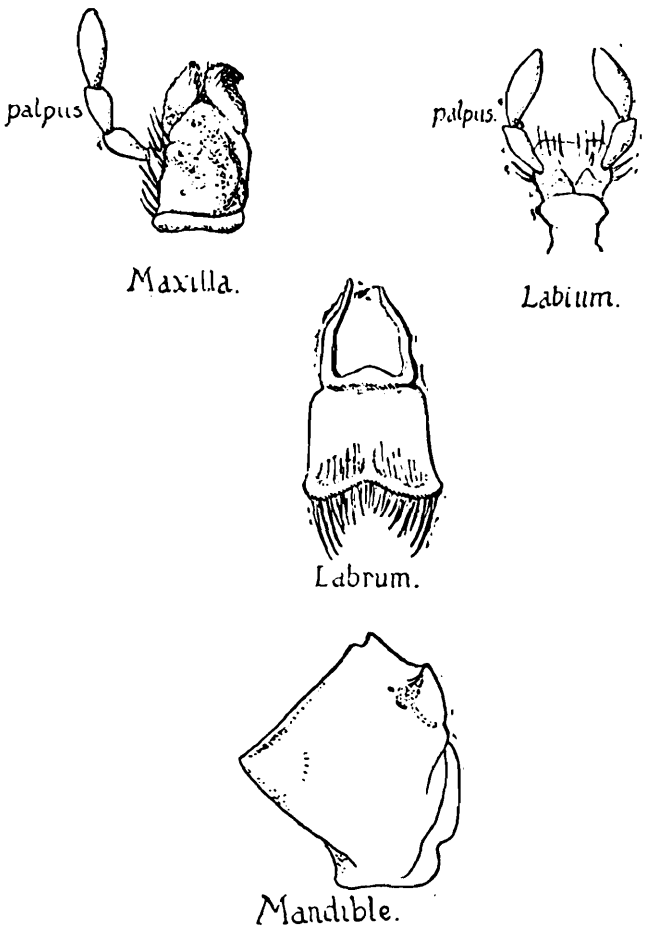


Fig. 3.—Mouth-parts of *Anisoderopsis excavata*, Baly.

and covering the base of the mandibles is the upper lip or labrum, on the inner side of which there is usually a structure, the epipharynx, which contains the organs of taste. The labrum is strongly chitinous in Hispids, being generally broader than long. Its front edge is sometimes emarginate and sometimes straight; it may be smooth or set with hairs. Below the mandibles we have a second pair of jaws or *maxillæ*. These are made up of a number of more or less well-marked pieces. Attached to each maxilla is a four-jointed *palpus*, or feeler (in the figure the basal joint is not clearly visible), which often bears special sense-organs and is probably used by the insect to recognise the character of the food. In function the maxillæ are auxiliary to the mandibles,

which cut and tear the food, and deliver it in coarse shape to the maxillæ. These assort and break it up yet more to improve the mechanical condition and deliver it to the labium, or lower lip, which also takes part in mixing the food. The *labium* closes the mouth-opening beneath, forming its floor, on which there is another sensitive surface, the *hypopharynx*. The labium is less complex than the maxilla, but like it has a pair of palpi or feelers. Each palpus is three-jointed (in the figure the basal joint is not clearly shown); but in the genus *Chæridiona* the labial palpi are absent, and this unusual character distinguishes it from all the other genera. *Clypeus*: Between the roots of the antennæ and the front of the oral cavity is generally an interval, which is called the clypeus. The presence or absence of this structure has afforded a means of separating many genera. The clypeus is usually elongate (though occasionally very short) and more or less triangular in shape; it may be convex or depressed, hairy or hairless, punctate or smooth.

Thorax.—The thorax, or middle region of the body, is of three parts, the prothorax, mesothorax and metathorax; the upper surface of these is called the pro-, meso- and meta-notum, and the lower the pro-, meso- and meta-sternum, respectively. The prothorax is free and well-developed and the meso- and meta-thorax are united together and not movable one upon the other. The *pronotum* is more or less quadrate, and the anterior or posterior angles sometimes bear setæ, which afford characters of classificatory importance. The mesonotum and metanotum are entirely covered by the elytra, which are the modified anterior pair of wings common to all Coleoptera and are attached to the mesothorax. A little of the mesonotum is visible between the bases of the elytra and is called the *scutellum*, generally a triangular structure. The hind pair of wings is membranous, attached to the metathorax and invisible from the upper side, being concealed under the elytra. The metasternum is large and always more or less convex.

The legs are attached to the three divisions of the thorax, and are fitted into them by means of a ball-and-socket joint, giving a great range of motion. The ball portion is called the *coxa*, and the socket is the *coxal cavity*. Attached to the coxa is the *femur*, or thigh, usually the stoutest part of the leg. It is strengthened at the base by a small supplementary piece called the *trochanter*, which forms an intermediate segment between coxa and femur. At the end of the femur is attached the *tibia*. To it is joined the *tarsus*, or foot, which apparently has four segments, of which the third is lobed or deeply notched. This type of tarsus is peculiar to those beetles which are phytophagous or plant-feeders. The *claws* of the HISPINÆ present many characters of taxonomic value (fig. 4). As a rule they are of equal length and pointed. They may be fused together, forming only one pointed claw, as in the genus *Monochirus*, Chapuis. Sometimes this single claw is not pointed, that is to say, it is as broad at the apex as at the base,

as in the genus *Acmenychus*, Weise. In *Asamangulia*, Maulik, the claws are unequal.

Abdomen.—The abdomen contains five visible segments on the underside, which are called the ventral segments. At the posterior end is the anal orifice and ventral to it is situated in the male the copulatory armature, a strongly chitinous structure called the *œdeagus*, which in repose lies inside the body. This structure has furnished in many groups of the Coleoptera useful characters for classification. In the Hispids it does not vary sufficiently to afford any important taxonomic characters.



Fig. 4.—Tarsal claws of:—(1) *Monochirus*; (2) *Acmenychus*; (3) *Asamangulia*.

Spines.—Morphologically the spines, bristles, setæ, etc., in insects may be of two kinds, namely (1) those which are processes of the cuticle originating from certain of the hypodermal cells, and (2) those which are glandular, being hollow setæ from which exude droplets of a clear watery or plasma-like sticky fluid, which is often poisonous. In the HISPINÆ the spines belong to the former class. Although the possession of these spines gives the insect a formidable appearance, there is no case on record in which they have been found to be poisonous or harmful to man in any way. The spines are of various shapes and sizes; they may be short and stumpy, or tuberculate, broad at the base and bluntly conical; on the other hand they may be long and pointed, the length of a lateral spine on the elytra being sometimes equal to if not greater than the length of the insect. Usually they are found on the surface and margins of the elytra, as well as on the sides and the front margin of the pronotum. They may also occur on the basal joints of the antennæ. The prothoracic and antennal spines are of taxonomic value, several genera having been founded on characters derived from them. Although the spines are fairly constant in number and disposition, sudden abnormalities and aberrations are often met with. Hence an element of difficulty in identification is introduced. An individual with abnormal spines may be incorrectly identified by the inexperienced.

Stridulating Organs.

The following is quoted from Dr. C. J. Gahan's paper on the stridulating organs in Coleoptera (Trans. Ent. Soc. London, 1900, p. 436). In the HISPINÆ the stridulating organs have as a rule the same characters in both sexes, the only exception so far met with occurring in the genus *Spilispa*, Chapuis. This genus contains only one species, *S. imperialis*, Baly, which is found in Batchian, Celebes, etc. It is closely allied to *Callispa*, which occurs within our faunistic limits.

"In *S. imperialis*, Baly, there is no true stridulating organ in the female, whereas in the male the stridulating area on the crown of the head is well-defined, though somewhat exceptional in structure, the series of ridges of which it is formed being slightly arcuate, less closely approximated than usual, and marked with short longitudinal furrows. The male of this species is further distinguished by the presence of a small triangular flap, thin and semi-membranous, projecting from the front margin of the pronotum. What part this flap takes in stridulation does not seem clear; it can scarcely act as a scraper, an inwardly projecting rim at its base where it joins the pronotum appearing to serve for that purpose. It may possibly be set in vibration, and serve to augment or modulate the sound produced by the scraping of the file on the head. A somewhat similar but less conspicuous modification of the anterior edge of the pronotum occurs in both sexes of *Estigmena* and other genera of HISPIDÆ. The stridulating area in *Stigmena chinensis* is divided into two parts by a short depressed interval, the anterior being much more finely striated than the posterior part, thus by its structure seeming capable of producing a very much higher note when rubbed by the edge of the pronotum. In *Hispopria foveicollis*, Baly, the stridulating area is still more complex, consisting of three parts; the part in front, forming the apex of a triangular area, is very finely striated, and is followed behind without any break by an area in which the striæ are much coarser and less approximate to one another; this area is succeeded by a pit-like depression, behind which there is a short space presenting a fairly regular transverse striation, somewhat intermediate in character between the other two. Equally complex is the condition existing in *Anisodera scutellata*, Baly, the striated area on the head being similar to that of *Hispopria*, with this difference only, that the three parts of the area are divided from one another by shallow transverse depressions.

"From the structure of their stridulating apparatus it is to be inferred that these beetles can and do produce sounds of at least two different degrees of pitch (and probably three), one being about an octave higher than the other; while further the possibility has to be admitted that, by the requisite movement of the head, the beetles might be able to vary the order or succession of the notes in such a way as to give rise to several simple musical airs.

"Unfortunately no observations have yet been recorded in reference to the nature of the sounds made by the living insects; and although it is very unlikely that such observations will prove the sounds to be so varied as the theoretical possibilities of the case would seem to allow, they will probably show them to be a good deal removed from the ordinary monotonous squeak produced by the majority of stridulating Coleoptera. In addition to the genera mentioned above, stridulating areas on the upper side of the head are found to be present in species belonging to the following genera :—*Wallacea*, *Botryonopa*, *Oxycephala*, *Cephalodonta*, *Prosipodonta*, and *Hispa*."

Oxycephala, *Cephalodonta* and *Prosipodonta* do not occur within our faunistic limits.

Carriers of Mites.

In several species of *Anisodera*, *Callispa* and other genera I have noticed a great number of Tyroglyphid mites congregated in the hairs on the underside of the prothorax. It is known that Tyroglyphid mites get carried in this way by insects, but I have found no record of insects of this group serving as carriers. I have observed this phenomenon also in the CASSIDINÆ. I am indebted to Mr. S. Hirst, of the British Museum (Natural History), for kindly identifying these mites for me.

Mimicry.

Insects belonging to several families of the Coleoptera bear strong superficial resemblance to some species of the HISPINÆ. The resemblance consists either in the coloration or the possession of spines or both. Such resemblance of insects of quite different families leads one to assume that it is a phenomenon of mimicry. It may be suggested that other insects mimic spiny HISPINÆ because of the possession of spines which, although not poisonous, offer mechanical hindrance to the enemies that attempt to eat them. On the other hand, insects have been found to mimic non-spiny HISPINÆ. In one case the explanation was interesting. Fea, the Italian explorer, observed that the Hispid beetle covered itself with a kind of secretion which protected it from its enemies. Although in all cases it has not been established by direct observation in nature that these superficial similarities are phenomena of mimicry, it seems justifiable to infer that they are. The following are the known cases of mimics of HISPINÆ.

Strongylium rufipenne, Koll. (TENEBRIONIDÆ) and *Anisoderopsis excavata*, Baly (HISPINÆ): Both have dark red-brown elytra and a black pronotum, and are generally of the same form and size. They both occur in North India.

Estigmenida variabilis, Gahan (CERAMBYCIDÆ), *Estigmena chinensis*, Hope (HISPINÆ) and *Anisoderopsis cylindrica*, Hope (HISPINÆ): The Longicorn and one of the Hispid beetles were

found together by Fea in the Karen Hills, Burma. The Hispid was a small form, entirely brown in colour, and was identified as *Estigmena chinensis* by Dr. R. Gestro. *E. chinensis* varies a good deal in coloration and size, the small ones looking very much like *Anisoderopsis cylindrica*, Hope. It is with regard to this Hispid that Fea made the observation about its coating itself with a kind of secretion. It is interesting to note that in the Longicorn beetle the apical joints of the antennæ are considerably finer than the others, thus rendering this portion inconspicuous, so that the antennæ appear short and robust as in the Hispid.

Plaxomicus hispoides, Auriv. (CERAMBYCIDÆ), *Lema monstrosa*, Baly (CHRYSOMELIDÆ), *Dactylispa cladophora*, Guér. (HISPINÆ) and *D. spinosa*, Weber (HISPINÆ): All these insects have the front part red-brown and the posterior part blue-black and are spiny. They occur in the Malay Peninsula, Java and Borneo. The Longicorn has tufts of hair resembling spines, but no true spines.

Erythroplatys corallifer, White (CERAMBYCIDÆ), *Epiplecta maculata*, Mäkl. (TENEBRIONIDÆ) and *Cnephalodonta spinipes*, F. (HISPINÆ): The Longicorn and Tenebrionid beetles resemble the Hispid in markings. They all have a red-brown head and thorax and a pattern of spots of the same colour on the black elytra. They occur in South America.

Many species of the family CURCULIONIDÆ, viz., *Apoderus echinatus*, Gyll., *A. bihumeratus*, Jekel, etc., have spiny elytra and have a general resemblance to Hispid beetles. Others, like *A. flaviceps*, Desbr., present a colour resemblance, the anterior part and the legs being yellow and the elytra blue-black. Some African spiny species of *Apoderus* similarly resemble African HISPINÆ.

Economic Importance.

The Cryptostomes are important from the agriculturist's point of view. They are all plant-feeders, and therefore must be looked on as potential enemies. But when a Hispid does become a pest it is a very dangerous one, because of the habits of the larvæ, which live inside the tissues of leaves during the whole of their development. Owing to this circumstance the application of stomach poisons is rendered useless. In some instances the larvæ attack the young shoots, which soon become brown and fall off. The following is a list of all the HISPINÆ known to attack cultivated crops :—

Hispa armigera, Oliv. India. Rice-plant.
Hispa striaticollis, F. East Africa. Maize.
Phidodonta modesta, Weise. India. Sugar-cane.
Callispa kilimana, Kolbe. East Africa. Maize.
Estigmena chinensis, Baly. India. Bamboo shoots.
Leptispa pygmæa, Baly. India. Rice-plant.

Wallacea dactyliferæ, Maulik, sp. n. India. Date-palm.
Platypria hystrix, F. India. Agathi.
Platypria andrewesi, Weise. Ceylon. Erythrina.
Monochirus callicanthus, Bates. Formosa. Rice-plant.
Promecotheca cumingi, Baly. Philippine Is. Young shoots of coconut.
Promecotheca reichei, Baly. Samoa. Coconut.
Promecotheca opacicollis, Gestro. New Hebrides. Coconut.
Promecotheca cœruleipennis, Blanch. Fiji. Coconut.
Promecotheca antiqua, Weise. New Guinea and Solomon Is. Coconut.
Bronthispa froggatti, Sharp. Solomon Is. Coconut.
Asamangulia wakkeri, Zehnt. Java. Sugar-cane.

Larvæ and Life-history Notes.

Observations on the life-histories of HISPINÆ are recorded in the following publications:—

1835. Harris, Boston Journ. Nat. Hist. i, pp. 141–147.
1840. Newman, The Entomologist, pp. 73–76, fig.
1855. Perris, Mém. Soc. Liège, v. p. 260.
1887. Goeldi, Zool. Jahrb. ii, pp. 384–387.
1902. Brèthes, An. Mus. Buenos Aires, pp. 13–17.
1905. Bruch, Revista Mus. La Plata, xi, p. 321, t. 3, f. 1–10.
1905. Weise, Deut. Ent. Zeits. p. 301.
1905. Xambeu, Mém. Soc. Lyon. p. 100.
1906. Bruch, Revista Mus. La Plata, xii, p. 215, t. 3, f. 1–11.
1912. Van Deventer, Handboek Suikerriet-Cultur en de Reitsuiker Fabricage op Java, vol. ii.
1913. Jones, Philippine Agric. Review, vi, pp. 228–233, figs.
1914. Stebbing, 'Indian Forest Insects,' London, pp. 254–5.
1914. Froggatt, Bull. Ent. Research, v, pp. 149–152.

North America.

In 1835 Harris described the habits of the larvæ and pupæ of four American species, viz., *Anoplitis inæqualis*, Weber, *Hispa suturalis*, F., *Microrrhopala vittata*, F., and another which was not identified. This is the first notice of the immature forms of the HISPINÆ. He also found a hymenopterous insect (unidentified) parasitic on them.

The larvæ attributed to *Anoplitis inæqualis* were found mining in the leaves of the white oak. The head is strongly chitinised and brownish black in colour. The body has eleven segments, is broad near the head and gradually narrowed behind. The colour is yellowish white, except the greater part of the upper side of the first segment, a spot in the middle of the underside of the same, and the upper part of the tip of the last segment, which are dark brown or nearly black. The head is small in proportion to the size of the first segment, and partly drawn within it. The

mandibles are short, strong, somewhat triangular, and simple, or scarcely indented within. The abdominal segments are dilated at the sides, and terminated by small tubercles. Above these lateral projections is a series of seven smaller ones, each bearing a spiracle. The fourth and remaining segments, except the last, have both above and below a transverse callous spot, covered with minute projections like a rasp, which appears to be designed to aid the insect in its motions, it being able to move readily either backwards or forwards.

In the pupa the abdominal segments are tuberculated at the sides and are furnished both above and beneath, in the centre of each segment, with a transverse series of elevations, much larger and more prominent than those of the larva and tipped with short bristles. The sheaths of the wings and legs are folded on the breast, and those of the antennæ under the lateral margins of the first and second segments. When disturbed, the pupa moved about by means of the rasps upon its body.

In July, 1829, Harris found some larvæ within the leaves of *Robinia pseudacacia*, which proved to be those of *Hispa suturalis*, F. In form they were more elongated and not so much depressed as those of the *Anoplitis*. The body was not so broad anteriorly. The lateral tubercles were more acuminated and directed backwards, so as to give the sides of the body a serrated appearance. In other respects they agreed with the previously described species. The pupæ were exceedingly active, and moved backwards and forwards by an upward and downward action of the abdominal segments.

In July, 1833, Harris found full-fed larvæ of *Microrrhopala vittata*, F., in the leaves of *Solidago lævigata*, a plant which abounds on the margins of salt marshes. The larva is more elongated than in the two preceding species, being more acuminated anteriorly and posteriorly. The lateral tubercles are much more prominent, tooth-like, pointing backwards, and tipped with small acuminated black points on the sides of each segment, except the first, third and last. There were tubercular rasps on the body as in other species. The pupæ bore a general resemblance to those of *Hispa suturalis*.

Central America.

G. C. Champion has observed that species of *Cephalolia* are found in the rolled-up unopened leaves of Musaceæ (*Heliconia* spp.), the inner surfaces being eaten through to a considerable extent. H. W. Bates also found numerous species of *Cephalolia* hidden at the bases of bamboo canes, lying between the leaves and canes.

South America.

In 1902 Brèthes made some observations on *Uroplata costipennis*, which is very common in Buenos Aires during the summer, being

found on *Sida rhombifolia*, Z. The eggs are deposited on the underside of the leaves, generally in groups of four or five placed side by side near a rib, and are cemented by an adhesive substance secreted by the insect. The egg measures about a millimetre in length and about one-third of a millimetre in width. The form of the larva is of the usual flattened type, fitted to live in the tissues of the leaf into which it eats its way.

In 1905 Bruch published a short note on *Chalepus medius*, Chap., which is found on *Robinia pseudacacia*. The larva in form and habits is of the usual Hispid type, namely, a flattish insect living in the tissues of the leaf. In the following year another paper from the same author contains an account of the life-history of *Amplipalpa negligens*, Weise, which is found on *Panicum grumosum*, Nees. The American group AMPLIPALPINI has a doubtful position in the HISPINÆ because of the behaviour of the immature stages. The larva of *Amplipalpa negligens* has a habit specially characteristic of the CASSIDINÆ, that is to say, it builds a structure of excrementitious matter and cast skins at the posterior end of the body which it uses as a defence when disturbed. Within our faunistic limits no genus of HISPINÆ has yet been found having similar larval habits, but I suspect that the group CALLISPINI may contain some species showing this peculiarity.

Europe.

In July, 1853, Perris discovered the larvæ of *Hispa testacea*, L., on *Cistus salvifolius*, living inside the leaves. He gives a detailed description of the larva and drawings of the details. He also criticises Harris's observations.

India.

Estigmena chinensis, Hope, has been found on three trees, but is chiefly destructive to the young shoots of a bamboo (*Dendrocalamus strictus*) in the Anaimalai Hills, South Coimbatore. It has also been found on a species of *Dendrocalamus* in Melyhat Forest, Berar. In Kadin Bilin Forest, Tharrawaddy, Burma, it has been taken on another kind of bamboo, *Cephalostachyum pergracile*. Apparently only one egg is laid on the stem between two nodes and near the upper one. The larva on hatching bores into and tunnels down through the interior of the internode until it reaches the lower node, by which time it is full-fed and pupates. The larva eats away the whole of the interior of the internode. The imago emerges through a hole in the stem which would appear to have been eaten out, or partly eaten out, by the larva. Towards the end of January the beetles were ready to emerge. Only one beetle has been found in any internode. These observations were made by Stebbing in Burma. The beetles appear in November in Berar and in July in Coimbatore. In the former place they

have been found to do a great deal of damage to the young succulent rolled-up leaves of the new shoots, eating them away and thus arresting the growth or killing the stems.

Leptispa pygmæa, Baly, has been found in Ceylon, Malabar, Mysore, Cochin, South Kanara, Shoronore and Mahawanaad, in South India, and in Belgaum and Poona in Bombay. It attacks the rice-plant. It has also been found on sugar-cane. In Colombo Mr. George Lewis found this insect in great numbers. They were resting on the stems of a small grass just above water. It was observed that if immersed in water they remained quiescent in it. The insect has a coating of hair on the underside, a character that is generally found in aquatic insects. This adaptation to its environment gives it an advantage as a pest of a plant like paddy which grows in water. Fletcher ('Some South Indian Insects,' 1914, p. 314) has made the following observation about its habits : "The eggs are laid on paddy leaves and the grubs also feed on the upper surface of the leaves, the attacked leaves usually folding over so as to hide the enclosed grub. The grub, when full-fed, pupates on the leaf, the beetles emerging after about four days." It appears from these remarks that the insect passes its immature stages on the surface of the leaves and is not a leaf-miner. This very unusual habit has also been recorded by Froggatt (Bull. Ent. Research, v, 1914, p. 151) in the case of *Bronthispa froggatti*, Sharp, in the New Hebrides, the larvæ feeding with the adults on the opening leaf-buds of the coconut palm and being protected in the half-folded fronds.

Wallacea dactyliferæ, Maulik, sp. n., has been found on the tender shoots of the date-palm, in South India. Judging from the large series of adult beetles before me it can be stated that the insect occurs in large numbers. The label on one insect from Chingleput, Madras, contains the following remarks: "They attack the tender leaves of date-palm, the stems of which wither and die." The beetles were found in November. I believe the withering of the tender shoots is due rather to the operations of the larvæ than to the attack of the beetles. In Vamambady, South India, the beetle has been taken in June, also from the date-palm. Through the courtesy of Prof. H. M. Lefroy, I have had the opportunity of examining the larvæ of the three Indian HISPINÆ here described.

The larva is flattish, dirty white or slightly yellowish (specimen preserved in alcohol). It is apparently twelve-segmented, excluding the head segment. The head is transversely elliptical in shape and much narrower than the following segments; the mandibles are strongly chitinised, especially at their apices; the labrum is slightly emarginate in the middle. The antennæ are minute and apparently two-jointed, the basal joint being very broad and conical. The legs are two-jointed, ending in a single claw. The prothoracic and mesothoracic segments have each two lateral projections on each side. The metathorax and each of the

next eight segments bear a single rather longer projection on each side. The segments gradually become narrower towards the posterior end of the body. The last segment is broader than that of the other Indian larvæ here described.

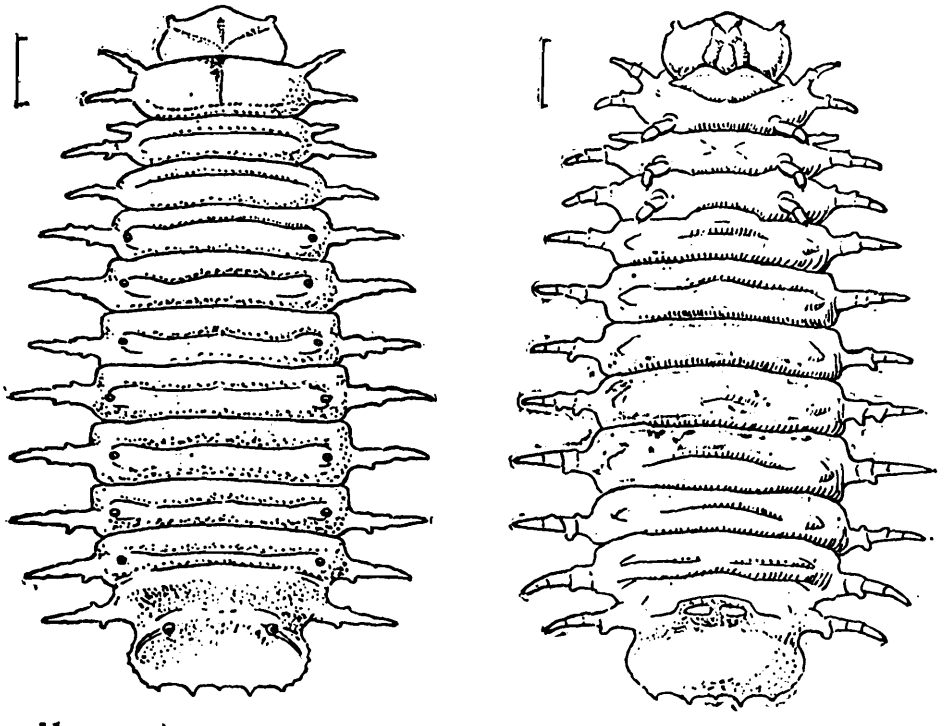


Fig. 5.—Larva of *Wallacea dactyliferæ*, Maulik, sp. n.

Lefroy has figured all the stages of *Phidodonta modesta*, Weise, in his 'Indian Insect Life,' p. 365, pl. xxiii. It is a minor pest of the sugar-cane. The beetle is found from April till November. The eggs are laid in leaves of the sugar-cane, in which the larva mines longitudinally, pupating in the mine. The beetle also eats the leaves.

Hispa armigera, Oliv., has been reported from all the rice-growing districts of India. Outside India it has also a wide distribution. There is nothing on record regarding its food-plants in other localities. The larva is more elongate than the other two figured here. The eggs are laid on leaves of paddy in which the grubs tunnel, producing discoloured patches and pupating in the leaf. The beetle occurs sporadically as a serious pest, often appearing in vast numbers during the rains, when the rice has just been planted out and is still young and tender, and feeding on the parenchyma of the leaves and stalks, leaving the fibre exposed, so as to give the plants a withered appearance. It has probably several broods a year. The effect of the pest would seem to be to stunt and weaken the plants and cause them to yield but a small crop. The rice is apparently in no case

completely destroyed, but the crop may be reduced by from 12 to 50 per cent. These notes are from *Indian Museum Notes*, which published various reports from correspondents from many districts in Bengal. The details of the life-history of the insect are not known.

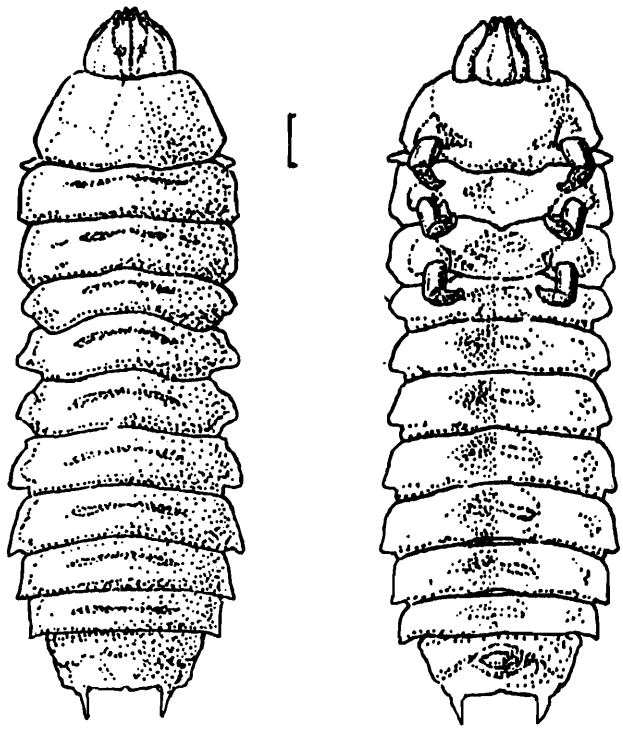


Fig. 6.—Larva of *Hispa armigera*, Oliv.

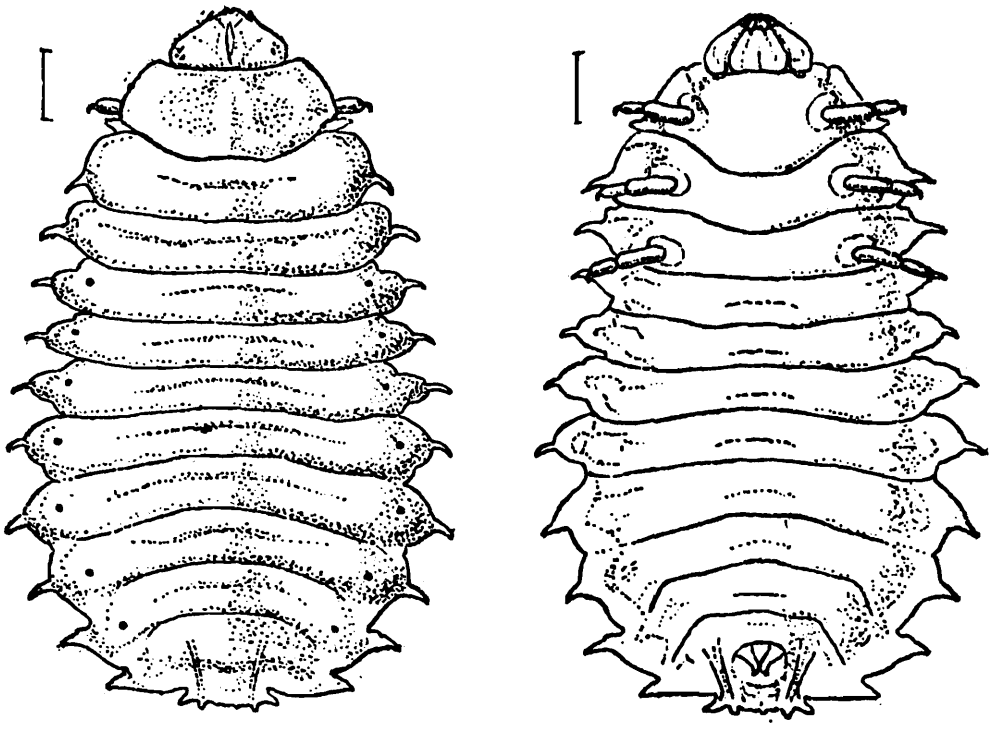


Fig. 7.—Larva of *Platypria andrewesi*, Weise.

Platypria andrewesi, Weise, is a minor pest of the ber-tree (*Zizyphus jujuba*). The eggs are laid in the tissues of the leaf. The larva mines into the leaves, though it does not remain in the mine, but moves about eating out a kind of pocket, and emerging to commence a fresh pocket. This observation was made by Lefroy ('Indian Insect Life,' p. 364). The larva is flat and yellowish white. The head is chitinous, much narrower than the next segment of the body, broader than long, the sides parallel and broadly rounded at the apex. The antennæ are very minute and apparently two-jointed. On each side near the rounded edge there is a group of three or four ocelli. The segments, excepting the prothorax, are produced laterally, and terminate in a small backwardly-curved process. The abdomen terminates in a flat chitinous plate with a lateral process, the anus being ventral. The larva pupates in a special pocket.

Formosa.

Monochirus callicanthus, Bates, is a serious pest of the rice-plant in Formosa, causing a loss of 20 to 40 per cent. of the crop annually. The imago hibernates from October to April in the soil among the roots of the grain or among the leaves of *Zizania latifolia* and begins to be active early in April. The female lays its eggs singly, usually near the tip of a leaf. The larva takes four to eight days to hatch out, and mines into the leaf, producing blotches; after about two weeks it pupates in the mine. The length of the pupal stage varies from four to seven days. The beetle also destroys the leaves, generally from the lower surface. There are five generations in a year.

Philippines.

Promecotheca cumingi, Baly, attacks the leaves of young coco-nut-palms. The eggs are deposited singly on the underside of the leaflets and generally on the lower leaves. The beetle eats a small hole through the lower epidermis of the leaf leaving the edges of the hole very rough. The egg is inserted in the hole and cemented in place with a yellowish glutinous secretion, which turns dark brown upon hardening and resembles dried leaf-tissue. During this process the abdomen of the insect is moved with a rotatory motion. After resting over the egg for a few seconds, the beetle moves away and begins feeding again. In several cases after the egg had been cemented in place the adult was observed to pat it with her front feet. The eggs are flat, semi-elliptical, brownish bodies. The outer surface or covering is very rough, and the eggs are very easily broken when this protective substance is removed. They are about 1·5 mm. in length, 1 mm. in width, and 0·3 mm. in thickness. The period of incubation of 286 eggs averaged 13–15 days, of which the maximum was fifteen and the minimum thirteen days. On hatching, the larva eats its way through the egg-wall and directly

into the tissue of the leaflet, where it spends its entire larval and pupal stages. It is a fleshy footless grub, and the average size is about 1–2 mm. in length when newly hatched; the head is the largest segment, being translucent shiny brown, and wedge-shaped with rounded sides; the mandibles are black and can be drawn under the labrum; two brownish lines form an x on the back of the head; two whitish lines extending under the head near the apex give it the appearance of an arrow-head, these markings being absent in later stages. In the older larvæ the head is slightly smaller than the following segment. The body is cream-coloured and semi-cylindrical, tapering from segment 1 to 11, the end segment being about one-half the size of segment 1, which is depressed anteriorly. Segments 1 to 11 are protruded into tubercles on both sides, which give rise to setæ of six hairs each. The average length of the full-grown larva is 9·54 mm. The average time required in the larval stage is thirty-two days. Apparently there are two moults only. After the larva is full-grown it retires to the centre of the chamber, where it pupates without forming any pupal cell. The pupa is orange-chrome or burnt-sienna and is covered with hairs; there are two rows of transverse black spines on each segment, the anterior of which consists of six spines. The beetles feed extensively upon the tissues between the veins of the leaflets; the injury has the appearance of a slight cut, but does not entirely penetrate the leaf. The injury done by the larva is greater than that of the adult, as a single larva will excavate a place in the leaf from 12 to 16 mm. long, and 1·5 to 3 mm. wide. The tissue affected soon dies and becomes brown, and in badly infested areas the trees soon have an unhealthy and half-dead appearance. The above observations were made by C. R. Jones.

Java.

W. Van Deventer has published an account, with a coloured plate, of *Hispella wakkeri*, Zehnt., a species that attacks sugar-cane in Java. I have had the opportunity of examining the beetle through the courtesy of Dr. G. A. K. Marshall. I find that the insect belongs to the genus *Asamangulia*, Maulik (Rec. Ind. Mus. xi, 1915, p. 378), as it has unequal claws, and cannot belong to the genus *Hispella*, to which the author referred it. The larva is of the usual type, having an elongate flat body, but no lateral projections. It mines in the leaves of sugar-cane.

Key to the Groups of Indian Hispinæ.

1.	Sides of the prothorax with spines. Body as a rule spiny, but sometimes tuberculate .	Group IV., p. 151.
1′	Sides of the prothorax without spines . . .	2.
	Elytra with a short row of punctures on each side of the scutellum (scutellar row of punctures)	3.
2′	Elytra without a scutellar row of punctures.	Group III., p. 104.

3.	The upper border of the circular cavity in which the mouth-parts are situated is in close proximity to the roots of the antennæ; the clypeus therefore entirely wanting or at most in the form of a small transverse streak . .	Group I., p. 19.
3′.	The upper border of the oral cavity is separated from the roots of the antennæ by a triangular, quadrate or straight clypeus.	4.
4.	Body parallel-sided	Leptispa, p. 75.
4′.	Body wedge-shaped, being broader posteriorly.	Group II., p. 82.

Group I.

Key to the Genera of Group I.

1.	Lateral angles of the prothorax without bristles.	2.
1′.	Lateral angles of the prothorax with bristles	3.
2.	Antennæ fairly robust and cylindrical; elytra flattened towards the apex, and projecting a little beyond the abdomen	Botryonopa, Bl., p. 20.
2′.	Antennæ more slender; elytra convex and projecting much beyond the abdomen	Macrispa, Baly, p. 23.
3.	Each of the anterior angles of the prothorax with a fine bristle ...	4.
3′.	Each of the posterior angles of the prothorax with a fine bristle	6.
4.	Anterior edge of the prothorax emarginate in the middle. ..	Estigmena, Hope, p. 26.
4′.	Anterior edge of the prothorax not emarginate in the middle. ..	5.
5.	Labrum short, on a lower plane than the clypeus, its transverse edge emarginate and covered with long and stiff hairs; upper side of the body shining; elytra without pronounced ribs	Anisoderopsis, Maulik, p. 36.
5′.	Labrum large, on the same plane as the clypeus, its transverse edge straight and sparsely covered with hairs; upper side of the body, as a rule, opaque or subnitid; elytra with pronounced costæ..	Anisodera, Chev., p. 30.
6.	Body flat; third joint of antennæ comparatively enormously long; claw joint of the tarsus projecting beyond the bilobed joint	Hispodonta, Baly, p. 42.
6′	Body moderately convex; third joint of antennæ not so long; claws concealed in the hairy border of the bilobed joint	7.
7.	Eyes prominent; upper surface of the prothorax with depressions	8.

7′ Eyes small and almost flat; upper surface of the prothorax without any depressions ..	AMBLISPA, Baly, p. 70.
8. Scutellum small, transverse, quadrate, its posterior border always rounded	CALLISPA, Baly, p. 43.
8′ Scutellum sharply triangular	MELISPA, Weise, p. 73.

Genus **BOTRYONOPA**, *Blanchard.*

Botryonopa, Blanchard, Hist. Nat. Ins. ii, 1845, p. 181; Baly, Cat. Hisp. 1858, p. 91, pl. ii, f. 6; Chapuis, Gen. Col. xi, 1875, p. 291.
Hispopria, Baly, Cat. Hisp. 1858, p. 94, pl. ii, f. 7; Chapuis, *op. cit.* p. 297.

GENOTYPE, *Botryonopa sanguinea*, Guér.

The insects are large and elongate, their colour being generally red and metallic blue. *Head* large, eyes oval, antennæ 11-jointed, moderately robust, cylindrical, apical joint pointed. It may be stated as a general rule that the first joint is always different in structure from the rest of the joints, it being the stoutest and more or less rounded at the sides; sometimes the five apical joints are different in structure from the second to sixth joints, which are slightly clavate at the apices and more shiny. The mouth-parts are placed in a more or less circular cavity, the upper border of which is so near the roots of the antennæ that the clypeus is generally absent; labrum transverse, truncate, and with long bristles; mandibles very large; maxillary palps robust, the first joint being short, second and third joints subacute and obconic, fourth oval and acuminate; labial palps subcompressed, the first joint being small, second obconic, third subovate. *Prothorax* quadrate, narrower at base than the elytra, the anterior border slightly produced and rounded, the lateral borders almost straight, the posterior border sinuate on each side, with the angles pointed and projecting. Scutellum oblong, rounded at the apex. *Elytra* elongate, subparallel-sided, moderately convex, rounded behind, punctate-striate. A short scutellar series of punctures is present. *Legs*: femora with an acute tooth on the inner border; claws strong and quite separate from each other.

Baly described a genus called *Hispopria*, distinguishing it from *Botryonopa* by (1) the more slender antennæ, (2) the presence of an acute tooth on the under surface of the femora. But these characters cannot distinguish one genus from the other because both possess an acute tooth on the underside of the femora; this tooth is generally the end of a ridge, which in some species is prominent. As regards the antennæ, varying degrees of slenderness can be found when we examine a large number of species. *Hispopria*, therefore, should be considered as a synonym of *Botryonopa*.

Range. India, Malay Peninsula, Java, Sumatra, Borneo and the Philippines.

Twenty-six species have been described under this genus of which only two occur within our area.

Key to the Species.

Elytra entirely red	*sanguinea*, Guér.
Elytra with the anterior part red and posterior half shining metallic blue	*sheppardi*, Baly.

1. Botryonopa sanguinea, *Guér.*

Botryonopa sanguinea, Guérin, Rev. Zool. 1840, p. 332; Baly, Cat. Hisp. 1858, p. 92; Gestro, Ann. Mus. Civ. Genova, 1885, p. 163.

Body elongate, parallel-sided; more or less shining; the antennæ, eyes, mandibles, legs and underside black; the head, prothorax, and

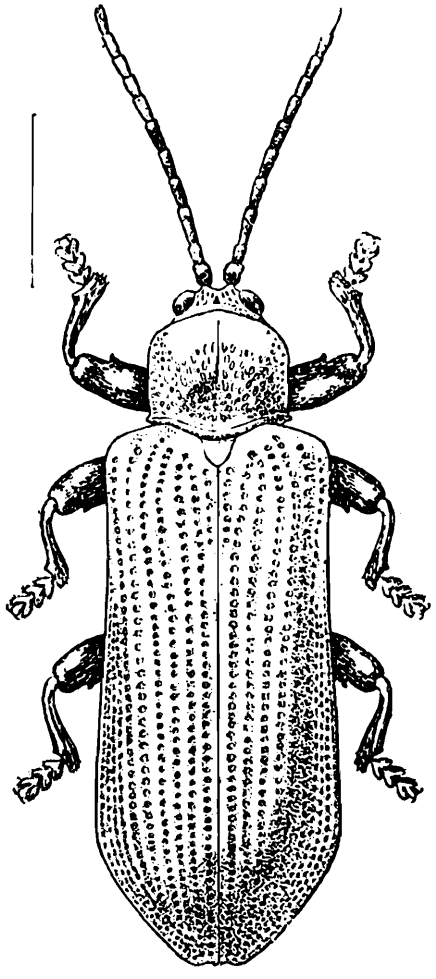


Fig. 8.—*Botryonopa sanguinea*, Guér.

elytra red; in some cases the blackness of the legs and underside is diluted with red.

Head depressed between the antennæ; the first joint of the antennæ is the stoutest, rounded on the inner side, slightly concave or almost straight on the outer side; second joint short, third joint the longest; first to sixth joints subnitid, sparsely covered with hairs and with elongate punctures; seventh to eleventh joints opaque, more hairy and more closely punctate; the sixth joint is sometimes intermediate in character. *Prothorax* quadrate, narrower than the elytra, the basal margin sinuate on each side, the anterior lateral angles rounded, the posterior ones acute, ending in a minute tooth, the sides straight. The disc is slightly convex; at the base anterior to the scutellum there is a shallow depression; the basal three-fourths of the surface is covered with elongate punctures which are sometimes confluent; there is a slight median groove, depressed in the middle and impunctate. *Elytra* parallel-sided for three-fourths of their length, with ten parallel rows of punctures and a short scutellar row; the fifth and sixth rows meet at the point where the elytra begin to slope down; the apical sutural angle ends in a minute tooth. *Underside* smooth and shining.

Length, 12–17 mm.; breadth, 4–6 mm.

N. India (*teste* Baly). Java.

Type not traced.

There are 18 specimens in the British Museum named by Baly.

2. Botryonopa sheppardi, *Baly*.

Botryonopa sheppardi, Baly, Cat. Hisp. 1858, p. 92, pl. vii, f. 4; Weise, Stett. Ent. Zeit. 1908, p. 214; Maulik, Rec. Ind. Mus. ix, 1913, p. 116, and xi, 1915, p. 368.

Body elongate and depressed; colour red and shining, the posterior half of the elytra shining metallic blue; the antennæ black, with the basal joint, or two or three basal joints, sometimes red.

Head punctate, grooved longitudinally, transversely depressed on the vertex. The antennæ with the basal joint convex on the inner side and straight on the outer side, second joint small, third the longest, first to sixth subnitid with elongate punctures, seventh to eleventh hairy and opaque, but shining at the base. *Prothorax* subquadrate, the apical margin slightly produced, the sides nearly parallel, narrowed in front, sinuate before the middle, and sinuate on each side at base, the posterior angle armed with an acute tooth, and the base narrowly margined. The surface subrugose, punctate, transversely impressed at base, excavated on either side near the middle; a longitudinal narrow central line on the disc in front and the anterior margin are impunctate. *Scutellum* smooth, impunctate, depressed in the middle. *Elytra* broadly elongate, the sides narrowly margined, parallel; the apex subacutely rounded, the sutural angle armed with a minute tooth. The surface is moderately convex, flattened along the

suture. Each elytron has ten parallel longitudinal rows of punctures and a short scutellar row; the interstices covered with finer punctures. *Underside* smooth and shiny.

Length, 15–17 mm.

SIKKIM. ASSAM: Sylhet; Sibsagar (*S. E. Peal*).

Type in the British Museum.

A small yellow variety has been recorded from Cachar, Assam, the specimen being in the Indian Museum, Calcutta.

Genus **MACRISPA**, *Baly*.

Macrispa, Baly, Cat. Hisp. 1858, p. 90, pl. ii, f. 5; Maulik, Rec. Ind. Mus. xi, 1915, p. 368.

GENOTYPE, *Macrispa saundersi*, Baly.

The insects are large and elongate, their colours being red, fulvous and black. Head large, with oval eyes. Antennæ 11-jointed, their length varying in the two sexes; the first joint differs in structure from the rest; the six or seven proximal joints and the five or four distal joints also show differences of structure. The mouth-parts are placed in a more or less circular cavity, the upper border of which is so near the roots of the

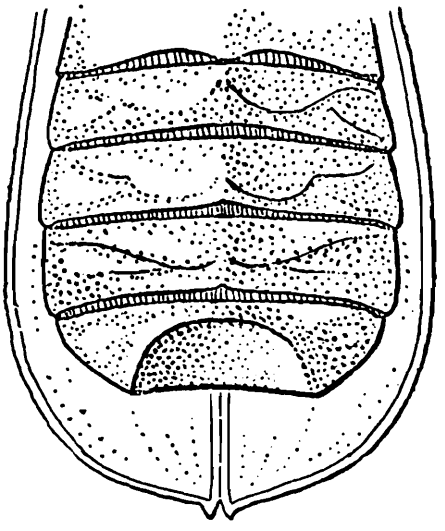


Fig. 9.—Underside of *Macrispa krishnalohita*, Maulik, ♀.

antennæ that the clypeus is absent. The labrum, maxillary and labial palpi, and other structures of the mouth are similar to those of *Botryonopa*. The prothorax is quadrate. The scutellum is more or less triangular, with the apex rounded. The elytra are ample, punctate-striate; a scutellar row is present. The underside of the fore femora has a ridge which ends in a blunt point, the mid and hind femora being sulcate on the underside. The secondary sexual character consists of a semilunate depression on the last abdominal sternite of the female.

Range. N.E. India, Assam.

Only two species have been described of the genus *Macrispa* which can be distinguished from *Botryonopa* by the following characters:—In the latter the elytra are regularly punctate-striate and do not project much beyond the abdomen, and the underside of the femora bears a tooth; whereas in *Macrispa* the elytra project much more beyond the abdomen, their sculpturing is not regular, some of the costæ breaking up confusedly into deep punctures, and the underside of the front femora bears a ridge, and that of the mid and hind femora a deep sulcus.

Key to the Species.

Size larger (25·5 mm.); apices of antennal joints clavate; thorax less constricted in front; elytra opaque, fulvous; lunate depression on last abdominal sternite (♀) broader .	*saundersi*, Baly.
Size smaller (22 mm.); apices of antennal joints not clavate; thorax suddenly constricted in front; elytra subnitid, rufous; ventral depression narrower . . .	*krishnalohita*, Maulik.

3. Macrispa saundersi, *Baly.*

Macrispa saundersi, Baly, Cat. Hisp. 1858, p. 91, pl. vii, f. 3; id., Cist. Ent. ii, 1879, p. 405; Gestro, Ann. Mus. Civ. Genova, 1906, p. 130; Maulik, Rec. Ind. Mus. xi, 1915, p. 369.

Body elongate; head, antennæ, prothorax, abdomen and legs shining black; elytra opaque, fulvous.

Head depressed between the bases of the antennæ, the vertex finely rugose. The basal joint of the antennæ robust, the second joint very short; third to sixth with elongate punctures, shining, clavate at the apices; third and fourth joints more elongate and slender than the rest; seventh to eleventh without elongate punctures, opaque and covered with a bloom. The labrum is entirely covered with fulvous hairs. *Prothorax* subquadrate, the sides slightly narrowed behind, their margin sinuate, slightly dilated, subreflexed. The surface is shining black, the anterior half of the disc smooth, impunctate, and impressed with a longitudinal groove, the posterior half being coarsely and deeply punctate, and the sides variolose-punctate; at the base in front is a transverse depression, the base itself being transversely strigose. *Scutellum* triangular, smooth, shining black, slightly depressed along the longitudinal middle line. *Elytra* broader than the prothorax, elongate, subparallel-sided in front, slightly dilated behind, extending considerably beyond the sides and apex of the abdomen, the apex rounded, the sutural angles armed with an acute tooth. The surface is coarsely and deeply punctate-striate near the suture, the interstices being costate, and the

rest of the surface confusedly but closely covered with deep punctures; on the outer disc are two indistinct costæ, the outer margin being narrowly reflexed. *Underside* shining black.

Length, 25·5 mm.

ASSAM.

Type in the British Museum.

4. **Macrispa krishnalohita**, *Maulik*.

Macrispa krishnalohita, Maulik, Rec. Ind. Mus. xi, 1915, p. 369.

Elongate; head, antennæ, prothorax, abdomen and legs shining black; elytra rufous, subnitid.

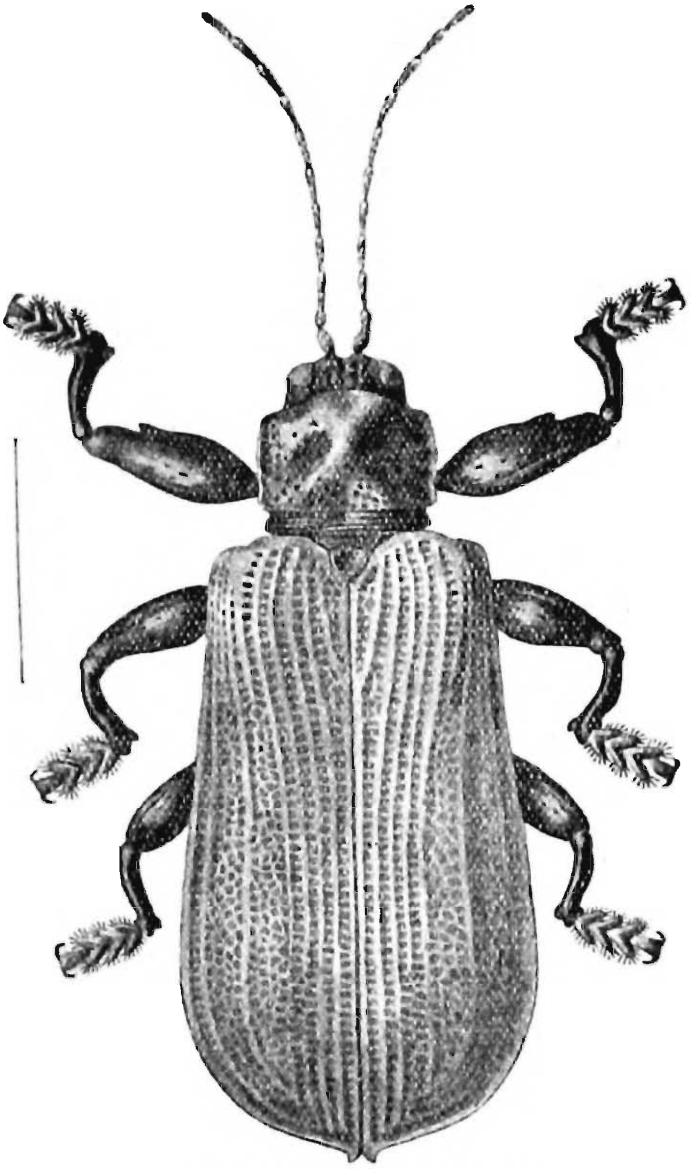


Fig. 10.—*Macrispa krishnalohita*, Maulik.

Head rugose, coarsely and deeply punctate, a deep groove from the vertex running along the middle line; seven proximal joints of

the antennæ with coarse and elongated punctures and shining, four distal joints covered with a bloom, apical joint pointed, apices of all joints (except the last) impunctate and shining. Mouth-parts covered with fulvous hairs. *Prothorax* quadrate, abruptly narrowed in front, the anterior angles obtuse and rounded, the sides parallel, their margins slightly sinuate and subreflexed, the posterior angles sharp right angles; anterior half of the disc smooth, finely and sparsely punctate; this smooth shining surface narrows along the middle line and extends a little beyond the middle, bearing one or two deep punctures; on each side of the middle line a deep depression with punctures in it,—this character is not marked in *M. saundersi*, Baly; posterior half of disc coarsely and deeply punctate; at the base is a depression, the base itself transversely strigose, its sides sharply cut off, a character not present in *M. saundersi*. *Scutellum* longer than broad at base; at a quarter of its length from the base it is bent, depressed in the middle, with one or two transverse ridges on the surface near the apex, which is rounded. *Elytra* broader than the prothorax, elongate, subparallel-sided in front, slightly dilated behind, extending considerably beyond the sides and apex of the abdomen, their apex rounded, the sutural angles armed with an acute tooth. Surface subnitid; nine costæ on each elytron; 1st an abbreviated one anastomosing with the sutural ridge; 2nd–5th parallel and complete; 6th short, terminating by breaking up into deep punctures; 7th complete, meeting the 5th at the apex; 8th short and similar to 6th; 9th complete; deep punctures between the costæ, those between the 5th and the 7th and between the 7th and the 9th confused; these costæ are thicker at their bases than at the apices, where there is a tendency to their being obliterated by the deep punctures. Margins of the elytra subreflexed. *Underside* shining, black. *Legs*: femora armed with a short flattened tooth, finely punctate.

♀. Antennæ shorter, femora of fore legs not incrassate, last abdominal sternite with a lunate depression.

♂. Antennæ longer, femora of fore legs incrassate, last abdominal sternite without a lunate depression.

Length, 22 mm.

ASSAM: Dejoo, North Lakhimpur, base of hills, iv.–viii. 1911 (*H. Stevens*).

Type in Mr. H. E. Andrewes' collection, London; cotype in the Indian Museum.

Genus **ESTIGMENA**, *Hope*.

Estigmena, Hope, Col. Man. iii, 1840, p. 174; Baly, Cat. Hisp. 1858, p. 100, pl. ii, f. 7; Chapuis, Gen. Col. xi, 1875, p. 296; Weise, Deut. Ent. Zeits. 1897, p. 117.

GENOTYPE, *Estigmena chinensis*, Hope.

Body elongate, parellel-sided. The beetles are generally smaller in size than those of the preceding genera. The antennæ are

stout, cylindrical, 11-jointed, and not pointed at the apex. The eyes are oval, their inner margin meeting the lateral border of the circular cavity in which the mouth-parts are placed. Owing to the proximity of the upper border of the oral cavity to the roots of the antennæ the clypeus is absent. The structure of the mouth-parts is as in the preceding genera and does not call for notice, except the mentum, which is more or less hexagonal and differs from that of *Anisodera* (the next genus), which has the mentum more or less pentagonal and greatly constricted laterally. The prothorax is quadrate, longer than broad, narrower than the elytra; each of the anterior angles has a bristle; the anterior margin is emarginate in the middle. The elytra are elongate and regularly punctate-striate, the interspaces being smooth. The femora are without any ridges or teeth, the claws being separated from each other and strong.

Range. Indo-Malay Region.

Three species have been described, two of which occur within our faunistic limits.

Key to the Species.

Elytra not scaly	*chinensis*, Hope.
Elytra scaly	*cribricollis*, Waterh.

5. Estigmena chinensis, *Hope.*

Estigmena chinensis, Hope, Col. Man. iii, 1840, p. 175, pl. ii, f. 1; Baly, Cat. Hisp. 1858, p. 100, pl. vii, f. 7; Indian Museum Notes, Calcutta, iii, 1894, p. 80; Gestro, Ann. Mus. Civ. Genova, 1888, p. 655, and 1897, p. 49; Baly, Ann. Mus. Civ. Genova, 1890, p. 232; Maulik, Rec. Ind. Mus. ix, 1913, p. 116; Stebbing, Indian Forest Insects, 1914, pp. 254-5.

As regards colour and size this is a very variable insect. Generally it is an elongate and parallel-sided beetle with blunt and moderately stout antennæ. The prothorax is quadrate with the sides sinuate. The elytra are punctate-striate with smooth interspaces. The colour of the prothorax may vary from light brown to black, the colour of the elytra also may be of any shade between these two colours. As a rule the underside has always a deeper shade than that of the upper side. Although in some cases the colour of the prothorax may be the same as that of the elytra, it is generally different. The prothorax may be bright chestnut-brown and the elytra nearly black; the prothorax may be black and the elytra brown, and so on.

Head deeply depressed between the bases of the antennæ, a deep groove down the middle of vertex, which is covered with small punctures, the latter being close to the eyes. The first joint of the antennæ is stout and rounded, second joint small, third the longest, fourth to sixth equal to one another in length. The first six joints on the upper side are always sparsely punctate, with a

few scattered hairs and shining, the seventh to eleventh opaque and thickly covered with hairs; on the underside, generally the first three joints and sometimes the basal portion of the fourth are shining but more hairy than on the upper side, the rest of the joints being opaque and hairy. In some cases it has been observed that on the underside only the two basal joints and the basal portion of the third are shiny and the rest opaque. This character of the difference of pilosity and opacity between the upper and lower sides of the antennæ is common in the next genus *Anisodera*, and serves as a point of affinity between the two genera. *Prothorax* longer than broad, sides bisinuate and margined, basal margin straight, anterior margin almost straight, slightly emarginate in the middle. The surface of the disc is more or less convex, with variable sculpturing; as a general rule the anterior portion and a longitudinal area along the middle line are smooth and without deep punctures, the basal portion and the sides being deeply punctate; sometimes the surface at the sides is more or less strongly depressed, and there may be a depression at the base; besides the deep punctures the whole of the surface is very finely punctate. *Scutellum* more or less triangular, smooth, impunctate; the apex rounded, sometimes very broadly and sometimes more narrowly so; the colour may agree with that of the prothorax or with that of the elytra. *Elytra* elongate, sides parallel and margined. A scutellar row of punctures is present; on each elytron at base there are nine rows of punctures, in the middle ten rows, because the seventh starting from the smooth humeral callus divides into two; fourth to eighth rows meeting at the place where the elytra slope down towards the apex; sutural angles unarmed. *Underside* shining, finely punctate.

Length, 10–16 mm.

Type in the Oxford Museum; one example seen by Hope is in the British Museum.

CEYLON. MADRAS: Coimbatore. BOMBAY: Belgaum (*H. E. Andrewes*). CENTRAL PROVINCES: Berar. NEPAL. SIKKIM: Mungphu. ASSAM: Sylhet; Cachar (*W Wood-Mason*). BURMA: N. Chin Hills; Thayetmyo (*Capt. E. Y. Watson*); Pegu; Tharrawady. CHINA. SIAM. CAMBODIA. SUMATRA.

Economic Importance.—This insect is a serious pest of bamboos in India and Burma. The mature beetle feeds upon the young shoots and leaves, and the larvæ destroy the interior of the stem. The mature beetle may be found in November in Berar, in July in Coimbatore, and in January in Lower Burma. There is no record of its feeding habits, etc., from other localities where it is found.

6. Estigmena cribricollis, *Waterh.*

Estigmena cribricollis, Waterhouse, Ann. Mag. Nat. Hist. (5) vii, 1881, p. 461.

An elongate, large, shining dark-brown insect. The shining parts are covered with scales, on the underside the scales are

fewer. The antennæ are long, being twice the length of the head and prothorax together.

Head with a deep cleft in the middle of the vertex between the bases of the antennæ, the vertex punctate. The antennæ have the six proximal joints on the upper side punctate and shining, each puncture with a whitish scale; the five apical joints are opaque, covered with greyish down, the apical joint bluntly pointed and with a few straight yellowish bristles at the apex; the first joint is stout and rounded, second elongate, third the longest, fourth to

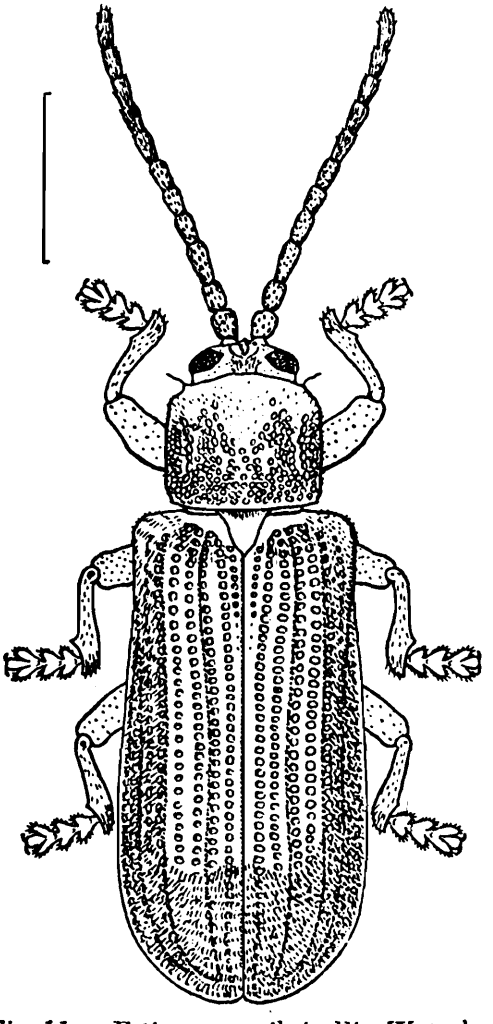


Fig. 11.—*Estigmena cribricollis*, Waterh.

sixth subequal in length; on the underside, only the first three joints are shining, the rest opaque. The labrum is covered with long straight bristles; maxillary and labial palpi bright chestnut-brown. *Prothorax* quadrate, sides parallel, slightly emarginate towards the posterior end, the front and basal margins almost straight, a small emargination in the middle of the front margin. The surface of the disc with the middle of the front part smooth and shining, but with some fine punctation; on each side are a few punctures; the base and sides closely and very strongly punctate, each puncture

having in its middle a small whitish scale; on each side of the disc is an elongate shallow impression. *Scutellum* smooth, impunctate, shining; at the apex where the suture commences there is a very deep depression. *Elytra* elongate, sides parallel and margined, very slightly broadened posteriorly, punctate-striate. A scutellar row of punctures is present; the interstices between the first five rows of punctures are broad and flat; between the fifth and eighth rows of punctures the interstices cannot be distinguished because the punctures become larger towards the outer sides of the elytra; beyond the eighth row and at the apical region the punctures become confused and a row cannot be distinguished; all the punctures are furnished with small whitish scales, which are more numerous at the sides and at the apex than in the middle, thus giving them a greyish appearance. The alternate interstices of the elytra are slightly and narrowly raised towards the apex. *Underside* paler than above, finely punctate; the punctures with similar scales, the last abdominal sternite with straight yellowish bristles.

Length, 16 mm.

South India.

Type in the British Museum.

Genus **ANISODERA**, *Chev.*

Anisodera, Chevrolat, in d'Orbigny, Dict. Univ. Hist. Nat. i, p. 535; Baly, Cat. Hisp. 1858, p. 101, pl. ii, f. 8; Chapuis, Gen. Col. xi, 1875, p. 295; Weise, Deut. Ent. Zeits. 1897, p. 118; Maulik, Proc. Zool. Soc. London, 1916, pp. 569–70.

Subgenus *Lissochila*, Weise, Coleop. Cat., Hispinæ, Berlin, 1911, p. 40.

Genotype, *Alurnus ferrugineus*, F.

Insects of large build, generally 15–20 mm., but some species may be as small as 9 mm. The colour varies from chestnut to very dark brown or black; the upper side is subnitid or opaque, the underside more shining. The antennæ are 11-jointed, the six basal joints generally shining and finely punctate on the upper side, the rest of the joints being opaque; on the underside a less number of joints are shining and punctate; the shining basal joints are narrower at the base and rounded or clavate at the apex, the apical opaque joints being cylindrical. The eyes are not pronouncedly convex. The prothorax is quadrate, parallel-sided, with no emargination at the middle of the front margin; its upper surface is always punctate, sometimes with deep furrows and sometimes plain. Each of the anterior angles has a bristle; the basal margin is always almost straight. The elytra are strongly punctate-striate, with a scutellar row of punctures; the punctures are as a rule larger and more confused at the sides; generally the alternate insterstices are strongly raised on the apical area. The claws are divaricate, that is to

say, there is an interval of space between the roots of the two claws.

I have already pointed out (Proc. Zool. Soc. 1916, p. 569) that the authorship of this genus must be attributed to Chevrolat and not to Baly, as has hitherto been done.

Range. Burma, India, Sumatra, Java, Borneo, Malacca.

Key to the Species.

1. Underside of third to fifth or sixth joints covered with thick long hairs.. ...	*barbicornis*, Weise, p. 31.
1'. Underside of third to fifth or sixth joints not covered with thick long hairs .	2.
2. The upper side and underside of only three basal joints of the antennæ shining; antennæ short and robust	*macilenta*, Gestro, p. 32.
2'. The upper side of more than three basal joints of the antennæ shining	3.
3. Upper surface of the prothorax obliquely excavated behind the middle on each side, the lateral margins sulcate . ..	*nasuellii*, Gestro, p. 33.
3'. Upper surface of the prothorax longitudinally excavated or depressed on each side	4.
4. Upper surface of the prothorax closely covered on the sides and base with large round punctures, the middle of the disc being more distantly punctate	*propinqua*, Baly, p. 33.
4'. The sculpturing of the upper side of the prothorax is different ..	5.
5. Clypeus smooth and concave; femora robust	*fraterna*, Baly, p. 34.
5'. Clypeus rugose and flat; femora not so robust ..	6.
6. Prothorax more quadrate.	*guérini*, Baly, p. 35.
6'. Prothorax distinctly longer.	*rusticana*, Weise, p. 36.

7. Anisodera barbicornis, *Weise.*

Anisodera barbicornis, Weise, Deut. Ent. Zeits. 1897, p. 119; id., *op. cit.* 1905, p. 114.

Body elongate, brownish black; upper side opaque or subnitid, underside shining.

Head: the interocular space is longitudinally depressed in the middle and with a fine impressed line, on either side of which the surface is convex, shining and finely punctate. The upper side of the six basal joints of the antennæ is shining and finely punctate. In the male the underside of the third to sixth joints is covered with thick and long hairs; in the female the underside of the third to fifth is not so thickly covered with hairs: the underside of the first to fifth joints in both sexes is shining and finely punctate, like the upper side. The basal shining joints of the antennæ are narrower at the base and clavate at the apex, the apical opaque

joints being cylindrical. *Prothorax* quadrate, its sides parallel and sinuate before the middle, the front margin convex and rounded, the basal margin straight; the anterior angles are rounded, the posterior ones almost right angles. The upper surface is coarsely and roughly punctate; on each side there is a broad longitudinal depression which runs the whole length of the pronotum. *Scutellum* small, almost circular towards the apex, and there slightly depressed. *Elytra* regularly punctate-striate, the punctures larger at the sides than nearer the suture. The interstices are more or less raised, the second, fourth, sixth and seventh being strongly raised at the apex; the sixth is interrupted in the middle, where the punctures are more confused. Very fine punctures can be detected on the surface of the interstices under a high power. The elytra are narrowed behind, the apical sutural angles being rounded. *Underside* more shining; the ventral segments finely punctate.

Length, 13½–14½ mm.

INDIA. BURMA: Arakan.

Type in Weise's collection.

A specimen seen by Weise is in Mr. H. E. Andrewes' collection, and there are two specimens in the British Museum.

8. **Anisodera macilenta**, *Gestro*.

Anisodera macilenta, Gestro, Bull. Soc. Ent. Ital. 1906 (1908), p. 178.

Body elongate, parallel-sided, black, shining.

Head finely and irregularly punctate. The antennæ are short and robust; the first three joints are shining above and below, the other joints opaque and pubescent; the first joint is short and stout, the second shorter than the first, thinner and slightly thickened towards the apex; the third the longest; the following joints are not thickened apically, the last joint being longer than the others and narrowed at the apex. *Prothorax* longer than broad, the sides parallel, the anterior angles slightly rounded. The upper surface is convex (more so in front) and closely punctate, except a median line and a portion at the apex. *Elytra* a little broader at the base than the prothorax and almost four times as long, parallel-sided, with the apex obliquely rounded. The surface is punctate-striate, the punctures being arranged in rows close to each other. The alternate interstices are raised, more so at the apex. *Underside* more shining than the upper side; the pro- and mesosterna are coarsely punctate; the venter is very finely punctate, the punctures being visible only under a high power.

Length, 11½–14 mm.

MADRAS: Wallardi, Travancore (*R. P. Favre*).

Type in the Genoa Museum; cotypes in Donckier de Donceel's collection.

9. Anisodera nasuellii, *Gestro.*

Anisodera nasuellii, Gestro, Ann. Mus. Civ. Genova, 1890, p. 233.

Body elongate, parallel-sided, convex; colour piceous, subnitid; fifth to eleventh joints of the antennæ dark.

Prothorax almost quadrate, slightly narrowed in front, the anterior half of the sides slightly sinuate. The anterior part is moderately rounded, the front angles being slightly emarginate. The dorsal surface is sparsely and irregularly punctate; along the lateral margins is a longitudinal sulcation, behind the middle an oblique excavation on each side, and at the base a transverse depression; all these depressions are closely punctate. *Elytra* punctate-striate, each with a depression in the middle; the alternate interstices moderately raised. *Underside* darker and more shining than the upper side.

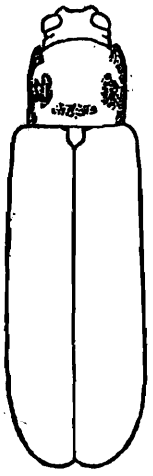


Fig. 12. *Anisodera nasuellii*, Gestro. (After Gestro.)

Length, 13–15 mm.

Burma: Karen Hills, Keba or Biapo district (*L. Fea*).

Type in the Genoa Museum.

This insect differs from *A. propinqua* in having (1) the body much narrower and more parallel-sided, (2) the antennæ longer, (3) the prothorax narrower, a little more convex, a little narrower at the apex than at the base, and rounded in front, with its upper surface much less punctate and with the characteristic sulcations and depressions already referred to.

10. Anisodera propinqua, *Baly.*

Anisodera propinqua, Baly, Ann. Mus. Civ. Genova, 1888, p. 657; Gestro, Ann. Mus. Civ. Genova, 1890, p. 234, fig.

Body elongate, moderately convex, dorsally slightly depressed; piceous, subnitid, the underside shining; the legs, metasternum and antennæ black.

Head: the clypeus is transversely grooved immediately behind the anterior margin, its disc smooth and impunctate, the longitudinal ridge obsolete. The mouth-parts are black, the palpi fulvous. The antennæ are filiform, rather more than half the length of the body, the six basal joints shining, the rest opaque. *Prothorax* scarcely broader than long, the sides very obtusely rounded in front, slightly but distinctly sinuate before the middle, the anterior angles with a short acute tooth. The upper surface is longitudinally excavated on either side, closely covered on the sides and base with large round punctures, the

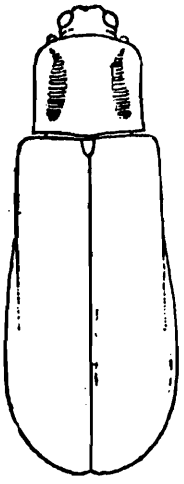


Fig. 13. *Anisodera propinqua*, Baly. (After Gestro.)

middle of the disc being more distantly punctate. *Elytra* almost parallel-sided, regularly rounded conjointly at their apices. The upper side is convex, very slightly flattened along the suture, covered with regular rows of large deep punctures, including a scutellar row; near the lateral margin and at the apex the punctures are less regularly placed. The humeral callus is costate, and towards the apex several of the other interspaces are also distinctly elevated.

Length, 12–14 mm.

BURMA: Thagata; Pegu; Meetan; Plapu; Karen Hills.

Type in the Genoa Museum.

The form and different sculpturing of the prothorax, together with the piceous abdomen and more shining upper surface, will separate the above species from *A. fraterna*.

11. **Anisodera fraterna**, *Baly*.

Anisodera fraterna, Baly, Ann. Mus. Civ. Genova, 1888, p. 655; Gestro, Ann. Mus. Civ. Genova, 1890, p. 233, and 1897, p. 51.

Body elongate, moderately convex, dorsally slightly depressed. The upper side, with the exception of the antennæ, is piceous and subopaque.

Head: the clypeus is concave, smooth and impunctate, the longitudinal ridge entirely obsolete. The antennæ are rather more than half the length of the body, not attenuated towards the apex; the six basal joints shining, the rest opaque; the apex of the terminal joint is obtuse. The palpi are fulvous. *Prothorax* subquadrate, scarcely broader than long; its sides somewhat diverging and slightly sinuate from the base towards the middle, and deeply sinuate anteriorly, the middle itself forming a distinct projection; the anterior margin rounded. The upper surface is closely and coarsely punctate, rugulose, and on either side is a broad longitudinal excavation which extends the whole length of the thorax; the disc has a narrow longitudinal groove, on either side of which are two irregular wart-like tubercles. *Elytra* parallel-sided, conjointly rounded at the apex. The surface is moderately convex, flattened along the suture, deeply and coarsely punctate, the punctures arranged in longitudinal rows, the first one short. Each elytron has three longitudinal costæ, one on the inner disc, a second between the inner and outer discs, and a third below the humeral callus; in addition to which there are one or two shorter costæ, placed on the outer disc towards the apex; all the costæ become slightly irregular and obsoletely verrucose posteriorly. *Legs*: the femora are robust and sinuate on their lower edge near the apex.

Length, 16 mm.

NORTHERN INDIA. BURMA: Thagata (*L. Fea*).

Type in Genoa Museum.

The smooth concave clypeus and more robust femora will separate *A. fraterna* from *A. guérini*, which species it otherwise closely resembles. One specimen from Northern India is rather more coarsely punctate than that taken by Fea.

12. **Anisodera guérini**, *Baly*.

Anisodera guérini, Baly, Cat. Hisp. 1858, p. 168, pl. vii, f. 8; Gestro, Ann. Mus. Civ. Genova, 1885, p. 163; 1890, p. 233; and 1897, p. 50; Maulik, Rec. Ind. Mus. ix, 1913, p. 117.
Anisodera ferruginea, Guérin, Rev. Zool., 1840, p. 333; Baly, Cat. Hisp. p. 101.

Body elongate; dark brown; underside, legs and antennæ black; opaque or subnitid above, shining beneath.

Head rugose, vertex grooved. The upper side of the six proximal joints of the antennæ and the underside of four are shining, smooth, sparsely punctate; each of these six joints is constricted at the base and dilated at the apex, the rest being opaque and more or less cylindrical; the apical joint blunt. *Prothorax* subquadrate, longer than broad; the sides generally sinuate, the anterior angles rounded, posterior acute. The upper surface is rugose-punctate, with a longitudinal shallow depression on each side, and one in front of the base; in some specimens a faint median groove is observable, with two slightly elevated, smooth tubercles on each side of it, which are sometimes obsolete. *Scutellum* with the apex broadly rounded, smooth, impunctate. *Elytra* punctate-striate, each with four costæ and a scutellar row of punctures. The first costa is situated after two rows of punctures from the suture, excluding the scutellar row; the second costa appears after two rows of punctures from the first; the third commences from the humeral callus, disappears in the middle of the elytra, but appears again at the apex; after another row of punctures comes the fourth costa, which is less prominent towards the apex; there is in some specimens a short fifth costa at the apex. The rows of punctures between the costæ are not regular and sometimes confused. *Underside* shining black; prosternum, mesosternum and mesosternal episternum with very coarse punctures; metasternum sparsely and extremely finely punctate; abdominal sternites thickly and coarsely punctate, and edged with brown, a few straight hairs on the last segment.

Length, 15–19 mm.

S. India: Cochin State, Parambikulam, 1700–3200 ft., 16–24. ix. 1904 (*F. H. Gravely*). Bombay: N. Kanara (*T. R. D. Bell*). N. Bengal: Purneah (*C. Paiva*). Sikkim: Mungphu. Assam: Shillong; Sibsagar; Mishmi Hills, Tulang, 4000 ft., 18. vii. 1911 (*Capt. F. Bailey*). Burma: Tenasserim. Java.

Type in the British Museum.

Variation in this species is observable in the following points:—(1) The size varies from 15 mm.–19 mm.; (2) the colour varies from brown to almost black; (3) some are more opaque than

others; (4) the sides of the prothorax are sometimes strongly sinuate, sometimes almost straight; (5) the depressions on the disc of the prothorax vary in depth, in some cases being almost obsolete; (6) the four tubercles on the pronotum vary in development, sometimes being obsolete; (7) the costæ on the elytra vary in prominence.

13. **Anisodera rusticana**, *Weise.*

Anisodera rusticana, Weise, Deut. Ent. Zeits. 1897, p. 119.

Body elongate, slightly convex, subcylindrical, dark red-brown, subopaque; the metasternum, legs, and the antennæ black.

Head not raised between the antennæ and with a fine longitudinal impressed line. The vertex of the head is depressed, rough and punctate, with a median longitudinal impressed line. The upper side of six basal and the underside of four basal joints of the antennæ are finely punctate, smooth and shining; the six basal joints are robust, each joint being narrower at the base and rounded at the apex, the first joint more so than others, the apical five joints are cylindrical and subequal to each other in length, the last being longer than the others and blunt. *Prothorax* almost one-third longer than broad, the front margin rounded, the sides trisinuate, the basal margin almost straight. The upper surface is slightly depressed longitudinally in the middle and at the sides, very roughly and closely punctate; two ill-defined elevated shining areas are placed, one behind the other, on each side of the median longitudinal depression. *Scutellum* smooth, narrow, triangular, with the apex rounded. *Elytra* punctate-striate and costate, the punctures large and close. The second, fourth and sixth interstices are strongly raised in the apical area, the second and sixth meeting and the fourth stopping short; the sixth is not so prominent towards the basal three-fourths of its length. The elytra are narrowed towards the apex, the sutural angles being rounded. *Underside* more shining than the upper side.

Length, 16–17 mm.

BURMA: Tharrawaddy.

Type in Weise's collection; cotypes in the British Museum.

Genus **ANISODEROPSIS**, *Maulik.*

Anisoderopsis, Maulik, Proc. Zool. Soc. Lond. 1916, p. 570.

TYPE, *Anisoderopsis excavata*, Baly.

This genus is very similar in general characters to the genus *Anisodera*, but differs from it as follows: the labrum is short, its transverse edge is emarginate and covered with long and stiff hairs; the labrum lies on a lower plane than the clypeus; the upper side of the body is shining; and the elytra are without pronounced ribs. These characters are fairly constant and are quite sufficient to distinguish it from the preceding genus.

Range. India, Burma, Indo-China, Java, Philippines.

Key to the Species.

1.	Insect narrow and elongate.	2.
1′	Insect much broader and larger .	3.
2.	Insect entirely black, very elongate; alternate interstices on the elytra raised towards the apex	*nigra*, sp. n., p. 40.
2′.	Insect dark brown, not very elongate, subcylindrical in form.	*cylindrica*, Hope, p. 40.
3.	Pronotum with a lateral oblong fovea which covers the whole length of the disc	*feæ*, Baly, p. 39.
3′.	Pronotum with a lateral excavation which does not run the whole length of the disc and is sometimes obsolete..	4.
4.	Colour piceo-fulvous, except the eyes, mandibles, and distal joints of the antennæ, which are black ..	*gestroi*, Baly, p. 38.
4′	As a rule the head, antennæ, prothorax, sternum, and legs are black, the rest of the body being chestnut-brown	*excavata*, Baly, p. 37.

14. **Anisoderopsis excavata**, *Baly*.

Anisodera excavata, Baly, Cat. Hisp. 1858, p. 105, pl. viii, f.1; Maulik, Rec. Ind. Mus. ix, 1913, p. 117, and xi, 1915, p. 371.

Body elongate, shining; head, antennæ, prothorax, sternum and legs black; elytra and rest of the body chestnut-brown.

Head coarsely punctate, vertex strongly depressed. The antennæ are robust, two-thirds the length of the body in the male, rather shorter in the female; the upper side of five and the underside of three proximal joints are shining, with coarse elongate punctures, and sparsely covered with whitish hairs; on the underside the hairs are longer; the rest of the joints opaque, the third the longest. *Prothorax* subquadrate, sides parallel, sinuate, the anterior angles rounded and the posterior acute. The surface is coarsely and deeply variolose-punctate, as a rule deeply excavated on either side near the outer margin, the excavated portion rugose; the excavation is variable, it is not always deep, and in some specimens it has almost disappeared. The blackness of the prothorax also is not constant, for in some cases the prothorax is of the same chestnut colour as the body. The anterior portion of the disc is nearly free from punctures, but sometimes is very finely punctate. *Scutellum* smooth, impunctate, with its apex rounded. *Elytra* broader than the thorax, oblong-elongate, sides nearly parallel, apex rounded, punctate-striate, with a short scutellar row of punctures. On each elytron there are nine rows of punctures at the base, and ten in the middle, because the seventh row starting from the humeral callus divides into two; the fourth to eighth rows meet at the place where the elytra slope down towards the apex. *Underside* smooth and shining.

Length, 13–19 mm.

SIKKIM: Darjiling, May–June. ASSAM: Cachar (*J. Wood-Mason*). BURMA: Myitkyina district, Sadon, 2500–3500 ft., April–May 1911 (*E. Colenso*). TONKIN.

Type in the British Museum.

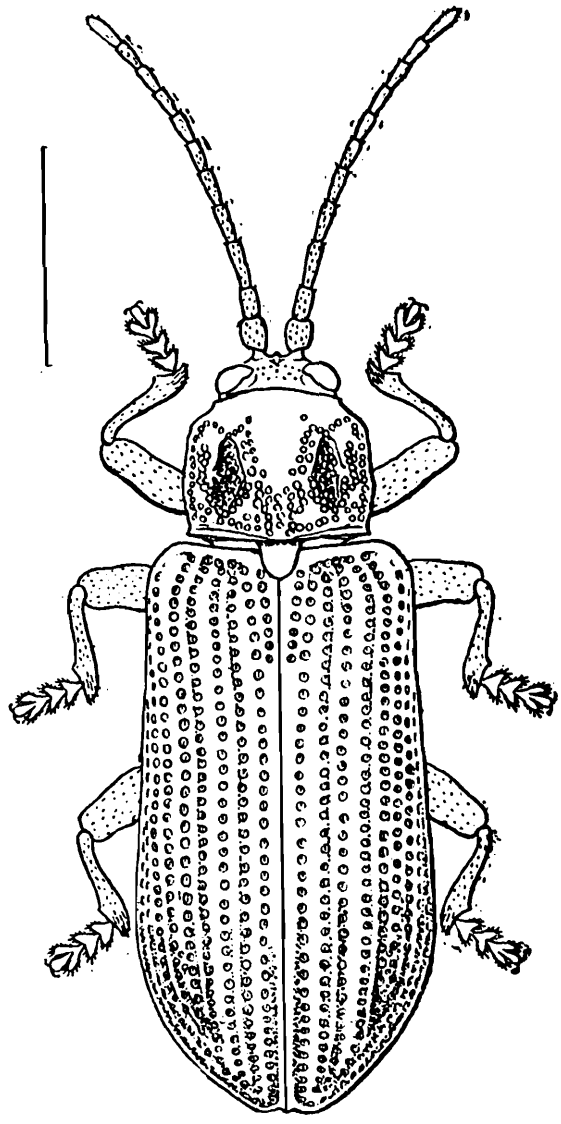


Fig. 14.—*Anisoderopsis excavata*, Baly.

15. Anisoderopsis gestroi, *Baly*.

Anisodera gestroi, Baly, Ann. Mus. Civ. Genova, 1888, p. 656; Gestro, Ann. Mus. Civ. Genova, 1890, p. 235.

Body elongate, piceo-fulvous, shining; eyes, mandibles, and distal joints of the antennæ black.

Head punctate, sparsely covered with hairs, vertex depressed. The clypeus longitudinally raised. The antennæ are half the length of the body in the male, rather shorter in the female; the upper side of five and the lower side of four proximal joints are shining, with elongate punctures and sparsely covered with hairs; the rest of the joints are opaque; the third joint is the longest.

and nearly twice the length of the second joint. *Prothorax* subquadrate, with the sides parallel and sinuate, the anterior angles rounded, the posterior acute, and the posterior edge margined. The disc is transversely convex, shining, impressed on either side near the lateral margin with an ill-defined fovea, which in some specimens is nearly obsolete. The surface is strongly punctate, the punctures closer at the sides and to a less extent at the base, distant and sometimes entirely absent in the centre; very fine punctures also cover the whole disc. *Scutellum* broadly rounded at apex, impunctate. *Elytra* broader than the prothorax, parallel-sided, with ten regular rows of punctures and a short scutellar row; at the point where the elytra slope down towards the apex twelve rows can be counted, all except the first and second and the two marginal ones converging at this point. The interspaces are obsoletely thickened near the apex. *Underside* finely punctate, shining and smooth; the last three abdominal sternites with coarser punctures; the last sternite with long, stiff, yellowish hairs.

Length, 15 mm.

BURMA: Bhamo (*L. Fea*).

Type in the Genoa Museum.

16. Anisoderopsis feæ, *Baly*.

Anisodera feæ, Baly, Ann. Mus. Civ. Genova, 1888, p. 658; Gestro, Ann. Mus. Civ. Genova, 1890, p. 236.

Body elongate, parallel-sided, pale fulvo-piceous, shining; the distal joints of the antennæ black. In some specimens the eyes, the whole antennæ, mandibles, and legs are black.

Head punctate, depressed on the vertex, with a longitudinal groove down the middle. The antennæ are robust, not attenuated towards the apex, nearly half the length of the body; the third joint is the longest and nearly as long as the preceding two united; the upper side of the proximal six and the lower side of five joints are shining, punctate, and sparsely covered with hair; the rest of the joints are opaque. *Prothorax* not longer than broad, sides straight, the anterior angles rounded, and the posterior ones almost right angles. The surface is impressed on either side near the lateral margin with an oblong fovea covering the whole length of the disc, which is strongly punctate, the punctures crowded on the sides and foveæ, and distant on the middle disc. *Scutellum* smooth, shining, impunctate, with its apex rounded. *Elytra* nearly twice the length of the prothorax, parallel-sided, punctate-striate, four-costate. A short scutellar row of punctures is present; between the suture and the first costa are two regular rows, with an additional row between at the apex; the first costa is more strongly raised at the apex than at the base; between the first and second costæ there are two rows; between the second and fourth mainly three, but short rows occur here and there

between them, the puncturing becoming confused at the apex; the third costa is a short one lying between the second and fourth in the apical area, but nearer the fourth; between the fourth and the lateral margin the puncturing is so confused and irregular that it is difficult to make out the number of rows. *Underside* shining, finely punctate, the three distal abdominal sternites more coarsely punctate.

Length, 15·5 mm.

BURMA: Thagata (*L. Fea*).

Type in the Genoa Museum. One authentically named specimen in the British Museum.

17 **Anisoderopsis cylindrica**, *Hope*.

Trogosita cylindrica, Hope, Zool. Misc. 1831, p. 27.
Anisodera cylindrica, Baly, Cat. Hisp. 1858, p. 106; Gestro, Ann. Mus. Civ. Genova, 1890, p. 236; Maulik, Rec. Ind. Mus. ix. 1913, p. 116.

A small, subcylindrical, narrow, dark-brown beetle; the antennæ dusky.

Head broad, punctate. The upper side of the proximal five and the underside of four joints of the antennæ are shining, punctate, and sparsely covered with a few hairs; the rest are opaque and more thickly covered with hairs. *Prothorax* longer than broad, slightly narrowed behind, sides almost parallel, and margined. The surface of the disc is convex and punctate, more deeply at the sides than in the middle. *Scutellum* triangular, apex rounded, impunctate. *Elytra* elongate, parallel-sided, punctate-striate; a little broader at the base than the prothorax. Only three or four punctures represent the sutural row, which, unlike other species, anastomoses with the first row of punctures; on each elytron in the middle there are ten rows, the costa starting from the humeral callus dividing into two rows of punctures. Alternate interspaces are more or less raised into costæ, which are four in number, the second and third meeting and continued as one costa at the point where the elytra slope down towards the apex. *Underside* shining, the abdominal sternites punctate; the last tergite and sternite have a few stiff hairs.

Length, 8·5–9·5 mm.

NEPAL. SIKKIM: Darjiling district, Lebong, 5000 ft.; Mungphu. ASSAM: Bhutan frontier, Mangaldai district, 3. xii. 1910 (*S. W Kemp*); Sibsagar. BURMA: Karen Hills, 4200–4500 ft., ii–iii. 1888.

Type in the Oxford Museum.

18. **Anisoderopsis nigra**, sp. nov.

Body elongate, narrow, parallel-sided; shining, entirely black.

Head with the vertex strongly but sparsely punctate, the eyes strongly convex, and the collar a little constricted. The antennæ

are robust, not attenuated towards the apex, the upper side of four proximal joints shining and punctate, and the rest opaque and covered with brownish hairs; the lower side of second and the basal portion of third are shining and punctate; the third joint the longest. *Prothorax* longer than broad, a little constricted at base, dilated in the middle and slightly narrowed in front, the basal margin straight. The surface is strongly convex and very coarsely punctate, except on the anterior third and a narrow longitudinal stripe down the middle which are finely punctate. *Scutellum* elongate, parallel-sided; surface smooth, shining and

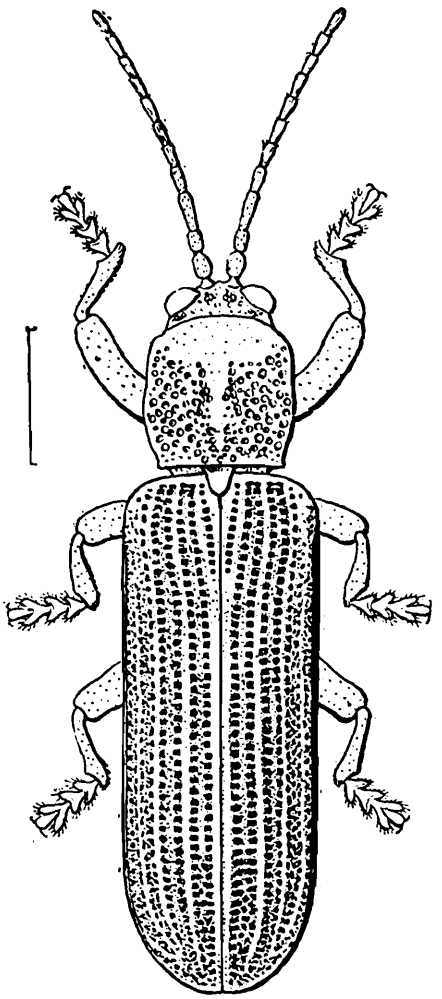


Fig. 15.—*Anisoderopsis nigra*, Maulik.

impunctate; the apex rounded. *Elytra* broader at the base than the prothorax, elongate, parallel-sided, punctate-striate. Besides the scutellar row of punctures there are ten rows; the alternate interstices 1, 3, 5, 7, 9, are gradually elevated towards the apex. The whole surface is finely reticulate. *Underside* very shiny (more so than the upper side), finely punctate, a few coarser punctures at the side of the prosternum and on the mesosternum. The last abdominal sternite is covered with long yellowish hairs.

Length, 12–14 mm.; breadth, 3–3·5 mm.

BENGAL: Mamode, v. 1888 (*Atkinson*). SOUTH INDIA: Pirmaad, Travancore (*G. S. Imray*).

Type of male in the British Museum; type of female in the Indian Museum.

Genus **HISPODONTA**, *Baly*.

Hispodonta, Baly, Cat. Hisp. 1858, p. 78, pl. ii, f. 1; Chapuis, Gen. Col. xi, 1875, p. 284.

GENOTYPE, *Hispodonta nigricornis*, Baly.

Moderate-sized beetles with the elytra slightly broadened posteriorly. *Head* large, produced between the bases of the antennæ. The interocular space is broad and generally flat, sometimes with a short groove in the middle. The antennæ are attenuated at the apex, almost half as long as the body, the first and second joints generally very short; sometimes the first joint is oblong and incrassate; the third joint twice as long as the first and second together, the following joints cylindrical. *Prothorax* almost as long as broad, slightly narrowed in front, and always narrower at the base than the elytra. The anterior angles are rounded, the posterior acute and always with a fine bristle. *Scutellum* generally broader than long, and sometimes pentagonal at the apex. *Elytra* oblong or oval, rounded behind, the lateral border explanate and reflexed. The surface is depressed, the first five rows of punctures almost regular, the rest (seven rows) irregular. *Legs*: the claws are free and project beyond the hairy fringe of the third tarsal joint.

Range. India, Philippines, Amboina, New Guinea.

Altogether nine species have been described, of which one only has been reported as occurring in India.

19. Hispodonta plagiata, *Baly*.

Hispodonta plagiata, Baly, Ent. Monthly Mag. xxiii, May 1887, p. 270.

Body ovate, depressed, dirty yellow, shining; the antennæ piceous; almost behind the middle on each elytron there is an ill-defined, large, brownish-black patch.

Head: front excavated and coarsely punctate, the vertex smooth and impunctate. *Prothorax* one and a half times as broad as long, the sides rounded; each posterior lateral angle bears an obtuse tooth. The upper surface is smooth and nearly impunctate in front, its base and sides being rather coarsely punctate. *Elytra* much broader than the prothorax, rather strongly punctate-striate.

Length, 10 mm.

INDIA.

This species closely resembles the pale varieties of *H. janthina*, Blanchard (Celebes), but differs in having the prothorax much broader, its sides at the same time being more regularly rounded. It was described from a single specimen in Baly's collection, and the type should be in the British Museum, but no trace can be found of it there. There are many specimens of *H. janthina*, but I cannot find a single example which has the prothorax broad enough to justify its identification as *H. plagiata*.

Genus **CALLISPA**, *Baly*.

Callispa, Baly, Cat. Hisp. 1858, p. 4; Chapuis, Gen. Col. xi, 1875, p. 272; Weise, Ins. Deutschl. vi, 1893, p. 1060; Péringuey, Ann. S. Afr. Mus. 1908, p. 334.

GENOTYPE, *Callispa fortunii*, Baly (North China).

The insects belonging to this genus are generally oblong-ovate, small and moderately convex. *Head* produced between the antennæ, which are filiform, reaching the humerus; the third joint as a rule is as long as the first and second joints together, but in some cases it may be shorter. *Prothorax* quadrate, the sides dilated, the anterior angles rounded; the upper surface on each side has a depression, the middle portion being more or less convex and generally smooth or with finer punctures, the depressions with coarser punctures. *Scutellum* small, quadrate or almost quadrate, the apex being broadly rounded; it may be triangular. *Elytra* hardly or slightly broader than the prothorax, the humeral callus elevated. Each elytron has ten regular rows of punctures, but these are sometimes irregular. Besides these rows there is always a scutellar row, sometimes represented only by a few punctures. The punctures are generally finer towards the apex than at the base, being sometimes elongate and uniting to form a deep groove. The interstices in some cases are quite plane and smooth, in others they are slightly raised. As a general rule a little beyond the base of the elytra the rows of punctures bend inwardly. *Legs*: the claw-joint is small, the claws being hidden or covered by the hairy fringe of the bilobed joint.

Range. India, China, Philippines, Sunda Islands, Central and South Africa.

In the following species whenever the measurement of the breadth of the insect is given, it is broader than is usually the case.

Key to the Species.

1.	Upper side entirely brown or yellow.	2.
1′.	Upper side not entirely brown or yellow . .	6.
2.	Tarsi black .	*nigritarsata*, sp. n., p. 46.
2′.	Tarsi not black	3.
3.	Prothorax testaceous yellow; elytra pale fulvous	*pallida*, Gestro, p. 46.

3′	Prothorax and elytra concolorous	4.
4.	Lateral depressions on the prothorax deeper; the punctation of the elytra bolder. . . .	*krishnashunda*, sp. n., p. 47.
4′	Lateral depressions on the prothorax less pronounced; the punctation of the elytra feebler. ..	5.
5.	Insect narrower, the interstices more costate	*pita*, sp. n., p. 48.
5′	Insect broader, the interstices absolutely flat.	*nigricornis*, Baly, p. 48.
6.	Elytra with broad black lateral stripes uniting at the apex, which is broadly black	*fulvonigra*, sp. n., p. 49.
6′	Elytra without such broad black stripes and the apical area not black	7.
7	Upperside red or yellow, the elytra with black spots or stripes ..	8.
7′.	Upperside without spots or stripes	15.
8.	Elytra with twelve black spots.	12-*maculata*, Chap., p. 50.
8′.	Elytra with less than twelve spots	9.
9.	Elytra with eight spots ..	8-*punctata*, Baly, p. 51.
9′	Elytra with less than eight spots	10.
10.	Elytra with seven spots	7-*maculata*, Weise, p. 52.
10′	Elytra with less than seven spots. .	11.
11.	On each elytron a broad discal black band extending from just below the base for nearly the whole length	*vittata*, Baly, p. 52.
11′	Elytra without a broad discal black band	12.
12.	Sides of the prothorax considerably expanded, the disc strongly convex longitudinally ..	*expansicollis*, sp. n., p. 55.
12′	Sides of the prothorax not considerably expanded	13.
13.	Prothorax longer than broad, the sides hardly expanded . ..	*angusticollis*, sp. n., p. 54.
13′	Prothorax broader than long, the sides slightly expanded .	14.
14.	Elytra with six spots, a sutural stripe on the apical half and a broad black sublateral stripe expanding twice towards the margin .	*maculipennis*, Gestro, p. 53.
14′	Elytra with four spots, and a narrow stripe from the humerus to the middle or a little beyond	*arcana*, Duv., p. 55.
15.	The anterior portion of the upperside red-brown, the posterior portion of the elytra black, blue, or purple, or at least dark	16.
15′.	The coloration of the upper side is not as stated above . . .	20.
16.	The anterior part of the elytra red or reddish yellow, the posterior part bright metallic blue	17.

16′.	The colour of the posterior part of the elytra is not metallic blue	18.
17.	Tarsi broad and fuscous.. .. .	*tarsata*, Baly, p. 58.
17′.	Tarsi not comparatively broad and fuscous	*dimidiatipennis*, Baly, p. 56.
18.	Posterior part of the elytra purple; length 8½–10 mm.	19.
18′.	Posterior part of the elytra blue-black; length 3½–4 mm....	*sundara*, sp. n., p. 61.
19.	Insect very broad; the anterior half of the elytra yellow to dark brown	*mungphua*, sp. n., p. 59.
19′.	Insect much narrower; the basal quarter of the elytra dark red	*hypœnops*, sp. n., p. 60.
20.	Prothorax red or yellow; the elytra entirely dark blue	21.
20′.	Upper side entirely blue or black, or the head and prothorax black and the elytra blue	25.
21.	Prothorax narrower in front than at the base .. .	*brettinghami*, Baly, p. 58.
21′.	Prothorax not narrower in front than at the base	22.
22.	Anterior margin of the prothorax deeply sinuate; insect broader (8½–10 by 5–6 mm.) .	*karena*, sp. n.. p. 62.
22′.	Anterior margin of the prothorax not deeply sinuate; insect narrower	23.
23.	Size smaller (4–4½ mm.)..	*minor*, Gestro, p. 64.
23′.	Size larger (8 mm.).	24.
24.	Interocular space broader and almost impunctate .	*montivaga*, sp. n., p. 63.
24′.	Interocular space narrower and distinctly punctate	*nagaja*, sp. n.. p. 62.
25.	Scutellum broader than long, metallic blue; the elytra violet . ..	*scutellaris*, Weise, p. 64.
25′.	Scutellum, as a rule, not broader than long; the elytra not violet.	26.
26.	Underside entirely black, the upper side blue	*cœruleodorsata*, sp. n., p. 65.
26′.	Underside not entirely black....	27.
27.	Head and prothorax shining blue-black with the anterior angles fulvescent; the elytra obscure violet, with the suture at base blue-black; the underside and legs brown; size very small (3½ mm.)	*minima*, Gestro, p. 66.
27′.	Insect differently coloured, larger (4–9 mm.)..	28.
28.	Legs, particularly the tibiæ, comparatively short; the upper side blue, the lateral margins of prothorax and elytra red-brown.	*brevipes*, sp. n., p. 66.
28′.	Legs not comparatively short	29.

29.	Underside entirely shining rufo-fulvous; the prothorax black, narrowly edged on the sides with dark brown; size large (9 mm.)	*insignis*, Baly, p. 67.
29′	Underside partly black; size 4–6 mm. . . .	30.
30.	Prothorax narrowed towards the front . . .	32.
30′.	Prothorax not narrowed towards the front	31.
31.	Antennæ short.	*brevicornis*, Baly, p. 68.
31′	Antennæ comparatively longer.	*assama*, sp. n., p. 68.
32.	Margins of prothorax and elytra ferruginous . . .	*loxia*, Weise, p. 69.
32′	Margins of prothorax and elytra not ferruginous	*feæ*, Baly, p. 69.

20. **Callispa nigritarsata**, sp. nov.

Body oblong-ovate, shining, brown; the antennæ and eyes black, the tarsi blackish; the elytra blackish on the apical slope, this being more evident when dried specimens are wetted; the articulations of the leg-joints red-brown.

Head smooth, impunctate, and slightly produced between the bases of the antennæ. The antennæ are gradually thickened towards the apex, subnitid, punctate, slightly covered with hairs; the third joint is almost equal in length to the first and second combined. *Prothorax* almost as long as broad, the basal margin bisinuate, the sides straight and margined. The upper surface is depressed on each side and in the middle at the base, slightly convex in the middle; in the lateral depressions are some coarse punctures, the rest of the surface with a few scattered, similar punctures. *Scutellum* oblong, sides straight, apex broadly rounded; surface smooth, shining, impunctate. *Elytra* punctate-striate: besides the scutellar row on each elytron there are eight rows at the base and ten in the middle; the interstices are smooth and plane. *Underside* smooth, shining and impunctate, except for a few coarse punctures on the sides of the prosternum and meso-sternum.

Length, 5·5 mm.

Ceylon: Dikoya, 3800-4200 ft., 6. xii. 81—16. i. 82 (*G. Lewis*).

Type in the British Museum.

Described from two examples.

21. **Callispa pallida**, *Gestro*.

Callispa pallida, Gestro, Ann. Mus. Civ. Genova, 1888, p. 130, and 1890, p. 230.

Callispa fleutiauxi, Baly, Ann. Soc. Ent. France, (6) ix, 1889, p. 489; Gestro, Ann. Mus. Civ. Genova, 1900, p. 434.

Body oblong-ovate, shining; the antennæ black, the head and prothorax testaceous yellow, the elytra pale fulvous.

Head smooth. The antennæ are shorter than half the length of the body. *Prothorax* twice as broad as long, its sides very much rounded, the anterior margin slightly projecting in the middle. The surface has two broad shallow depressions, the remainder being sparsely and finely punctate; a narrow area along the middle longitudinal line is entirely impunctate. *Elytra* broader at base than the prothorax, widely rounded at the apex, strongly punctate-striate. The punctures are smaller and less deep near the suture and towards the apex, thicker and closer towards the margins; immediately along the lateral margins the punctures get smaller than at any other place and become confused. *Underside* of the body and the legs testaceous yellow; the margins of metasternum are covered with large punctures; the abdominal sternites are extremely thin.

Length, $4\frac{1}{2}$–$5\frac{1}{2}$ mm.

Burma: Bhamo, vi–viii. 1886 (*L. Fea*).

Type in the Genoa Museum.

22. **Callispa krishnashunda**, sp. nov.

Body ovate, rather broad, entirely yellow; antennæ black.

Head smooth, very minutely punctate, and slightly but acutely produced between the bases of the antennæ. The antennæ are of uniform thickness throughout, but pointed at the apex; the third joint is as long as the first and second together; the surface of the joints is punctate and pubescent. *Prothorax* broader than long, the sides parallel, the margins slightly scalloped, rounded at the anterior angles; the front margin is broadly concave, the posterior margin bisinuate and transversely depressed a little in front of the base. The upper surface is depressed at the sides and convex longitudinally in the middle; the anterior border and a small area along the middle line are impunctate; there are a few punctures on the convex surface, the depressed area being more strongly and closely punctate. *Scutellum* quadrate, with the apex rounded, the surface smooth and impunctate. *Elytra* broader than the prothorax, parallel-sided; besides the scutellar row, there are ten rows of punctures on each at the base, twelve in the middle and eleven towards the apex; counting the rows at the base the ninth row is a short one terminating just beyond the middle; the punctures are stronger towards the apex, where the rows meet in pairs. *Underside* uniformly yellow, smooth, impunctate. The claw-joint hardly projects beyond the lobes of the third joint.

Length, 6 mm.

Ceylon (*Nietner*).

Type in the British Museum.

Described from one example.

The specific name is derived from a Sanskrit word meaning "black antennæ."

23. **Callispa pita**, sp. nov.

Body oblong-ovate, yellow, shining; the antennæ black, and the tarsi dark.

Head smooth, sparsely and very minutely punctate, with a faint depression in the middle, and produced between the bases of antennæ. The antennæ are almost of uniform thickness throughout, pointed at the apex, sparsely covered with hair, with elongate punctures, the third joint being longer than the second. *Prothorax* quadrate, the sides almost parallel, rounded at the anterior angles, the posterior angles acute, the basal margin bisinuate. The upper surface has a shallow depression on each side, convex in the middle, where there are a few scattered punctures, and similar punctures on the other parts. *Scutellum* oblong, smooth, impunctate, a little longer than broad, the sides parallel. *Elytra* a little broader at base than the prothorax. On each elytron, besides the scutellar row of punctures, there are eight rows at the base and ten in the middle; the punctures are larger at the sides than near the suture and the apex, so that the interstices appear to be raised; the rows meet in pairs at the apex. *Underside* uniformly yellow, shining, smooth, impunctate. Tarsi dark, the claw-joint projecting beyond the lobes of the third joint.

Length, 5 mm.

CEYLON.

Type in the British Museum.

Described from one example.

This species is narrower than *C. nigricornis*, the punctures are stronger, the interstices appear to be more costate (in *C. nigricornis* they are absolutely plane), the antennæ are comparatively thicker, and the third joint shorter. The specific name *pita* is a Sanskrit word meaning yellow.

24. **Callispa nigricornis**, *Baly*.

Callispa nigricornis, Baly, Cat. Hisp. 1858, p. 8.

Body oblong-ovate, moderately convex, pale shining fulvous, the eyes and antennæ black.

Head smooth, slightly convex, with a shallow fovea in the middle of the forehead and an acute process between the bases of the antennæ. The labrum is convex, large. The antennæ are filiform, as usual in the genus. *Prothorax* almost twice as broad as long, the sides nearly straight, rounded and narrowed in front; the anterior margin is curved, its middle slightly produced, convex; the posterior margin is sinuate, the middle produced towards the scutellum. The upper surface has the sides depressed, covered with coarse punctures; in the middle it is convex longitudinally, the punctures less crowded, a broad longitudinal space in the centre being impunctate. *Scutellum* subquadrate, impunctate. *Elytra* broader than the prothorax, ovate; the margin is broadly

dilated, deflexed, with the apex rounded. The upper surface is smooth and shining, moderately convex, deeply punctate-striate, the puncturing being finer near the apex, coarser and more deeply impressed on the dilated border. On each elytron a short scutellar row of punctures is present and there are eleven regular rows of punctures, across the broadest portion twelve rows can be counted, and again at the apical region eleven rows; this is because the row starting from the humeral callus gives off two other rows, one immediately after its commencement, and another about the middle of the elytron; the two marginal rows unite at the point where the elytron bends towards the apex. The underside does not call for any notice in this species.

Length, 5 mm.; greatest breadth, 3 mm.

CEYLON.

Type in the British Museum.

25. **Callispa fulvonigra**, sp. nov.

Body oblong-ovate, shining; the prothorax, a narrow oblong patch from the base to a little distance beyond the middle of the elytra, and the thoracic and abdominal sterna (excepting the sides and apex) fulvous, the rest of the body black.

Head smooth, finely punctate, and very slightly and acutely produced between the bases of the antennæ. The antennæ are gradually thickened towards the apex, punctate, sparsely covered with a few hairs; the third joint is almost as long as the first and second together, the apical joint blunt. *Prothorax* almost as long as broad, slightly narrowed in front, the basal margin bisinuate, the lateral margins gradually narrowed towards the front, a little depressed at base; the posterior angles are acute, the anterior ones being rounded. The surface is convex, with a few scattered and coarse punctures at the base and sides, more finely punctate in the middle, with the anterior surface impunctate. *Scutellum* elongate, with the sides parallel, and the apex rounded; dark brown, smooth and impunctate. *Elytra* a little broader than the prothorax, parallel-sided, with the apex rounded. The scutellar row is represented by only two punctures; besides this, on each elytron there are nine rows at the base and eleven in the middle; the humeral callus is impunctate. At the base of the elytra the breadth of the brown patch is equal to that of the prothorax, then it gradually narrows and passes beyond the middle; there are four rows of punctures on the brown, the fifth being partly on the brown and partly on the black. *Underside* smooth, impunctate, except for a few punctures here and there.

Length, 5 mm.

CEYLON: Bogawantalawa, 4900–5200 ft., iii.–iv. 1882 (*G. Lewis*).

Type in the British Museum.

Described from one example.

26. Callispa duodecimmaculata, *Chap.*

Callispa duodecimmaculata, Chapuis, C.R. Soc. Ent. Belg, xix, 1876, p. 17.

Body oblong, pale yellow; the antennæ, twelve spots on the elytra, the sides of the sterna and the legs black; the mouth-parts blackish.

Head almost impunctate, or very minutely punctate, but owing to a peculiar transparency of the surface these fine punctures are not easily seen; it is produced between the bases of the antennæ. The antennæ are slightly thickened towards the apex; the first joint is small, the second larger, the third almost equal to the first; the joints are punctate and pubescent, the apical five more so. *Prothorax* broader than long, parallel-sided, towards the apex widely rounded; the anterior margin is widely concave, with the angles acute, the posterior margin sinuate. The upper surface has a peculiar transparency, and is uniformly convex from side to side, and strongly punctate except at the anterior border and along the median longitudinal line. *Scutellum* quadrate, smooth, impunctate, the apex rounded; colour black, with a brownish spot in the middle. *Elytra* broader than the prothorax, the sides subparallel. On each elytron, besides the scutellar row of punctures, there are eight rows at the base and ten in the middle; towards the sides the punctures are stronger and larger, the interstices showing signs of being slightly raised. There are twelve roundish black spots on the elytra disposed as follows:—two on the suture, one behind the scutellum and the other a little distance from the sutural apical angle, the former being the larger; five on each elytron: the first is on the humeral callus; the second in the same transverse line as the first sutural spot (it is the smallest spot in the specimen before me); a little behind the second spot lies the third, which covers about ten punctures of the sixth, seventh and eighth rows (it is the largest spot in the specimen before me); the fourth is situated more towards the suture and covers about four or five punctures of the third and fourth rows; the fifth spot lies in the same longitudinal line as the first three spots and covers about eight punctures of the seventh, eighth and ninth rows. *Underside* pale yellow, except the lateral borders of the sterna and the legs. The tarsi of the fore legs are larger than the middle and hind ones; the claw-joint hardly projects beyond the lobes of the third joint.

Length, 6 mm.

Bombay Presidency (*Lieut. Hobson*).

Chapuis described this species from one example obtained from the Philippine Islands, he records the length of the beetle as 4 mm. The specimen before me, which is from Bombay, measures 6 mm.; otherwise it agrees well with the description.

27. Callispa octopunctata, *Baly*.

Callispa octopunctata, Baly, Cat. Hisp. 1858, p. 8.
C. octopunctata, var. *sexmaculata*, Weise, Deut. Ent. Zeits. 1905, p. 113.

Body oblong, fulvous; the eyes, antennæ and eight spots on the elytra black.

Head smooth, somewhat convex above, slightly produced between the bases of the antennæ, and acutely angled in front. The antennæ are black, of uniform thickness throughout, with the apex pointed; the third joint is shorter than the first two together; all the joints are punctate and more or less hairy. *Prothorax* quadrate, broader than long, the sides nearly parallel, slightly narrowed in front, indistinctly margined and scalloped. The upper surface deeply impressed with four large and coarsely

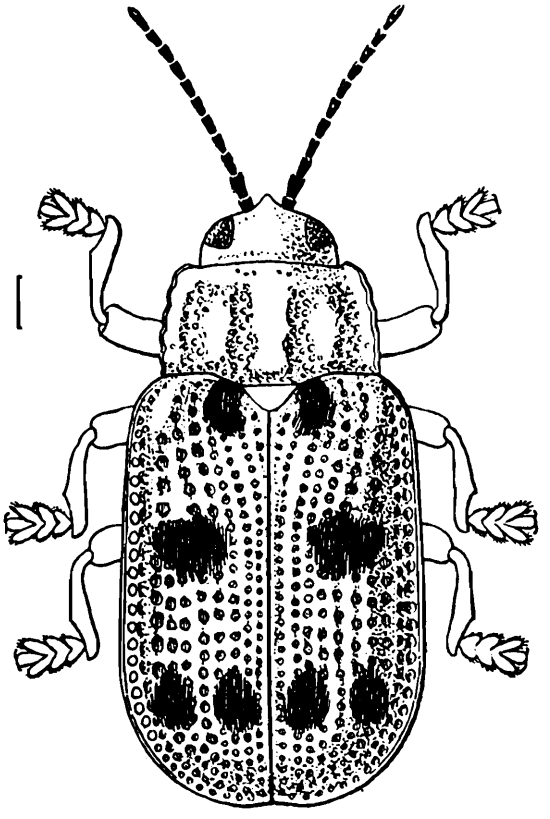


Fig. 16.—*Callispa octopunctata*, Baly.

punctured longitudinal foveæ. *Scutellum* smooth, impunctate, the apex broadly rounded. *Elytra* rather broader than the base of the thorax, the sides almost parallel, slightly dilated posteriorly, narrowly margined, the apex obtusely rounded. The surface is deeply punctate-striate; a short scutellar row of about four punctures, and eight rows of punctures at the base, which increase to ten in the middle; towards the apex the third to seventh rows converge. On each elytron there are four nearly round black

spots disposed as follows:—a small one at the base near the scutellum, a larger one just before the middle, and the other two placed transversely halfway between the middle and the apex. *Underside* entirely fulvous.

Length, 5 mm.

CEYLON (*Thwaites*).

Type in the British Museum.

28. **Callispa septemmaculata**, *Weise.*

Callispa septemmaculata, Weise, Stett. Ent. Zeit. lxix, 1908, p. 213.

Body oblong, pale fulvous; the antennæ, seven spots on the elytra and the lateral borders of the underside of the thorax are black; two longitudinal vittæ in the middle of the pronotum are dark.

Head smooth, acutely produced between the bases of the antennæ; the eyes dark. The antennæ are uniformly thick throughout, punctate, the apex blunt; the third joint is nearly as long as the first and second together. *Prothorax* almost as long as broad, the sides gently convex, indistinctly margined and scalloped. The surface is depressed on both sides, convex in the middle, impunctate except for a few punctures roughly in two longitudinal rows; these punctures have black centres. *Scutellum* smooth, impunctate, with the apex rounded. *Elytra* slightly broader at base than the prothorax, almost parallel-sided, slightly dilated posteriorly, with the apex rounded. The surface is punctate-striate, with a short scutellar row of punctures, and nine rows in the middle and at the apex. There are seven black spots on the elytra, disposed as follows:—one on each side of the scutellum, posterior to these and a little nearer each side a pair of rather large elongate spots, behind the middle on the suture a large almost heart-shaped spot, which covers a large portion of each of the elytra, in the same transverse line with this a pair of obliquely elongate spots (one on each elytron) which extend to the explanate margins of the elytra. *Underside*: on each side, from the base of the metathorax to the eyes is a black stripe; the rest has the same yellowish colour as the upper side.

Length, 5 mm.

MADRAS: Nilgiri Hills.

Type in Mr. H. E. Andrewes' collection, London.

29. **Callispa vittata**, *Baly.*

Callispa vittata, Baly, Cat. Hisp. 1858, p. 7; Weise, Deut. Ent. Zeits. 1905, p. 114.

Body elongate, moderately convex, pale shining fulvous; the antennæ, eyes, mandibles and a vitta on each elytron are black, the tarsi and the articulation of the tibiæ and femora fuscous.

Head smooth, impunctate, and produced between the bases of the antennæ. The antennæ are of uniform thickness throughout, punctate, slightly hairy; the first joint is very small, the second a little longer, the third almost equal to or a little shorter than the first and second together. *Prothorax* quadrate, slightly narrowed in front, the sides margined, the anterior angles rounded, the posterior right angles. The surface has a shallow depression on each side containing some coarse punctures, the central area being more or less convex, with only a few scattered punctures and a faint median line; in the central line immediately in front of the basal margin is a small, deeply impressed, transverse fovea. *Scutellum* rectangular, smooth, impunctate. *Elytra* rather broader than the base of the prothorax, narrowly margined, parallel-sided, the apex rounded; the suture is slightly raised towards the apex. The surface is regularly punctate-striate, with a scutellar row of punctures, ten rows in the middle and eight at the base: the interstices are smooth and impunctate. On each elytron is a broad black vitta, extending from just below the base nearly the whole length of the disc, its apex curving slightly inwards. *Underside* pale fulvous.

Length, $5\frac{1}{2}$ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in the British Museum.

Weise remarks that one example from Kanara has the elytra entirely yellow.

30. Callispa maculipennis, *Gestro.*

Callispa maculipennis, Gestro, Ann. Mus. Civ. Genova, 1911, p. 14.

Body oblong, shining, pale fulvous; the apex of the head and a median indistinct band on the thorax smoky; the eyes, antennæ, spots and a broad longitudinal band on each elytron black; the sides of the thorax beneath, the coxæ, apices of femora and tibiæ and the whole of the tarsi fuscous.

Head smooth, impunctate, and acutely produced between the bases of the antennæ. The antennæ are long, gradually dilated towards the apex, punctate and slightly hairy; the first joint is very small, the second longer than the first but smaller than the third, the apical joint blunt. *Prothorax* broader than long, quadrate, the anterior angles rounded, the posterior right angles, the lateral margins almost straight and scalloped. The surface has a depression on each side containing some deep coarse punctures; a few similar punctures along the longitudinal median smoky band. *Scutellum* brown, deeply depressed at base, spatulate, narrowed in the middle, the apex rounded. *Elytra* broader at the base than that of the prothorax, almost parallel-sided, slightly dilated posteriorly, the suture raised towards the apex. The surface is deeply punctate-striate with a scutellar row of about four punctures, ten rows in the middle of each elytron

and eight at base; the punctures of the first two rows are less deep and broad than those of the other rows. Each elytron is marked with black patches in three longitudinal lines as follows:—commencing with the suture as the first line there is an elongate streak on the raised portion of the suture; in the second line there are three patches, the first on a callosity close to the scutellum, immediately posterior to this and a little deviated to the outer side is the second, which is small (covering about six or seven punctures) and confluent with the broad band on its outer side, the third patch is some distance behind the second and is larger and more or less round; on the third longitudinal line commencing from the humeral callus is a broad band which extends, in the middle, to the explanate portion of the elytra but does not cover the margin, but at the apex it extends not only to the explanate portion but covers the margin also; at the point near the third patch on the second longitudinal line there is a break in the blackness of the band.

Length, $4\frac{1}{3}$ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection; cotype in the Genoa Museum.

31. **Callispa angusticollis**, sp. nov.

Body oblong-ovate; the head, antennæ, prothorax, elytra (except a few patches at the sides and apex), sterna, tarsi and the articulation of the femora and tibiæ, black; the rest of the body yellow.

Head smooth, impunctate, with a faint depression on the vertex, and slightly produced between the antennæ. The antennæ are very slightly thickened towards the apex, being punctate and pubescent; the first joint is small, the second longer, the third longer than second but shorter than first and second together. *Prothorax* longer than broad, narrowed anteriorly, the lateral margins faintly scalloped, the anterior and posterior angles acute. The upper surface is convex in the middle, being slightly depressed on each side and also in front of the base; there are a few punctures in the lateral depressions and on the convex surface. *Scutellum* quadrate, smooth, impunctate. *Elytra* broader at base than the prothorax, parallel-sided, but just a little widened towards the apex. The punctures are irregular, and stronger at the sides, there being no definite rows except two or three near the suture; the scutellar row is represented by two or three punctures. On each elytron there are two yellow patches at the sides, and two smaller roundish ones in the middle; the apex is yellow, the boundary line between the black and the yellow being irregular. *Underside* smooth, shining, impunctate. The sterna, coxæ and the articulation of the femora and tibiæ are black; the abdomen and legs yellow. The claw-joint projects beyond the lobes of the third joint.

Length, 4 mm.
MADRAS: Nilgiri Hills (*H. L. Andrewes*).
Type in Mr. H. E. Andrewes' collection, London.
Described from one example.
It differs from *C. maculipennis*, Gestro, in the form of the prothorax and in the irregular punctures on the elytra. In *C. maculipennis* ten regular rows can be counted.

32. Callispa expansicollis, sp. nov.

Body oblong-ovate; yellow, with black markings on the elytra and prothorax; the antennæ black.
Head bluntly produced between the antennæ; the interocular space smooth, finely punctate and with a faint longitudinal impression in the middle. The first joint of the antennæ is very small, the second joint as long as the third, and all the joints punctate and pubescent. *Prothorax* with the margins of the lateral expansions scalloped, yellow, and bearing a few punctures. The central area is convex, depressed at the base, with a longitudinal impunctate yellow space in the middle; on either side of this the surface is black and deeply punctate. *Scutellum* quadrate, smooth, impunctate, the apex rounded. *Elytra* broader than the prothorax, slightly dilated towards the apex. On each elytron, besides the scutellar row of punctures, there are eight rows at the base and ten in the middle. At the centre of the base of the elytra the blackness is much diluted; on each elytron a broad band runs from the margin below the humeral callus, curving inwardly, and ends on the margin at the external apical angles; there is a round spot towards the apex between the suture and the broad black band. *Underside* light yellow, smooth, impunctate. The tarsi are slender, the claw-joint projecting beyond the lobes of the third joint.
Length, 5 mm.
ASSAM: Sadiya (*Doherty*).
Type in the British Museum.
Described from one example.

33. Callispa arcana, *Duv.*

Callispa arcana, Duvivier, Ann. Soc. Ent. Belg. xxxvi, 1892, p. 446.

Body oblong, very brilliant reddish-yellow above and beneath; part of the femora, the tibiæ and tarsi blackish; the antennæ, frontal keel, and the anterior part of the head black; the elytra with black spots and stripes as follows: (1) a common median round spot, (2) on each side of the scutellum a small suboval oblique spot, (3) a narrow longitudinal stripe from the humerus to the middle or a little beyond it, and (4) a common patch situated in a semicircle on the convexity of the posterior part and formed

of three coalescent spots, viz., a round one on the suture and a larger round spot on each side of it.

Head reddish, shining; on the front is a small carina or keel forming a rather pointed protuberance between the antennal tubercles; it is black, like the front part of the head. The antennæ reach beyond the base of the prothorax and are entirely black; the first joint is very short, the third hardly longer than the second, the following short and intimately connected, the last joint slightly elongate. *Prothorax* one and a half times as broad as long. The upper side is convex, subdepressed laterally, the anterior border feebly emarginate, with the anterior angles slightly produced and pointed; the sides are undulated, rounded in front and straight behind, the base distinctly sinuate on each side. The surface is marked by an irregular longitudinal depression on each side of the disc forming a fovea near the posterior angles and carrying an impression to the front of the scutellum; on the disc are two longitudinal lines formed by three or four large punctures; there are also some punctures on the sides. *Scutellum* small, tawny. *Elytra* broader than the prothorax at the base; feebly depressed transversely a little in front of the middle. On each elytron there are ten rows of coarse and dark punctures, the sixth and seventh rows being interrupted in their anterior portion; the punctures at the apical part are feebler, those of the submarginal series coarser, forming a furrow.

Length, $4\frac{1}{2}$ mm.; breadth, $2\frac{1}{5}$ mm.

W BENGAL: Konbir (*P. Cardon*).

Type in the Brussels Museum.

34. **Callispa dimidiatipennis**, *Baly*.

Callispa dimidiatipennis, Baly, Cat. Hisp. 1858, p. 7; id., Ann. Mus. Civ. Genova, 1888, p. 654; Gestro, Ann. Mus. Civ. Genova, 1890, p. 231, fig.

Callispa quadricollis, Weise, Deut. Ent. Zeits. 1897, p. 113.

Body elongate, shining rufo-fulvous, the posterior half of the elytra bright metallic blue; the eyes and antennæ black, the latter with the basal joint rufous.

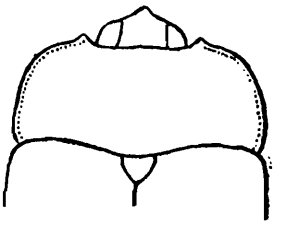


Fig. 17.—Head and thorax of *Callispa dimidiatipennis* (after Gestro).

Head smooth, very minutely punctate, convex above, produced in front between the bases of the antennæ into a tooth-like process. The third joint of the antennæ is as long as the first and second together. *Prothorax* transverse, as broad again as long;

the sides moderately dilated, narrowly margined, straight and parallel behind, rounded in front, in some cases it is widely excavated. The surface is punctate, convex, with an indistinctly raised, impunctate longitudinal line down the middle, depressed and more coarsely and closely punctate laterally, the anterior surface in the middle almost impunctate. *Scutellum* subquadrate, impunctate, its apex rounded. *Elytra* oblong, slightly broader than the thorax, parallel-sided, margined, with the apex regularly rounded. The surface is moderately convex, slightly sinuate near the base, regularly punctate-striate, with a short scutellar row of punctures, eleven rows in the middle and nine at base and at apex; the first two rows are finer than the rest; the punctures become finer also on the blue half of the elytron and tend to coalesce longitudinally, thus making a continuous line. *Underside* fulvous.

Length, 7½–9 mm.

NORTHERN INDIA. ASSAM. BURMA: Thagata, Tenasserim; Bhamo; Gokteik (*H. L. Andrewes*); Paungde; Ruby Mines (*Doherty*).

Type in the British Museum.

This species, of which I have examined twelve specimens, including *C. quadricollis*, Weise, varies considerably in size, colour and structure.

The colour of the anterior part and of the underside may vary from yellow to dark red. The posterior portion of the elytra is always metallic blue, but varies in brilliance; it usually covers half the elytra, as in the type specimen, but may be more or less. The anterior boundary of the blue patch is generally convex; in some specimens (including the type specimen) on each elytron it is produced in the middle.

The shape of the prothorax varies. In the type specimen it is quadrate, almost as long as broad, the basal margin bisinuate, and the lateral margins gradually curved from the base to the anterior angles. The prothorax may appear to be a little broader than long, the lateral margins may be straight from the base to the anterior angles, where they are suddenly rounded. On the elytra the second row of punctures is slightly bent outwards in the middle; this character is not so well marked in some specimens, but evidence of its presence always exists. In other respects no great variation can be noticed.

In Mr. Andrewes' collection of HISPINÆ there were two specimens from Paungde, Burma: one, which was named *dimidiatipennis* by Weise, had the prothorax a little broader than long and the anterior part yellow; the other specimen differed in the shape of the prothorax, and Weise, not having seen the type specimen, considered this sufficient reason for the erection of a new species, *C. quadricollis*. I have compared a cotype of Weise's species with the type of *dimidiatipennis* and I am of opinion that they are the same species.

35. Callispa brettinghami, *Baly*.

Callispa brettinghami, Baly, Trans. Ent. Soc. Lond. 1869, p. 365; Gestro, Ann. Mus. Civ. Genova, 1890, p. 231, fig.

Body elongate, rather broadened posteriorly; the antennæ, prothorax and underside are shining rufo-testaceous; the elytra deep metallic blue with a purplish reflection, frequently stained at the base with rufous, the margins also rufous.

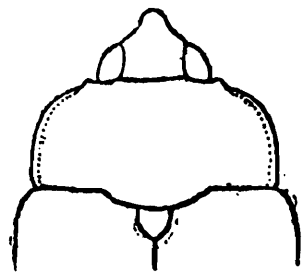


Fig. 18.—Head and thorax of *Callispa brettinghami* (after Gestro).

Head finely punctate, conically produced in front. The mouth-parts are placed in an oblong cavity. The antennæ taper from the base to apex, the third joint distinctly longer than the first two united, the three basal joints sometimes obscure rufous, and more shiny than the rest of the joints, which are more hairy. *Prothorax* twice as broad at base as long; the sides margined, straight and slightly converging from the base to the middle, thence broadly rounded and converging to the apex. The surface longitudinally convex in the middle with the sides depressed and sparsely and coarsely punctate, the middle area less coarsely punctate. *Scutellum* broader than long, smooth and impunctate, the base and sides straight, the apex widely rounded. *Elytra* scarcely broader than the prothorax, parallel-sided, obtusely rounded at apex, slightly depressed posterior to the humeral callus; on each side of the suture posterior to the scutellum is a triangular flattened area. Besides the scutellar row of punctures there are, on each elytron, nine rows of punctures at base and at apex and eleven in the middle; the first two rows and those on the apical portion of the elytra are fine, the rest much coarser. *Underside* rufo-testaceous and punctate.

Length, 8–9 mm.; breadth, 5 mm.

Burma: Upper Tenasserim.

Type in the British Museum.

36. Callispa tarsata, *Baly*.

Callispa tarsata, Baly, Trans. Ent. Soc. Lond. 1869, p. 336.

Body oblong-ovate, sanguineous, shining; the antennæ and eyes black; the posterior three-fourths of the elytra metallic blue; the tarsi broad and fuscous.

Head smooth, shining, finely punctate, the base of interocular space almost as broad as its apex; there is a ridge between the

bases of the antennæ. *Prothorax* almost twice as broad as long, the sides straight, hardly narrowed anteriorly, with the angles rounded, the front margin curved, the posterior margin produced in the middle towards the scutellum. The surface is longitudinally convex in the middle, with the sides depressed and covered with coarse broad punctures, the middle almost impunctate, except for a few scattered and finer punctures. *Scutellum* pentagonal, smooth, very minutely punctate; the punctures can be seen only under a high power. *Elytra* as broad as the base of the prothorax or a little broader, punctate-striate, with a short scutellar row and eleven regular rows of punctures on each elytron; at the base (on the sanguineous part) the punctures are broad and circular, towards the apex (on the blue area) they are finer and elongate. *Underside*: the tarsi dilated.

Length, 8 mm.; breadth, 4·5 mm.

INDIA (*Brettingham*).

Type in the British Museum.

This species is closely allied to *C. brettinghami*, but differs in the following characters:—(1) The third joint of the antennæ is not longer than the first two united; (2) the front is obtuse, abruptly produced in the middle into a short longitudinal ridge; (3) the sides of the prothorax are straight from the base to far beyond the middle, thence abruptly narrowed and rounded to the apex; (4) the scutellum is not broader than long and pentagonal.

37. **Callispa mungphua**, sp. nov.

Body oblong-ovate, broad, shining, dark brown to yellow, the posterior half of the elytra being purple; the antennæ subnitid, black, the third joint as long as first and second combined.

Head smooth, minutely punctate, and sharply produced between the bases of the antennæ. The antennæ are pointed at the apex, punctate, slightly hairy; the first and second joints are equal, third joint the longest, its length being equal to that of the first and second together. *Prothorax* twice as broad as long, the basal margin bisinuate, the front margin broadly sinuate in the middle, the emargination being as broad as the head; the posterior angles are right angles, the lateral margins gradually curved, the anterior angles being widely rounded. The surface convex in the middle, depressed at the sides, with a few scattered and broad punctures in the depressed portions. *Scutellum* triangular, smooth and impunctate, the basal margin almost straight or slightly concave, the apex rounded. *Elytra* as broad at the base as the prothorax, parallel-sided and punctate-striate; the number of rows of punctures cannot be counted owing to some confusion in the lines; the punctures are finer towards the apex than at the base, the interstices being perfectly smooth and flat; the humeral callus is elevated and impunctate. The purple on the apical half of elytra does not cover the margin or the extreme apex, which

are of the same colour as the body. *Underside* smooth, brown to yellow; the last abdominal sternite with a few bristly hairs.

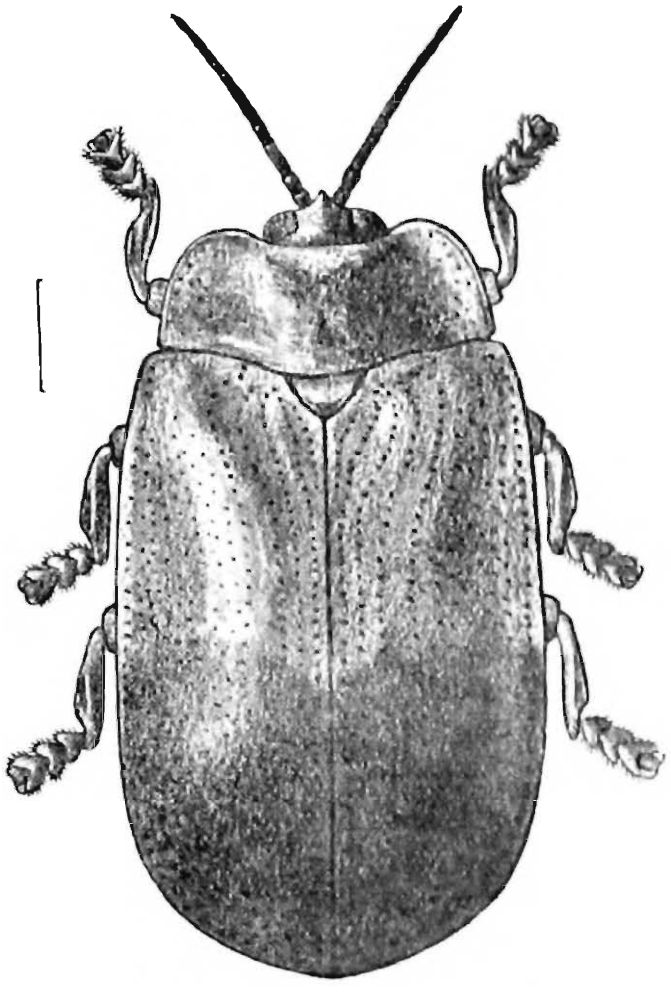


Fig. 19.—*Callispa mungphua*, Maulik.

Length, 9–10 mm.; breadth, 5–5½ mm.
SIKKIM: Mungphu (*Atkinson*).
Type in the British Museum.
Described from two examples.

38. **Callispa hypoenops**, sp. nov.

Body oblong-ovate, subnitid, the prothorax more shining than the elytra; the head, prothorax, scutellum, the basal quarter of the elytra, and the underside are dark red; the antennæ black, the posterior three-fourths of the elytra deep purple.

Head very finely punctate, with a faint impression down the middle, and acutely produced between the bases of the antennæ. The antennæ are of uniform thickness, subnitid, more hairy on the underside than the upper, with rather deep and elongate punctures above, those beneath being less noticeable; the first joint is small, rounded, rufous; second joint longer than the first, the third almost equal in length to the first and second together. *Prothorax* almost twice as broad as long, the basal margin bisinuate, the lateral margins slightly reflexed, straight at

the basal angles and rounded at the anterior angles. The surface is convex in the middle, and there are coarse large round punctures at the sides; in the middle the punctures are finer and fewer, and additional very fine punctures are observable under a high power. *Scutellum* pentagonal, smooth, impunctate; the base and lateral margins straight, the remaining sides curved. *Elytra* as broad at base as the prothorax, punctate-striate, with a depression in the middle of each. Besides the scutellar row of punctures, eleven rows can be counted in the middle and nine or ten at the base of each elytron; the punctures are very large and coarse in the depressions; elsewhere they are finer; under a high power the interspaces are seen to be covered with much finer punctures; the humeral callus is elevated and impunctate. *Underside* shining red; the prosternum is coarsely punctate, the abdominal sternites finely punctate and sparsely covered with brown hair, the last segment being more hairy.

Length, 8½ mm.; breadth, 4½ mm.

ASSAM: Naga Hills (*Doherty*). INDO-CHINA: Ban Pan, Upper Mekong R.

Type in the British Museum.

Described from one example.

39. **Callispa sundara**, sp. nov.

Body broadly ovate, shining; the head, prothorax, half of the elytra and the underside brown; the posterior half of elytra blue-black; the antennæ black.

Head finely punctate, acutely produced between the eyes. The antennæ are of uniform thickness throughout, punctate and pubescent, the apex pointed; viewed from above the first joint is not visible; the third joint is almost equal in length to the first and second together. *Prothorax* broader than long, the lateral margins parallel and slightly scalloped, the anterior angles rounded, the posterior margin bisinuate, and the posterior angles obliquely cut away. The upper surface is sparsely and irregularly punctate, the lateral depressions found in most species are lacking in this. *Scutellum* quadrate, smooth and impunctate, very slightly broader than long, of the same colour as the prothorax. *Elytra* broader than the prothorax, each having a scutellar row of punctures, nine rows at the base and eleven in the middle, the punctures being finer towards the apex; the interstices are quite flat and smooth, that between the tenth and the eleventh rows being wider than the others. *Underside* uniformly brown, smooth, shining; the claw-joint of the tarsus hardly projects beyond the lobes of the third joint, the claws being hidden by the thick pubescence.

Length, 3½–4 mm.

BURMA: Tavoy, Tenasserim (*Doherty*).

Type in the British Museum.

Described from two examples.

The specific name *sundara* is a Sanskrit word meaning beautiful.

40. **Callispa karena**, sp. nov.

Body broad, oblong-ovate; subnitid, the prothorax more shining than the elytra, the underside dull; the head, prothorax, underside and scutellum bright red; the antennæ black; the elytra shining dark blue, with the front margin and the anterior part of the lateral margins red.

Head red, mottled with black, minutely punctate, with a faint longitudinal impression down the middle, and acutely produced between the bases of the antennæ. The antennæ are of uniform thickness throughout, pointed at the apex, generally dull, but shining in certain lights, more hairy on the underside than the upper side, covered with rather elongate and deep punctures throughout, and obscure on the underside; the first joint is small, sometimes rufous, the second longer than the first, the third slightly longer than the first and second together, the other joints as usual. *Prothorax* twice as broad as long, the basal margin almost straight or slightly bisinuate, the anterior margin deeply emarginate, the lateral margins almost straight and slightly reflexed. The surface is convex in the middle, with a shallow depression containing coarse punctures; in the middle the punctures are fewer and finer. *Scutellum* triangular, smooth, impunctate, the base straight, the sides and apex rounded. *Elytra* almost as broad as the prothorax, punctate-striate; after the fourth row of punctures, including the scutellar row, the rows are so confused that it is not possible to count a constant number; the scutellar row joins the first row; at the sides the punctures are rather coarse, elsewhere they are fine; the humeral callus is elevated and impunctate, there being a slight depression in front of it. *Underside* entirely dull red.

Length, 8½–10 mm.; breadth, 5–6 mm.

Burma: Karen Hills (*Doherty*). Indo-China: Tonkin; Houei Ko, Luang Prabang; Laos, Kieng Kwang, 18.iii.1915 (*R. Vitalis de Salvaza*).

Type in the British Museum.

Described from five examples.

41. **Callispa nagaja**, sp. nov.

Body elongate-ovate, shining; the head, prothorax and scutellum dark red; the antennæ black; the elytra bluish purple, and reddish brown at the apex.

Head very finely and sparsely punctate, with a faint line down the middle, and acutely produced between the bases of the antennæ. The antennæ are somewhat attenuated towards the apex, slightly covered with hair and punctate; the third joint is almost as long as the first and second together. *Prothorax* broader than long, the basal margin bisinuate, the lateral margins reflexed and gradually curved. The surface is convex in the middle, with a shallow depression on each side containing few

coarse punctures; the middle and the front are almost impunctate but for some finer punctures, besides which the whole surface is very thinly and finely punctate. *Scutellum* pentagonal, smooth, impunctate. *Elytra* elongate, as broad at the base as the prothorax, the margins reflexed. The surface is punctate-striate, with a scutellar row of punctures, and eleven rows at the middle; there is a depression at the base of the seventh and ninth rows; the rows are coarsely and deeply punctured, becoming deeply striate and finely punctured behind; the interstices are raised, especially towards the apex. *Underside* uniformly dull and dark red. There are a few coarse punctures on the prosternum, the abdominal sternites being very finely punctate.

Length, 8 mm.; breadth, 4 mm.

ASSAM: Naga Hills (*Doherty*).

Type in the British Museum.

Described from one example.

Naga (Sanskrit)=mountain, nagaja=originating in a mountain.

Callispa nagaja and *montivaga* have been taken on two neighbouring hills in Assam. At first I thought they were examples of the same species, but on closer examination I am of opinion that it will be better to keep them separate till more material proves them otherwise. The differences are as follows:—

C. nagaja has a more elongate appearance; the interocular space is narrower and distinctly punctate; the prothorax and underside are dark red, and the elytra bluish purple; the antennæ are uniformly black; the apical margin of the elytra is reddish brown; the abdominal sternites are finely punctate.

C. montivaga appears broader; the forehead is broader and almost impunctate; the prothorax and underside are brighter, and the elytra pure blue; the first, third and fourth joints of the antennæ are partly red; the basal margin of the elytra is red; the abdominal sternites are hairy, with shallow coalescing pits.

42. **Callispa montivaga**, sp. nov.

Body oblong-ovate, shining; the head, prothorax, and scutellum bright red; the antennæ black, with the first joint red at the base, the third, fourth and fifth tinged with red in the middle; the elytra with the basal margin tinged with red.

Head smooth, impunctate, and acutely produced between the bases of the antennæ. The antennæ are attenuated towards the apex, punctate, covered with golden brown hairs; the first three joints are more shiny and less hairy, the third joint equal in length to first and second combined. *Prothorax* quadrate, broader than long, the base bisinuate, the lateral margins reflexed, straight at the posterior angles and rounded in front. The surface is convex in the middle, sloping down to the sides, where there are a few coarse punctures; almost impunctate in the middle, except for a few finer punctures. *Scutellum* pentagonal, smooth and

impunctate. *Elytra* as broad at the base as the prothorax, punctate-striate, with a scutellar row of punctures and ten rows in the middle; the third to ninth rows are slightly depressed at the base, where the punctures are very coarse; elsewhere the punctures are finer; the humeral callus is raised and impunctate. *Underside* uniformly red. There are a few coarse punctures on the prosternum; the abdominal sternites bear shallow pits, which coalesce, and are covered with fine hairs, the last segment showing these characters more prominently.

Length, 8 mm.; breadth a little over 4 mm.

ASSAM: Patkai Hills (*Doherty*).

Type in the British Museum.

Described from one example.

43. **Callispa minor**, *Gestro.*

Callispa minor, Gestro, Ann. Mus. Civ. Genova, 1888, p. 175.

Body ovate, obscure blue, shining; the head and antennæ black, the prothorax red, the scutellum blue with the middle portion red, the underside testaceous.

Head very finely punctate, with a depressed longitudinal middle line on the vertex; the small projection between the antennæ is reddish. The antennæ are black and short. *Prothorax* reddish, quadrate, transverse, at base almost as broad as at apex; the margins are almost straight, the angles (particularly the anterior ones) rounded, the base bisinuate. The surface is longitudinally convex in the middle, depressed at the margins, the convex portion being quite impunctate at the front and along a narrow middle line, the remainder being thinly punctate; the edges, for a long distance, bear thick and deep punctures. *Scutellum* smooth, bright blue like the elytra, reddish in the middle and impunctate. *Elytra* only slightly broader at the base than the prothorax, and slightly and gradually expanded from base to apex. The sculpturing consists of punctate striations, well-marked on the entire area, although the punctures grow considerably finer towards the apex. *Underside* and legs testaceous.

Length, 4–4½ mm.

BURMA: Thagata; Dawna Hills.

Type in the Genoa Museum.

44. **Callispa scutellaris**, *Weise.*

Callispa scutellaris, Weise, Deut. Ent. Zeits. 1897, p. 115.

Body oblong-ovate, convex, black, shining; the prothorax and scutellum obscure metallic blue, the elytra violet.

Head acutely produced between the eyes; seen from above the projection has almost no lateral margins, but is concavely curved. The antennæ are thinner than in *C. bowringi*, especially the second

joint. *Prothorax* broadly rounded before the middle; the surface is strongly depressed on each side, with only a very narrow edge, as in *C. loxia*. *Scutellum* small, broader than long; this is characteristic of this insect as compared with other species of the genus. *Elytra* punctate-striate, the punctures before the middle large. *Underside* pitch-black, the abdomen somewhat brighter; there is a wide rust-coloured lateral border on the prosternum and abdomen, and a narrower one on the meso- and metasterna; the legs are dark rufous.

Length, 5 mm.

BURMA: Tenasserim.

Type in Weise's collection.

Baly describes the legs of *C. bowringi* as rufo-fulvous, but in some specimens they are uniformly black; the present species may also vary in a similar way.

45. Callispa cœruleodorsata, sp. nov.

Body oblong-ovate; the upperside shining blue; the antennæ, legs and underside black.

Head smooth, finely punctate, and very slightly produced into a point between the bases of the antennæ. The antennæ are short, punctate, subnitid, sparsely covered with hair, and of uniform thickness; the last joint is pointed; the first joint small, shining, smooth; the second joint longer and thicker than the first, the third almost equal to the second in length. *Prothorax* quadrate, almost as long as broad, the basal margin bisinuate, the sides straight and parallel; the anterior angles are rounded, the posterior ones right angles. The surface is convex longitudinally in the middle and slopes towards the sides, with intermingled fine and coarse punctures, which are denser at the sides than in the middle; the surface in front is almost devoid of coarse punctures and sparsely covered with fine ones. *Scutellum* triangular, with three deep notches radiating from the centre, one to the apex and the other two to the basal angles. *Elytra* broader at the base than the prothorax, parallel-sided, slightly broadened behind, punctate-striate; on each elytron, besides the scutellar row of punctures, there are ten rows at the base and twelve in the middle; the rows show a certain amount of irregularity so that the above numbers may be higher or lower; on the interspaces, which are smooth, there are finer punctures. *Underside* smooth, shining; there are coarse punctures on the sides of prosternum and at the apex of the metasternum, the rest being sparsely covered with very fine punctures. The underside of the femora is hollowed for the reception of the tibiæ, which are stumpy.

Length nearly 5 mm.; breadth, $2\frac{1}{2}$ mm.

MADRAS: Nilgiri Hills, 5000 ft., v. 1908 (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection, London.

Described from one example.

46. **Callispa minima**, *Gestro.*

Callispa minima, Gestro, Bull. Soc. Ent. Ital. 1902, p. 51.

Body oblong; the head and thorax shining blue-black, the anterior angles of the prothorax fulvescent; the elytra obscure violet, subnitid, the suture at the base being blue-black; the antennæ nigro-piceous, with grey pubescence towards the apex; the underside and legs brown, the abdomen paler.

Head slightly and obtusely produced between the antennæ, very finely punctate, the punctures being closer along the exterior margin of the eyes. The antennæ are rather robust, about one and a half times as long as the head and thorax together, pitch-black, with the last joints covered with fine greyish hairs; the first joint (not quite visible from above, being partly covered by projection of the head) is considerably shorter than the second, which is incrassate at the apex; the third is narrower and a little shorter than the second. *Prothorax* broader than long, the length being a little more than half the width. The margins are straight and converge appreciably forwards, but so very slightly that they almost appear parallel; the anterior angles are broadly and moderately rounded, the anterior margin projecting in the middle, the posterior margin sharply bisinuate. The upper surface in the middle is longitudinally elevated and convex, with a longitudinal depression on each side; along the middle line it is smooth, but at the margins of this line are fine irregular punctures; in the depressions, particularly near the lateral margins, the punctures are very thick. *Scutellum* smooth. *Elytra* broader at the base than the prothorax, and obliquely and strongly depressed near the scutellum; the humerus is markedly prominent; the punctures are elongate in the inner series and rounded in the marginal series; the interstices are very finely rugose on the basal portion.

Length, $3\frac{1}{2}$ mm.

CEYLON: Weligama (*Dr. W Horn*).

Type in the Genoa Museum.

47. **Callispa brevipes**, sp. nov.

Body oblong-ovate; the upper side shining blue, the lateral margins of the prothorax and elytra red-brown; the thoracic sternites, antennæ and legs black, the antennæ and legs being diluted with dark brown, and the venter light brown. The legs, particularly the tibiæ, are short compared with those of other species of the genus.

Head smooth, and finely punctate, with a faint line down the middle, and slightly elevated between the bases of the antennæ; viewed dorsally this elevation is widely rounded. The antennæ are comparatively slender and small, pointed at the apex, punctate, covered with brownish hairs; the first joint is small and rounded, the second joint the thickest, the third almost as long as the

second. *Prothorax* quadrate, nearly as long as broad, the basal margin almost straight, slightly produced in the middle, the lateral margins straight; the anterior angles are rounded, the posterior ones right angles. The surface is convex in the middle, sloping at the sides, a little depressed at base in the middle, punctate, the punctures becoming coarser at the sides than in the middle; in between the coarse punctures there are very fine punctures; the anterior area and a longitudinal median stripe are very finely punctate. *Scutellum* pentagonal, black, smooth, shining and impunctate. *Elytra* shining, punctate-striate; besides the scutellar row of punctures, on each elytron there are twelve rows across the middle, the seventh row commencing at the middle. *Underside* shining, glabrous; the sides of the prosternum and metasternum are coarsely punctate, the venter impunctate, but sparsely covered with minute greyish hairs, which are rather longer and thicker on the last sternite. The legs are short, particularly the tibiæ, which fit into the depressions on the underside of the femora.

Length, 4 mm.

CEYLON (*Thwaites*).

Type in the British Museum.

Described from one example.

48. **Callispa insignis**, *Baly*.

Callispa insignis, Baly, Cat. Hisp. 1858, p. 4.

Body oblong, shining; the head, antennæ and prothorax black, the latter narrowly edged on the sides with dark brown; the elytra bright metallic blue; the underside rufo-fulvous.

Head smooth, shining, convex above, impunctate, produced in front into an acute tooth, which scarcely conceals the insertion of the antennæ. The third joint of the antennæ is longer than the two basal joints united and more slender than the following joints; the whole antenna is punctate. *Prothorax* three times as broad as long, slightly emarginate in front; the sides are dilated, nearly straight behind, rounded anteriorly, narrowly margined. The surface is convex, with a few scattered punctures in the middle, concave and more coarsely punctate on the sides. *Scutellum* smooth, impunctate, the base straight, the sides gradually rounded. *Elytra* broadly oblong, scarcely wider than the base of the prothorax; the sides are slightly curved, subparallel, their margin dilated, deflexed, the apex regularly rounded. The surface is moderately convex, punctate-striate, the puncturing less deeply impressed towards the apex, the side margins irregularly punctate; it is difficult to count the exact number of rows of punctures owing to the fact that in places the puncturing is confused. *Underside* entirely shining, rufo-fulvous.

Length, 9 mm.; breadth, $5\frac{1}{2}$ mm.

NORTHERN INDIA.

Type in the British Museum.

49. **Callispa brevicornis**, *Baly.*

Callispa brevicornis, Baly, Trans. Ent. Soc. Lond. 1869, p. 365; id., Ann. Mus. Civ. Genova, 1888, p. 654; Gestro, Ann. Mus. Civ. Genova, 1890, p. 232, and 1897, p. 42.

Body oblong-ovate; the upper side shining metallic blue, the underside and legs black, the abdomen fulvous.

Head broader than long, smooth, finely punctate and not produced between the bases of antennæ. The antennæ are short, not exceeding the head and prothorax in length, tapering towards the apex, punctate, sparsely covered with hair, the two basal joints less hairy and more shiny on the underside; the third joint is not longer than the first two united, the apical joint pointed. *Prothorax* broader than long, the sides margined and gradually rounded from the base to the apex. The surface is moderately convex with a slight depression on each side, sparsely punctate, the punctures being coarser on the sides than in the middle. *Scutellum* pentagonal, smooth and impunctate, broader than long, the base and sides straight or feebly concave. *Elytra* almost as broad at the base as the prothorax, parallel-sided, with the apex rounded, punctate-striate. Besides the scutellar row of punctures, on each elytron eight rows can be counted at the base and ten in the middle; between the tenth row and the margin the punctures are confused and coarser, those of the first two rows and of the posterior portion being finer.

Length, 6 mm.; breadth, 4 mm.

BURMA: Shwegu-myo, x. 1885; Forest of Si-Rambe, xii. 1880. MALAY STATES: Penang.

Type in the British Museum.

50. **Callispa assama**, sp. nov.

Body ovate, rather broad, blue; the antennæ, sternum and legs black; the abdomen brown.

Head produced between the antennæ as a blunt cone, the interocular space finely and sparsely punctate. The antennæ are narrowed towards the apex, the first two joints being stouter than the others; the third joint is shorter than the first and second together; all the joints are punctate and pubescent. *Prothorax* almost three times as broad as long, the sides uniformly curved and broadly margined, the front margin touching the eyes, the basal margin bisinuate. The surface is convex in the middle and slopes down on each side, with scattered and strong punctures, except on the anterior border and a narrow longitudinal space down the middle line. *Scutellum* broader than long, extremely finely punctate, the apical margin broadly rounded, the basal margin broadly concave. *Elytra* hardly broader than the prothorax, the sides quite parallel, broadly rounded at the apex. On each elytron, besides the scutellar row of punctures, there are

ten rows at the base and eleven in the middle; at the sides the punctures are stronger and larger and the rows are a little confused; the interstices are slightly raised; the rows meet in pairs towards the apex. *Underside* smooth, subnitid; the abdomen finely punctate. The legs are short and stumpy, the claw-joint hardly projecting beyond the lobes of the third joint.

Length, 6 mm.

ASSAM (*Doherty*).

Type in the British Museum.

Described from one example.

51. Callispa loxia, *Ws.*

Callispa loxia, Weise, Deut. Ent. Zeits. 1897, p. 114.

Body oblong-ovate, convex; the upper side shining blue-black, the underside piceous; the legs, margins of prothorax and elytra, sternum and abdomen ferruginous; the antennæ short and black.

Head produced between the eyes, the apex of the produced part rounded, the interocular space is slightly punctate. In the specimen before me the eyes are brown margined with blue. The antennæ are of uniform thickness throughout, sparsely covered with brown hairs; the first joint is small and rounded, the second and third almost equal in length. *Prothorax* broader than long, gradually narrowed towards the front, the lateral margins widely curved. The surface is depressed at the sides, irregularly punctate, longitudinally impressed with a faint line down the middle. *Scutellum* broader than long, impunctate, the basal margin straight, the lateral margins widely curved towards the apex. *Elytra* broader at the base than the prothorax, punctate-striate, with a scutellar row of punctures and eleven complete rows; the punctures towards the margins and the apex are coarser than the rest; the interstices are flat, the humeral callus smooth and impunctate.

Length, 5 mm.

BURMA: Paungde.

Type in Weise's collection; cotype in the British Museum.

Similar to *C. brevicornis*, but differing in having (1) the antennæ longer, and the interantennal portion produced; (2) the prothorax much narrower in front; (3) the margins of the prothorax and elytra ferruginous; (4) the sculpturing different.

52. Callispa feæ, *Baly.*

Callispa feæ, Baly, Ann. Mus. Civ. Genova, 1888, p. 654; Gestro, Ann. Mus. Civ. Genova, 1890, p. 232.

Body oblong, subdepressed, shining metallic blue; the prothorax with a brassy tint; the antennæ, scutellum and underside black; the abdomen, femora and tibiæ rufo-fulvous.

Head acutely produced, the vertex smooth and impunctate. The antennæ are nearly half the length of the body. *Prothorax* twice as broad as long, the sides rounded posteriorly, obliquely converging and slightly rounded from the middle towards the apex; the anterior angles are obsolete, the anterior margin narrowly sinuate. The upper surface is moderately convex, distinctly excavated and rather strongly punctate on either side, the middle disc being nearly impunctate. *Elytra* scarcely broader than the prothorax, more than twice its length, nearly parallel-sided, the apices being conjointly and broadly rounded. The surface is transversely convex, transversely depressed below the basal space, strongly punctate-striate; the striæ are subsulcate and less strongly punctate on the hinder disc.

Length, 5 mm.

BURMA: Karen Hills, 3000–3700 ft. (*L. Fea*).

Type in the Genoa Museum.

Closely allied to *C. bowringi*, but broader than that species.

The colour of the legs is variable; in some specimens it is like that of the type, namely, the femora and tibiæ are yellowish and the tarsi black; in others the legs are entirely black; or the tarsi are reddish and the rest of the leg black; or again, only the upper part of the femora may be black. The abdomen is generally yellow, but in some specimens there is a median black band. The width of the prothorax also varies.

This species was found by Fea on the underside of the leaves of bamboo.

Genus **AMBLISPA**, *Baly*.

Amblispa, Baly, Cat. Hisp. 1858, p. 10, pl. i, f. 3; Chapuis, Gen. Col. xi, 1875, p. 271.

GENOTYPE, *Amblispa dohrni*, Baly.

Body elongate, oblong or oblong-ovate, convex. Colour blue or blue-black, or sometimes black with a greenish tinge; in the type species the elytra are brassy green, and the head and thorax bright red. *Head* convex above, slightly produced between the antennæ; eyes small, much smaller than those of *Callispa*, and also less convex, being quite flat in some species. The structure of the antennæ is similar to that of *Callispa*, the third and last joint being longer than others. The terminal joint of the labial palpi, in the type species at least, is more enlarged and truncate than that of the type species of *Callispa*, but this character is variable and therefore cannot by itself distinguish the genus. *Prothorax* subquadrate, not dilated laterally, the upper surface without depressions. *Elytra* oblong-elongate, convex, with the apex rounded, punctate-striate and smooth, without ribs or rugosity. *Underside*: the fine line dividing the first and second abdominal sternites is plainly visible; in *Callispa* this line is wanting in the middle of the sternites.

In addition to the distinctions mentioned above, *Amblispa* differs from *Callispa* in that the prothorax bears no depressions and its sides are not dilated. These characters taken together will make it easy to distinguish one genus from the other; but one character by itself is not sufficient for this purpose.

Only three species have been described under this genus, two of which occur within our faunistic region, and the third in Africa.

Key to the Species.

1. The head and prothorax bright red, elytra brassy green ... ... *dohrni*, Baly.
1'. Insect entirely shining blue-black *lævigata*, Guérin.

53. Amblispa dohrni, *Baly.*

Amblispa dohrni, Baly, Cat. Hisp. 1858, p. 12, pl. iv, f. 3.

Elongate, convex above, shining black; head and prothorax bright red; elytra brassy-green.

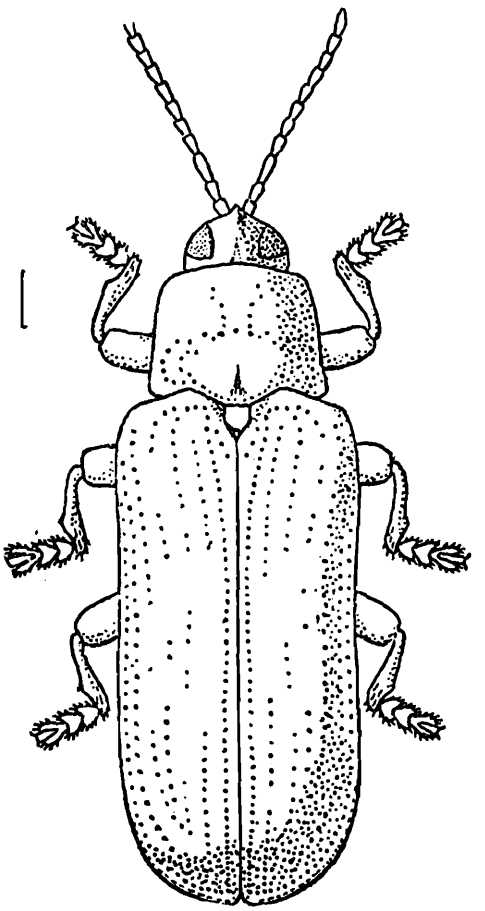


Fig. 20.—*Amblispa dohrni*, Baly.

Head smooth, convex above, produced in front into an acute longitudinal ridge which separates the antennal cavities. The eyes

being small the space between them is broad. The antennæ are rather longer than the head and thorax, black, rough and sparsely covered with bristles; the third joint is longer than the others, except the last, which is the longest and bluntly pointed. *Prothorax* quadrate, a little longer than broad, slightly narrowed anteriorly, moderately convex, the lateral margins subparallel, the anterior margin rounded, the posterior margin bisinuate; the anterior angles are rounded, the posterior ones acutely pointed. The surface is punctate, except the anterior margin and an indistinct raised line down the centre of the disc, which are smooth and impunctate. *Scutellum* quadrate, shining black, impunctate, with the apex rounded. *Elytra* rather broader than the base of the thorax, parallel-sided; the apex rounded. The surface is convex and deeply punctate-striate; besides the short scutellar row of punctures on each elytron, there are eight rows at the base and ten in the middle, where the sixth and seventh rows commence; all these rows of punctures meet at the apex in pairs; the elytra are smooth, without costæ. *Underside* shining black, the head, anterior coxæ and sternum bright red. In some specimens the anterior pair of femora are a little thicker than the others.

Length, $5\frac{1}{2}$ mm.

CEYLON.

Type in the British Museum.

54. **Amblispa lævigata**, *Guér.*

Microrhopala lævigata, Guérin, Icon. Règne Anim., Ins. 1844, p. 278.
Amblispa lævigata, Baly, Cat. Hisp. 1858, p. 12; Weise, Deut. Ent. Zeits. 1905, p. 114.

Body elongate-ovate (more ovate than *A. dohrni*), moderately convex, shining, obscure blue-black.

Head (viewed dorsally) broadest in the middle, narrowed anteriorly and posteriorly, finely punctate, varying in colour and also in convexity, depressed round the roots of the antennæ; eyes small, not convex. The antennæ as in *Callispa*, punctate, sparsely covered with hair, the third and last joints longer than the others. *Prothorax* quadrate, as broad as long, gradually narrowed from the base to the apex; the sides rounded, the posterior and anterior angles acute, the anterior margin slightly emarginate in the middle, a small depression in the middle at the base. The upper surface is punctate, the punctures being coarser near the base than in front; a more or less broad area on the anterior margin and an ill-defined longitudinal area down the middle are smooth and without coarse punctures; besides these punctures the whole surface is very minutely and finely punctate; the coarse punctures are sometimes numerous. *Scutellum* elongate, pentagonal, smooth, impunctate. *Elytra* hardly broader at the base than the prothorax, punctate-striate, with a scutellar row of punctures, nine additional

rows at the base, and eleven in the middle, including the extreme marginal row; the rows meet towards the apex, the space between the fourth and fifth being greater than that between any other two adjoining rows; besides these punctures the whole surface is minutely and finely punctate, the interstices being plane and smooth. *Underside* of the same colour, smooth and shining.

Length, 5½–6 mm.

N. INDIA (*Baly*). BENGAL: Calcutta, 13. viii. 1907 (Indian Museum). BOMBAY: Belgaum (*H. E. Andrewes*).

Type probably in the Paris Museum.

A. lævigata var. **viridis**, nov.

There is one example before me which has a greenish sheen on the upper surface, the underside being black, with a purplish sheen and more shiny than the upper side. The abdominal sternites bear depressions at the sides, which are more distinct on the first two than on the rest. I have separated this as a definite variety for two reasons, viz.:—the interspaces between the rows of punctures are more raised than those of *A. lævigata*, and the eyes are a little larger.

Length, 5 mm.

SOUTH INDIA: Trichur, Cochin State, 3000 ft., 1–4. x. 1914 (*F. H. Gravely*).

Type in the Indian Museum.

A. lævigata var. **purpurascens**, nov.

Insects with a purplish sheen, the underside being of the same colour and dull. The interspaces between the rows of punctures are more raised or prominent than those of *A. lævigata*.

CEYLON (*Thwaites*). UNITED PROVINCES: Ranikhet, vi–viii. 1916 (*H. G. Champion*).

Type in the British Museum.

Described from two examples. The Ranikhet specimen has the sides of the prothorax straighter than in the other.

Genus **MELISPA**, *Weise*.

Melispa, Weise, Deut. Ent. Zeits. 1897, p. 115.

GENOTYPE, *Melispa andrewesi*, Weise.

Body oblong, narrowed in front, not convex. Prothorax subquadrate, almost truncate anteriorly, the sides slightly convergent in front; the surface not convex, and with four longitudinal depressions. Scutellum triangular. Elytra ovate, somewhat slightly depressed towards the apex, which is widely rounded. Prosternum subconvex. As in *Callispa*, the first two abdominal sternites are fused together so that the suture between them is wanting in the middle. The forehead is produced between the antennæ; the eyes are convex; the antennæ are as

long as the head and prothorax together, fairly thick, not incrassate or attenuated towards the apex, joints 3 and 11 being longer than the remainder

Range: India and Java.

The differences between *Callispa* and *Melispa* are shown as follows:—

In the former the mouth-parts are placed in a cavity, the sides of which touch the eyes; the projection between the antennæ is thin and plate-like, and bifurcating ventrally to the roots of the antennæ, forms the anterior boundary of the oral cavity; *the scutellum is generally pentagonal or nearly so.*

In *Melispa* the mouth-parts are not placed in a cavity, but elevated, the eyes being far removed from them; the projection between the antennæ is thick and rounded, and bifurcates into two broad clubs; *the scutellum is triangular.*

Only two species have been recorded as belonging to this genus, viz.:—*M. andrewesi*, Weise, and *M. cassidoides*, Guér., from Java.

55. Melispa andrewesi, *Ws.*

Melispa andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 116.

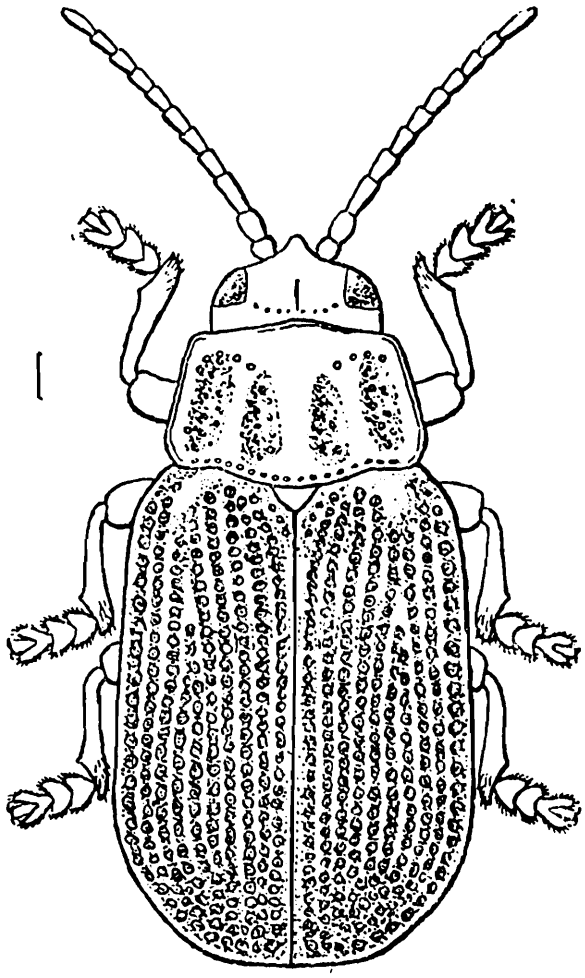


Fig. 21.—*Melispa andrewesi*, Weise.

Oblong, narrowed in front, slightly dilated behind; testaceous, the antennæ ferruginous.

Head produced between the antennæ, with a slight depression on the forehead, which is sparsely and finely punctate. The antennæ are of the same thickness throughout, thinly covered with fine hairs; the first two joints are more or less rounded at the apex, the third and eleventh longer than the rest, the eleventh bluntly pointed; all the joints except the last have darker rings at the apex. *Prothorax* almost as broad as long, narrowed anteriorly, the sides margined; there are four longitudinal depressions on the surface, which contain a few more or less coarse punctures, the rest of the surface being smooth, without any punctures. *Scutellum* small, smooth, triangular, with the apex rounded. *Elytra* at the base hardly broader than the prothorax, slightly broadened towards the apex, the margins edged. Only three punctures constitute the scutellar row, and besides this on each elytron there are ten rows of coarse punctures, the sixth and seventh anastomosing in the middle, the ninth and tenth being coarser and more confused. *Underside* testaceous, smooth, impunctate.

Length, 3·8 mm.

MADRAS: Madura.

Type in Mr. H. E. Andrewes' collection.

Genus **LEPTISPA**, *Baly*.

Leptispa, Baly, Cat. Hisp. 1858, p. 1, pl. i, f. 1; Chapuis, Gen. Col. xi, 1875, p. 270; Weise, Ins. Deutschl. vi, 1893, p. 1060; Péringuey, Ann. S. Afr. Mus. 1908, p. 332.

Leptomorpha, Germar, Faun. Ins. Eur. 22, 1842, nr. 10.

Parallelispa, Fairm. Ann. Soc. Ent. Fr. (5) vi, 1876, p. 238; Gestro, Ann. Mus. Civ. Genova, 1909, p. 226.

Paradownesia (Gestro), Maulik, Ann. Mag. Nat. Hist. July 1917, p. 130.

GENOTYPE, *Leptispa filiformis*, Guérin (Europe).

Elongate and very narrow insects, parallel-sided, cylindrical; colour generally dark blue-green, black and yellow. *Head* elongate, narrowed behind the eyes, free from the prothorax. Antennæ 11-jointed, short, club-shaped, gradually thickened towards the apex; first joint very thick, the largest, its apex being sometimes drawn into a blunt point ventrally; the apical four or five joints form a thick club. Eyes larger than those of *Amblispa*. Clypeus porrect, more or less triangular, covered with long hairs. *Prothorax* quadrate, generally longer than broad, the anterior angles generally rounded and the posterior acute; upper surface convex, without depressions. *Elytra* punctate-striate, with eleven rows of punctures, including the scutellar row. *Legs* short and stumpy; the tibiæ are generally emarginate at the apex outwardly; the fourth, or the claw-joint, of the tarsus extends beyond the third; the claws are free, and viewed dorsally are distinctly visible.

Range. South Europe, Africa, Asia.

There are twenty-seven species so far found in all parts of the world, including those of *Paradownesia*, of which only seven occur within our faunistic region.

Key to the Species.

1.	Upper side deep metallic green, underside black.	*pygmæa*, Baly, p. 76.
1′.	Upper side not deep metallic green .	2.
2.	Insect entirely black .	3.
2′.	Insect not entirely black	4.
3.	Insect very elongate, narrow (length 6 mm.); elytra dehiscent at the sutural angle, with the fourth to eighth rows terminating against the third row	*samkirna*, sp. n., p. 79.
3′	Insect not very elongate (4·5 mm.); elytra not dehiscent, the rows meet in pairs on the apical surface .. .	*nigra*, Ws., p. 78.
4.	Insect black, with the prothorax red	5.
4′.	Insect partly black, with the prothorax not red . .	6.
5.	Underside rufo-testaceous; length 8½ mm.	*longipennis*, Gestro, p. 81.
5′.	Underside black; length 6 mm. .	*rufithorax*, sp. n., p. 78.
6.	Yellow, shining, apical third of the elytra black; length 8-9½ mm. .	*distincta*, Gestro, p. 81.
6′	Black, underside pale testaceous, an oblique area on the anterior surface of the elytra rich reddish yellow-brown; length 6 mm.	*latifrons*, Ws., p. 82.

56. **Leptispa pygmæa**, *Baly*.

Leptispa pygmæa, Baly, Cat. Hisp. 1858, p. 2; Lewis, Ent. Mo. Mag. 1888, p. 94; Barlow, Ind. Mus. Notes, iv, 1899, p. 122, pl. xi, f. 2; Gestro, Bull. Soc. Ent. Ital. 1902, p. 51; Maulik, Rec. Ind. Mus. 1913, p. 117.

Body narrow, elongate, cylindrical, very slightly constricted in the middle; colour deep metallic green, shining; the underside black.

Head covered above with irregular punctures. The antennæ, as compared with the length of the body, are short, reaching about the middle of the prothorax, sparsely covered with whitish hairs; the basal joint is the thickest and longest, compressed and dilated externally at its apex, truncate; the second joint smaller than the first, but longer than the third, fourth, fifth or sixth, these latter joints being more or less equal, and together forming the thinnest part of the antennæ; seventh to eleventh gradually dilated towards the apex, the apical joint bluntly pointed. *Prothorax* subquadrate, longer than broad, very slightly widening anteriorly; the sides straight and parallel, rounded near the apex, narrowly margined; the anterior margin indistinctly produced and rounded, the posterior angles acute. The upper surface is convex, coarsely punctured all over, the punctures not very crowded. *Scutellum* small, black, impunctate, broader at base than at apex, which is rounded. *Elytra* scarcely broader than the prothorax, the sides parallel, the apex less acute. On each

elytron, besides the scutellar row of punctures, there are ten regular, more or less parallel rows; at the constricted part of the elytra the rows bend slightly inwards. The humeral callus, between the fifth and eighth rows, is raised, impunctate and elongate; the interspaces at the apex and those between the eighth and ninth, and ninth and tenth rows are more or less

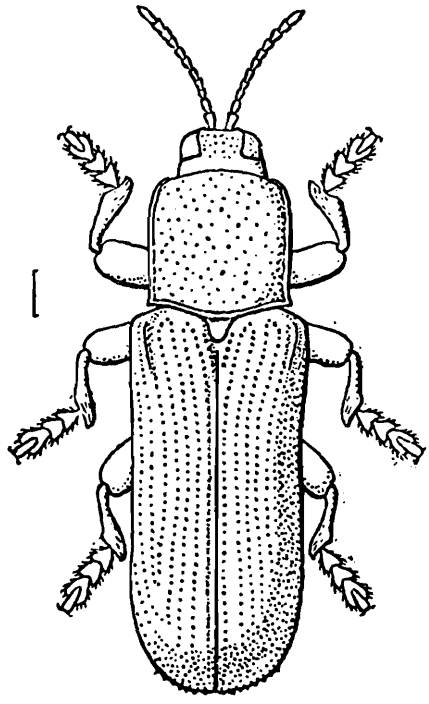


Fig. 22.—*Leptispa pygmæa*, Baly.

raised; posterior to the middle of the body the suture is also a little raised. *Underside* entirely black, thickly covered with short whitish hairs. Viewed laterally and ventrally, the lateral edge of each elytron expands inwardly. The expansion is broad at the base of the elytra and gradually diminishes till it vanishes at the point where the elytron bends round towards the suture. The elytra are finely serrate at the extreme apex and also slightly reflexed to the dorsal side.

Length, 4½–5 mm.

CEYLON: Colombo, on coast level, 7–27. iv. 1882 (*G. Lewis*). MADRAS: Ottapalam, Malabar, 7. ix. 1913, on paddy; Shoronore, Malabar, 31. vii. 1907, on paddy; Talipanamba, Malabar, 7. vii. 1909, on paddy (Government Entomologist, Madras); Malhawanaad (Ind. Mus.). BOMBAY: Belgaum (*H. E. Andrewes*); Poona, 4. xii. 1893 (Ind. Mus.).

Type in the British Museum.

Biological Notes.—This species has been destructive to two cultivated plants in India—sugar-cane and rice (paddy).

Mr. George Lewis found this insect in abundance near Colombo, resting on the stems of a small grass just above water. He

observed that if immersed in water they remained quiescent in it. It will be noticed that the underside of this insect has a coating of hair, as in aquatic insects. This semi-aquatic habit gives it an advantage as a pest of such a plant as paddy, which grows in water.

57 **Leptispa nigra**, *Ws.*

Leptispa nigra, Weise, Deut. Ent. Zeits. 1904, p. 436.

Body elongate, parallel-sided, entirely black, subnitid. The prothorax is very gently narrowed in front, with the surface not densely punctate. The elytra are punctate-striate.

Length, 4½ mm.

MADRAS: Pondicherry.

Type in Weise's collection.

In stature and form of the body this species resembles *L. pygmæa*, but in addition to the very distinct colouring, it differs as follows:—

In *L. pygmæa* the prothorax is not narrowed in front, and is coarsely punctate: the rows of punctures on the elytra are not deepened, the punctures themselves being strong, and the interstices are hardly raised at the base. In *L. nigra* the prothorax is narrowed in front and finely punctate; the rows on the elytra are deepened and the punctures fine, the interstices being distinctly raised.

58. **Leptispa rufithorax**, sp. nov.

Body elongate, not so narrow as the other Indian species of the genus, shining; colour black, except the prothorax, which is red, with the anterior edge black, this border sometimes extending backwards.

Head depressed between the antennæ, and also along the middle line for a short distance only; the part between the eyes and the prothorax is convex; the surface is covered with larger and finer punctures, the former being nearer the bases of the antennæ than the latter. The antennæ are punctate, sparsely covered with hairs, the last three joints more thickly so; in other respects as described under the genus. *Prothorax* quadrate, parallel-sided, the anterior angles rounded, the posterior acute and toothed. The surface is generally convex, but on either side of the longitudinal middle line a slight depression can be detected, punctured with larger and finer punctures, the former more or less crowded at the sides; the anterior border and an indistinct narrow portion down the middle line are almost free of punctures. *Scutellum* quadrate, black, impunctate, the apex rounded. *Elytra* scarcely broader at the base than the prothorax, punctate-striate. The scutellar row of punctures longer than that of *L. pygmæa*, a few finer punctures extending it nearly up to the middle of the elytra; there are ten more rows of punctures on each elytron, which are regular and

parallel, and are not bent inwardly as in *L. pygmæa*; the interspaces between the eighth and the ninth rows, the ninth and the tenth, and at the apex, are raised into costæ; posterior to the scutellar row the suture is gently and increasingly raised towards the apex; under a high power a few scattered finer punctures can be seen on the interspaces. *Underside* black, shining, punctate, the abdominal sternites tinged with red; in one example before me this red colour predominates, and even the coxæ and a portion of the femora are tinged with red; it is quite possible that in some cases the whole of the underside may have the red predominating over the black. Viewed laterally and ventrally the lateral edge of the elytra expands inwardly, as in *pygmæa*, but is of almost uniform width from base to apex; the apical edge is reflexed dorsally.

Length, 6 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection, London; cotype in the Indian Museum.

Described from three examples.

59. **Leptispa samkirna**, sp. nov.

Body very elongate, narrow, black, shining.

Head depressed at the bases of the antennæ, with a fine impressed line in the middle from the antennæ to the prothorax; the interocular space is slightly depressed and very closely punctate, the punctures running into each other and giving it a rough appearance. The eyes are large and convex. The antennæ, in the specimen before me, have lost the apical four joints which in other species of the genus form a dilated club; the first two joints are larger and almost equal in length, the third to seventh very short and equal. *Prothorax* oblong, parallel-sided, longer than broad; the lateral margins are strongly reflexed and a little bent down in front, the anterior and posterior margins straight, the latter produced in the middle towards the scutellum, with a depression in the produced part: the anterior angles are right angles, the posterior ones acute. The upper surface is convex, covered with coarser and finer punctures, which are indiscriminately mixed, with a tendency to become elongate. *Scutellum* small, almost oval, shining, impunctate. *Elytra* not broader at the base than the prothorax, punctate-striate, with the scutellar row of punctures long, and ten more parallel rows on each elytron; the interspace between the second and the third rows is broader than that between any other two rows and is of uniform breadth throughout; the interspace between the eighth and ninth rows is very strongly raised into a costa, particularly at the middle; the interspaces between the first and second, and second and third rows run parallel right up to the apex; the fourth to eighth rows terminate against the side of the third row; the rows

of punctures are placed in more or less impressed lines. Viewing the insect sideways so that the light strikes it laterally, it will be noticed that the other interspaces are also gently raised at the base, being more marked at the apex. The lateral margins of the elytra are reflexed, more so at the apex; the elytra are broadly dehiscent at the apex. *Underside* convex, shining, black, sparsely punctate; prosternum not depressed in the middle, with a row of

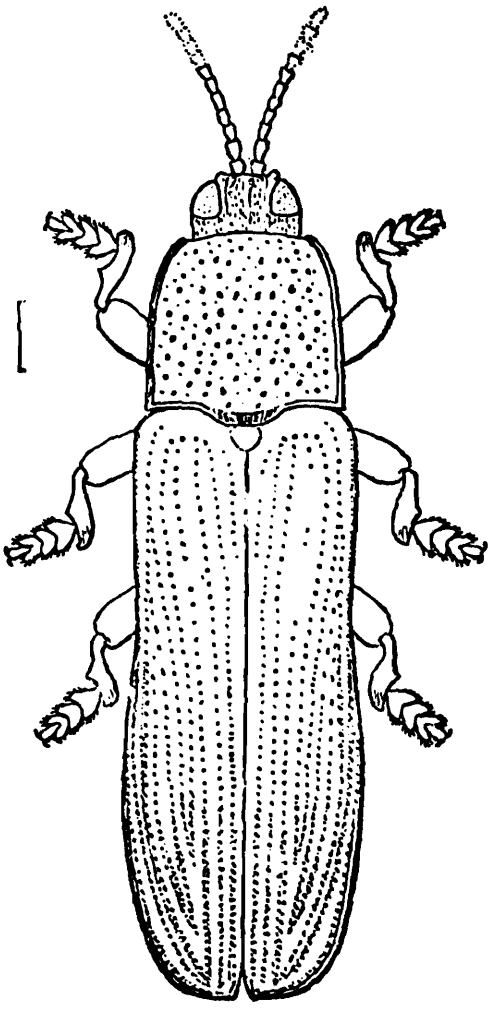


Fig. 23.—*Leptispa samkirna*, Maulik.

coarse punctures on each side; viewed laterally and ventrally the lateral edge of the elytra expands inwardly, the expansion being broader at the apex than at the base. The legs are short and stumpy; the tibiæ are short, outwardly emarginate at the apex. The tarsus, in the specimen before me, is almost equal to the femur in length, broader at the base than at the apex, tinged with testaceous, the claw-joint but slightly projecting beyond the bilobed joint, the claws divaricate.

Length, 6 mm.; breadth, nearly 2 mm.

CEYLON: Kandy, vi. 1908 (*G. E. Bryant*).

Type in the British Museum.

Described from one example. The specific name is a Sanskrit word meaning narrow.

60. Leptispa distincta, *Gestro.*

Paradownesia distincta, Gestro, Bull. Soc. Ital. 1906 (1908), p. 181.

Body elongate-oblong, yellow, shining; the antennæ, except the basal joint and a third of the posterior part of the elytra, black.

Head anteriorly truncate, the truncate part strongly produced and terminating in an angle at the apex, and with minute and irregular punctures; the vertex is impressed in the middle by a fine short longitudinal line. The antennæ are short, somewhat robust and slightly thickened towards the apex; the basal joint is thick and produced into a sharp point anteriorly and outwardly. *Prothorax* a little broader than long, the sides almost parallel, rounded and slightly convergent towards the front, the basal margin strongly bisinuate. The surface is moderately convex, with fine and irregular punctures, which are not very dense. *Elytra* almost as broad at the base as the prothorax and more than four times its length, gradually and slightly narrowed from the base to apex. The surface is convex, depressed at the apex, that is, the margins are gently reflexed, punctate-striate, the punctures being minute; the interstices are plane, the humerus prominent.

Length, 8–9½ mm.

South India: Wallardi, Travancore (*R. P. Favre*).

Type in the Genoa Museum; cotypes in the collection of Donckier de Donceel.

61. Leptispa longipennis, *Gestro.*

Downesia longipennis, Gestro, Ann. Mus. Civ. Genova, 1890, p. 243.
Paradownesia longipennis, Gestro, Ann. Mus. Civ. Genova, 1899, p. 220.
Leptispa longipennis, Maulik, Ann. Mag. Nat. Hist. July 1917, p. 130.

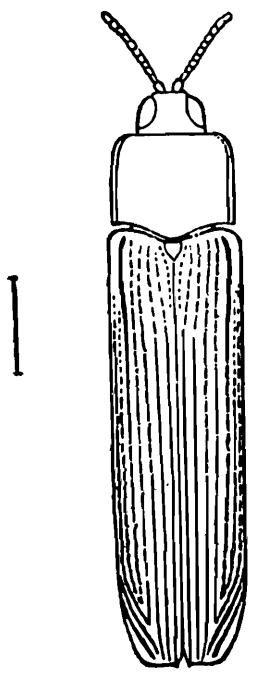


Fig. 24.—*Leptispa longipennis*, Gestro. (After Gestro.)

Body very elongate-oblong, parallel-sided, shining; the head, antennæ and elytra black; the prothorax red, with the apex blackish; the underside and legs fusco-testaceous, the sternum being darkish.

Head subquadrate, with a few punctures and an impressed short longitudinal line. The antennæ are shorter than the head and prothorax together, and gradually but very slightly thickened from the base to the apex. *Prothorax* rectangular, a little broader than long. The surface is slightly convex and finely but irregularly punctate, the punctures being more sparse along the sides; the anterior angles are rounded and very slightly reflexed, the posterior ones acute. *Elytra* very elongate, parallel-sided, hardly broader than the prothorax and almost four times as long;

the apices separately rounded, and the apical margins gently reflexed. The surface is finely punctate-striate; the interstices are not raised, and only slightly so on the apical part.

Length, 8½ mm.

BURMA: Karen Hills, 3000–3700 ft. (*L. Fea*, type). BHUTAN (Coll. Oberthür).

Type in the Genoa Museum.

62. **Leptispa latifrons**, *Ws.*

Leptispa latifrons, Weise, Deut. Ent. Zeits. 1904, p. 436.

Body elongate, slightly narrowed behind; the upper side black, with the anterior part rich reddish yellow-brown, the underside pale testaceous; the middle of the hind margin of the prothorax finely edged with yellow; the black colour of the elytra begins a little before the middle at the margin and widens behind, covering more than the last third at the suture. In the form of the body it resembles *L. filiformis*, Guér.

Head: the forehead is moderately thickly and towards the lower part more thickly punctate, and broader than that of *L. filiformis*, broadest between the roots of the antennæ, and very little narrowed between the eyes. The antennæ are entirely black. *Prothorax* feebly quadrate, the apex one-third narrower than the base; the edge of the sides is at its highest nearly at the beginning of the part where it narrows anteriorly. The upper surface is less strongly punctate than the head, the outer area not thickly and the middle area sparsely punctate. *Scutellum* small and black. *Elytra* as broad as the prothorax, gradually and very gently narrowed behind. The surface is moderately closely and finely punctate-striate. The outer interspace is gently raised behind the middle. The ninth row of punctures runs almost straight to the sutural angle so that there is a strikingly broader longitudinal space next to the edge of the lateral border.

Length, 6 mm.

CEYLON: Anuradhapura.

Type in Weise's collection.

GROUP II.

In this work Group II. consists of three genera, viz., *Chœridiona*, Baly, *Prionispa*, Chap., and *Oncocephala*, Chev. In these genera the following structures call for notice: (1) the anterior lateral angles of the prothorax, (2) the elytral costæ, and (3) the external apical angles of the elytra.

(1) In the genus *Chœridiona* at each anterior lateral angle of the prothorax there is a small notch in the form of an acute crescent, the extremities of which end in two points (fig. 25, A, B) that are sometimes blunt and sometimes sharp. In *Prionispa* the crescentic notch becomes larger, the two points being further apart (C, D). In *Oncocephala* this condition is accentuated, the

points separating still further from each other (E, F). *C. quadrilobata* (E) shows them almost at right angles to each other, while in *C. angulata* they have attained their greatest divergence (F).

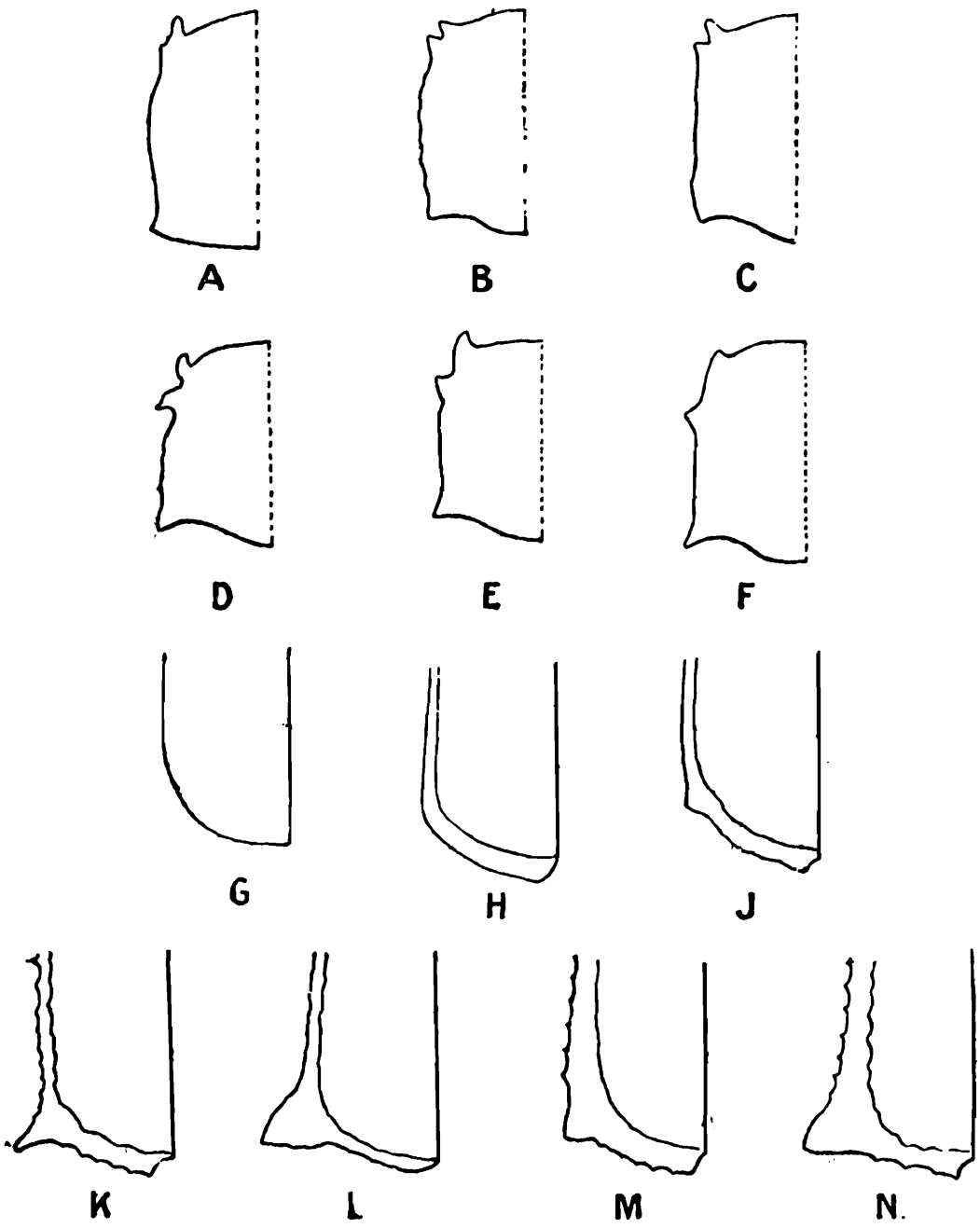


Fig. 25.—Lateral angles of the prothorax of: (A) *Chœridiona picea*, (B) *C. metallica*, (C) *Prionispa crassicornis*, (D) *Oncocephala dorsalis*, (E) *O. quadrilobata*, (F) *O. angulata*.

External apical angles of elytra of: (G) *Chœridiona feæ*, (H) *C. metallica*, (J) *C. picea*, (K) *Prionispa crassicornis*, (L) *P. tenuicornis*, (M) *Oncocephala depressa*, (N) *O. quadrilobata*.

(2) The costæ on the elytra break up into longitudinal elevations. The longitudinal form gradually diminishes, giving rise to blunt tubercles, which eventually become sharp spines. The gradation in this character is easy of observation.

(3) In *Chœridiona fœe* the external apical angles of the elytra are completely rounded, so that the lateral margin of the elytron gradually merges into the apical margin (fig. 25, G). In *C. metallica* we observe that the angles are obtuse and the lateral and apical margins are distinct (H); in *C. picea* they have become acute and the margins more defined in their boundaries (J). In the genus *Prionispa* (K, L) these characters are accentuated; sometimes they are produced in an extraordinary way, as in *P. tenuicornis*. Throughout the genus *Oncocephala* (M, N) these peculiarities are maintained. The production of these angles necessitates a dilatation of the elytra posteriorly, giving the insects of these genera the appearance of a wedge, the thin end being towards the head.

The following are the points of similarity between the genera broadly speaking:—The form of the body; there is always a projection between the antennæ, which is in some cases greater, in others less; there is always a depression in the middle of the elytron, which interrupts the third costa; this is a very constant character, being found in all species of these genera.

The points of difference are set forth in the following table; the characters are constant and definite and will easily distinguish the genera.

Key to the Genera.

1. Labial palpi present	2.
1′. Labial palpi absent ..	CHŒRIDIONA, Baly, p. 85.
2. Head surmounted by a protuberance	ONCOCEPHALA, Chev., p. 98.
2′. Head not surmounted by a protuberance	PRIONISPA, Chap., p. 88.

The genus *Prionispa* was founded by Chapuis in 1875 on two species, viz., *P. subopaca* and *P. nitida*, the latter having been subsequently identified with *Hispa fulvicollis*, Guér. These two species are found outside our faunistic limits, *P. subopaca* being the type of the genus. The characters by which he separates this genus are: (1) the ungrooved prosternum, (2) the presence of an appendix between the claws. At present fourteen species are included in the genus. I have examined all except two, viz., *inermis* and *vethi*, and I find that with the exception of *fulvicollis*, *subopaca*, and *distincta*, they do not satisfy the above two conditions; at any rate, I have not been able to observe the appendix between the claws, and the prosternum has not always the same character. In 1876 Baly described *Prionispa gemmata* without mentioning anything about the characters on which Chapuis founded the genus; since then other authors have followed his example. The point is whether the species that do not satisfy the original characters on which the genus was erected should be separated, or the scope of the genus should be extended. Studying the material at my disposal and taking all facts into consideration, I am inclined to the latter view; although it may

be pointed out that the green-coloured species, viz., *gemmata* (Batchian), *longicornis* (Tenasserim), *vethi* (Java), *pulchella* (Borneo), are more naturally related to each other than to the other species of the genus. In these circumstances the characters of the genus have here been re-defined.

Genus **CHŒRIDIONA**, *Baly*.

Chœridiona, Baly, Trans. Ent. Soc. Lond. 1869, p. 380; Chapuis, Gen. Col. xi, 1875, p. 309.

TYPE, *Chœridiona metallica*, Baly.

Small insects. Body wedge-shaped, the whole surface covered with large shallow pits which coalesce, giving an appearance of an irregular honeycomb structure. *Head* produced between the eyes, angulate in front. The antennæ 11-jointed, robust, longer than half the body; the joints cylindrical, the first joint thicker than the rest and rounder in shape. The first joint of the maxillary palpi is small, the following two short and equal, the last joint equal in length to the preceding joints united. The mentum is oblong, laterally constricted; the ligula is inserted on the dorsal side of the mentum, the basal part invisible, the terminal part large, subquadrate, longer than the mentum. *The labial palpi are absent.* The clypeus is more or less conically raised in the middle. *Prothorax* subcylindrical, narrowly margined, with the anterior lateral angles produced into a tooth. *Elytra* much broader than the prothorax, dilated behind, obliquely truncated at the apex, emarginate at the sutural angles which are rounded. The surface is very coarsely punctate-striate, and the alternate interstices very strongly raised. *Legs* moderately long, slender, unarmed; the tarsi with the first joint short, the second broader than the first, the third the broadest and longest, the fourth joint projecting beyond the third, the claws long and distinct.

Range. India, Burma. Only three species have been described under this genus, all from India or Burma.

Key to the Species.

1.	Dorsal surface of prothorax and elytra metallic green	*metallica*, Baly.
1′.	Dorsal surface piceous with a purple sheen .	2.
2.	Legs fulvous; costæ much interrupted and more prominently raised	*picea*, Baly.
2′.	Legs almost of the same colour as the underside of the body; costæ not much interrupted and less prominently raised . . .	*fœa*, Gestro.

63. Chœridiona metallica, *Baly*.

Chœridiona metallica, Baly, Trans. Ent. Soc. Lond. 1869, p. 381; Weise, Stett. Ent. Zeit. lxix, 1908, p. 214.

Body wedge-shaped, convex; the prothorax and the elytra metallic green in the middle, with the sides purplish red; the

underside and the four apical joints of the antennæ black; the coxæ and first two joints of the antennæ dark brown, third to seventh joints brown, the legs and extreme apex of elytra light brown.

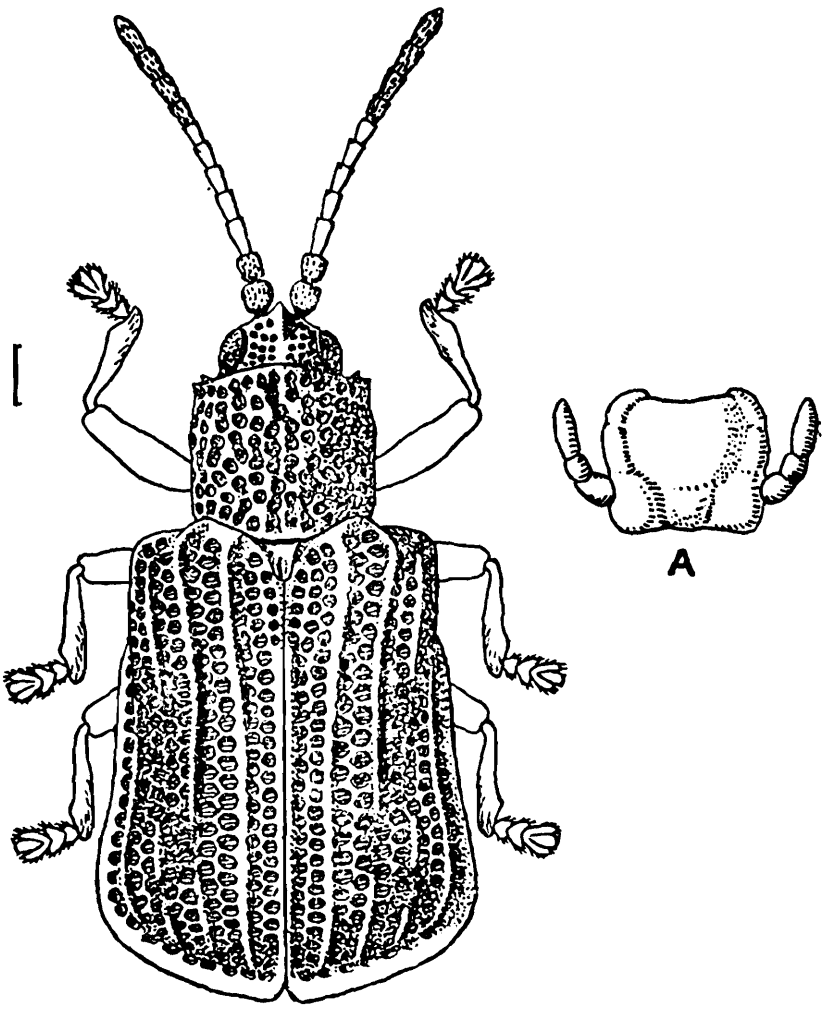


Fig. 26.—*Chœridiona metallica*, Baly; A, mentum.

Head deeply and coarsely punctured, with a ridge round the eyes; the front produced anteriorly into an angular projection, the apex of which is extended downwards to form a longitudinal ridge, which runs along the face as far as the upper border of the clypeus. The first joint of the antennæ is thick and rounded, the second joint smaller, the third longer than the second, the fourth to seventh each shorter than the preceding one, the eighth to eleventh each thicker and longer than the preceding one and together forming an elongate club. *Prothorax* subcylindrical, scarcely longer than broad, the sides subparallel and bisinuate, the anterior angles notched, bidentate. The surface is very deeply and coarsely punctate and rugose. *Scutellum* elongate, depressed, smooth, impunctate, broader at the base than at the apex, which is rounded; colour purplish red. *Elytra* much broader at the base than the prothorax, the sides narrowly margined, dilated towards the apex, the humeral callus prominently raised. Each elytron has four strongly-raised longitudinal costæ; the first and fourth entire, extending nearly to the apex; the second entire for the

greater part of its course but interrupted at some distance behind the middle, where the costa is more prominently raised; the third, which arises at the humeral callus, is broadly interrupted in the middle, where there is a depression, and again just before reaching the apex; the interstice between the third and the fourth costæ is a little raised in the middle; the suture is also raised. Between the suture and the first costa there are two rows of punctures, and similarly there are two rows between each pair of costæ, making ten rows in all; the punctures are deep and coarse. The margin of the elytra is a little expanded laterally; the edge is serrate. *Underside*: the prosternum coarsely punctate, the rest smooth, shining and impunctate. The tarsi are broader at the apex than at the base.

Length, 5 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in the British Museum.

64. Chœridiona picea, *Baly*.

Chœridiona picea, Baly, Trans. Ent. Soc. Lond. 1869, p. 382.

Body oblong, convex, piceous; the prothorax and elytra with a slight metallic purplish tinge; the first two joints of the antennæ, the coxæ, and underside very dark brown; the legs light brown or fulvous, the extreme apex of the elytra darker brown.

Head coarsely punctate, produced anteriorly in the same manner as in *C. metallica*, and with a ridge partly encircling the eye. In the type the antennæ are missing, except the first two joints, which are almost equal and grooved. *Prothorax* subcylindrical, subquadrate, the sides more broadly margined than in *C. metallica*; the lateral borders straight and parallel, slightly sinuate behind the middle, and armed just in front of the base with a minute tooth; the anterior angles slightly notched, produced anteriorly into a short tooth; the upper surface is coarsely rugose-punctate, and deeply excavated on the disc. *Scutellum* elongate, smooth, shining, impunctate, parallel-sided, broader at the base than at the apex, which is rounded. *Elytra* each with four strongly-raised (more so than in *C. metallica* and *C. fœcæ*) costæ which, being much more interrupted than in *C. metallica*, are more difficult to trace; thus the first costa is to be seen just below the base, again at the middle of the elytron (where it stands a little out of the line, and is connected by short transverse ridges, above, to the third, and below, to the second costa), again half-way between the middle and apex, and lastly at the apex itself; the second is visible at the base, behind the middle, and again a short distance before reaching the apex; the third, which commences at the humeral callus, is entire nearly to the middle (where it is connected, as stated above, by a short oblique branch to the first costa, and at this point the elytron is depressed), then interrupted, appearing again half-way between the middle and the apex; lastly, the fourth costa, which is nearly entire, is interrupted some distance behind the middle, but just below appears again, and forms a short oblique ridge, which

runs as far as, but a little below, the termination of the third costa. There are eleven rows of punctures including the scutellar row, two rows between each pair of costæ. The edge of each elytron is uneven, the posterior outer angles are distinctly angulate. *Underside* smooth, shining and impunctate. Tarsi elongate, narrower at the base than at the apex.

Length, 5 mm.

India (*Baly*).

Type in the British Museum.

65. **Chœridiona feæ**, *Gestro*.

Chœridiona feæ, Gestro, Ann. Mus. Civ. Genova, 1890, p. 239, fig.

Body oblong, shining nigro-piceous, with a metallic purple sheen similar to that of *C. picea*; the antennæ, legs and underside brownish black.

Head coarsely punctate, produced anteriorly, with a longitudinal ridge down the middle. The first joint of antennæ is the stoutest and rounded, the second joint smaller, the third longer than second, the following joints more or less equal to each other; the four apical joints are darker in colour and very slightly thicker than the preceding ones; the surface of the first seven joints is rough. *Prothorax* subcylindrical, subquadrate, convex, the sides margined, the lateral borders parallel, slightly bisinuate; the anterior angles notched and with a minute tooth, as in *C. picea*. The sculpturing of the surface is similar to that of *C. metallica*. *Scutellum* similar to that of *C. metallica*, depressed, smooth, impunctate, elongate, parallel-sided, and the apex rounded. *Elytra* much broader at the base than the prothorax, dilated posteriorly, the sides parallel and margined, the edge serrate. The costæ on each elytron are similar to those of *C. metallica* and much less raised than those of *C. picea*; at the part where the third costa is interrupted in the middle there is a depression in the elytron, and it is again interrupted at the apex; the first and the fourth costæ are entire; the second is less raised at the base and is slightly interrupted behind the middle. *Underside* smooth, shining, impunctate.

Length, $4\frac{1}{5}$–$4\frac{2}{3}$ mm.

Burma: Pegu; Palon; Tharrawaddy.

Type in the Genoa Museum; cotypes in Mr. Andrewes' collection and in the British Museum.

Genus **PRIONISPA**, *Chap.*

Prionispa, Chapuis, Gen. Col. xi, 1875, p. 337; Gestro, Ann. Mus. Civ. Genova, 1899, p. 226.

Genotype, *Prionispa subopaca*, Chapuis (Malay States).

Small, wedge-shaped insects, narrowed anteriorly and dilated posteriorly; the external apical angles of the elytra are acute or

right angles, or sometimes produced into a point. There is a projection between the antennæ, which sometimes continues as a longitudinal ridge down the middle of the upper surface of the head. The first two joints of the antennæ are ovate; the next five are generally cylindrical and elongate, the third joint being usually the longest; the four apical joints are generally hairy, rough and stouter. The prothorax is more or less cylindrical; the anterior and posterior apical angles are notched, in some species being more marked than in others, or again, they may be absent; the surface is convex and generally covered with deep and round pits. The scutellum is usually elongate, being as a rule broader at the base than at the apex; in one or two species it shows a peculiar structure. The elytra are dilated behind, roughly punctate-striate; generally there are four raised costæ, which in some species are broken up into tubercles and longitudinal elongate elevations. The underside is generally smooth and impunctate. The claw-joint of the tarsus is strong and large, and may or may not project beyond the lobes of the third joint; an appendix may or may not be present between the claws.

Range. India, Burma, and Indo-Malay region.

Altogether fourteen species have been described, of which eight occur within our faunistic limits.

Key to the Species.

1.	Elytra with tubercles or elevations	2.
1′.	Elytra without tubercles or elevations; pronotum and elytra green on the disc	*longicornis*, Gestro, p. 90.
2.	External apical angles of the elytra right angles	3.
2′.	External apical angles produced or expanded	4.
3.	Surface of prothorax and the external apical angles of elytra marked with vittæ.	*inermis*, Gestro, p. 91.
3′.	Prothorax and elytra not so marked; colour reddish brown.	*himalayensis*, Maulik, p. 92.
3″	Upper side black.	*sonata*, sp. n., p. 93.
4.	Claws with an appendix between them; colour brown with a purplish sheen	*champaka*, sp. n., p. 94.
4′.	Claws without an appendix between them	5.
5.	Anterior lateral angles of prothorax toothed; external apical angles of the elytra produced into a sharp point	*crassicornis*, Gestro, p. 95.
5′.	Anterior lateral angles of prothorax not toothed; external apical angles of the elytra broadly expanded	6.
6.	Colour black with bronze reflections; antennæ long	*tenuicornis*, Gestro, p. 96.
6′.	Colour black or deep blue-black; third joint of antennæ very long.	*patra*, sp. n., p. 97.

66. Prionispa longicornis, *Gestro.*

Prionispa longicornis, Gestro, Ann. Mus. Civ. Genova, 1906, p. 485.

Body narrowed in front and dilated posteriorly, shining or subnitid; colour metallic green dorsally, the head, sides of thorax, and humerus bronzy; the antennæ flavo-testaceous, the two basal joints darker, the four apical joints black; the lateral and apical margins of the elytra flavo-testaceous; underside testaceous, the legs flavo-testaceous, the coxæ, trochanters and tarsi darker.

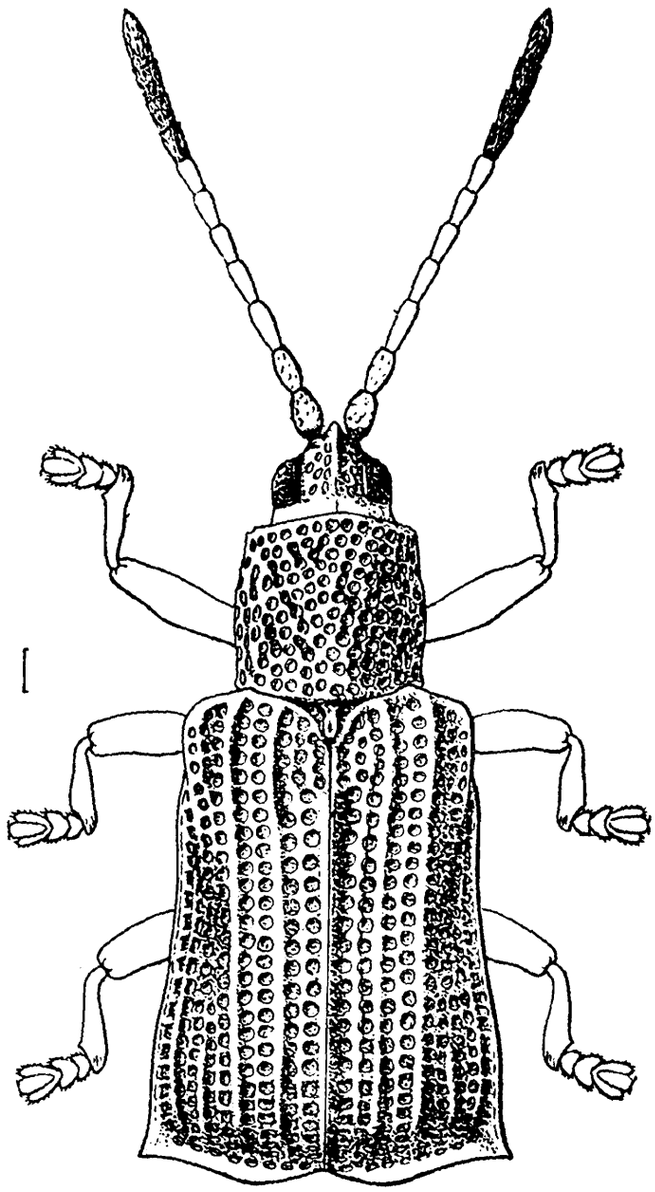


Fig. 27.—*Prionispa longicornis*, Gestro.

Head produced between the eyes, roughly punctate above, with a median longitudinal ridge or carina, which continues as a prominence between the antennæ; the eye is convex with a semicircular ridge round its dorsal border. The first joint of the antennæ is large, stout and rounded; the second joint smaller and rounded; the third to seventh cylindrical and slender, each being

smaller than its predecessor; the seven basal joints are smooth; the four apical joints black, punctate and slightly hairy. *Prothorax* cylindrical, longer than broad, the sides sinuately margined, the anterior margin straight, the posterior sinuate, both the anterior and posterior external angles being notched; the upper surface is convex, very rugosely and irregularly punctate. *Scutellum* smooth, metallic green, elongate, narrow, with the apex rounded. *Elytra* much broader at the base than the prothorax, dilated posteriorly, the sides more or less parallel, the margins serrate, the external apical angles produced very acutely, the humeral callus raised; along the scutellar row of punctures the suture is depressed, and there is a depression in the middle of each elytron; besides the scutellar row of punctures there are ten deep regular rows; all the interstices are more or less raised, but four alternate ones are more prominent than the others, being much higher towards the apex; the third costa is interrupted by the elytral depression, and the punctures are there confused. *Underside* shining, impunctate. The claw-joint of the tarsus slightly projects beyond the lobes of the third joint, there being no appendix between the claws.

Length, $3\frac{1}{2}$–4 mm.

BURMA: Tavoy, Tenasserim (*Doherty*, type). CEYLON: Kandy (*G. E. Bryant*, *G. Lewis*).

Type in the British Museum.

In one of the two Ceylon specimens before me (1) the external apical angles are not so much produced as in the type specimen, (2) the colour of the sides of the prothorax is more greenish than bronzy, (3) the colour of the two basal joints of the antennæ is the same as that of the following five joints, and (4) the marginal serrations of the elytra are not marked; but I consider these to be individual variations.

67. **Prionispa inermis**, *Gestro*.

Prionispa inermis, Gestro, Ann. Mus. Civ. Genova, 1899, p. 224.

Body oblong; testaceous, shining; the head behind the eyes with a fuscous vitta, the antennæ rufescent; the prothorax with a median, obsolescent, ferruginous vitta, the lateral vittæ fuscous. Elytra with pale interrupted costæ, and two piceous tubercles on each, the external apical angles marked with an oblique bronzy vitta; the legs straw-coloured.

Head produced between the eyes, the ridge being robust and shining, the upper surface roughly punctate. The antennæ hairless, with the four apical joints pubescent. *Prothorax* at base a little broader than long, in front slightly narrower than the base, the sides straight, the basal margin strongly sinuate; the upper surface is convex and thickly punctate, the punctures being deep and coarse. *Scutellum* narrow, rounded at apex, shining. *Elytra* a little broader at the base than the prothorax, gradually dilated

from behind the shoulders to the apex, which is almost truncate, the apical margin bisinuate; the external apical angles are rounded right angles and not expanded or produced. The surface is roughly and closely punctate-striate, the interstices being more or less elevated into costæ, which are interrupted, and some pale yellow in colour; the first costa at base and after the middle is slightly raised into angulate tubercles; the second costa has a small tubercle at the middle.

Length, 5 mm.

BURMA: Ruby Mines, 4000–4700 ft. (*Doherty*).

Type in the Oberthür collection.

68. **Prionispa himalayensis**, *Maulik*.

Prionispa himalayensis, Maulik, Rec. Ind. Mus. 1915, p. 371.

Body wedge-shaped, rufo-testaceous, with the tubercles on the elytra darker; the legs pale flavous, the coxæ and claws dark red; the eyes, mandibles, labrum, and the four apical joints of the antennæ black; the underside of the thorax dark red.

Head rather exserted, cylindrical, the inter-antennal protuberance prominent, with a few punctures on the vertex, the underside smooth and shining; eyes oval, black. The antennæ with the first joint small, the second longer than the first, constricted at base, the third the longest, the fourth to seventh gradually thickened towards the apex and each shorter than the preceding one; joints 1–7 have a peculiar transparency and a thin red ring at the apices; joints 8–11 opaque, black; eleventh joint pointed. *Prothorax* cylindrical, longer than broad, the base bisinuate, the sides with straight dark red margins, the anterior angles toothed, the disc coarsely and deeply punctate. *Scutellum* longer than broad, narrowed at the apex, which is broadly rounded. *Elytra* much broader at the base than the prothorax, punctate-striate, the shoulders elevated and projecting; at about the middle of each elytron is a large shallow depression. The suture is raised, and there are two costæ from the elevated humeral angle, one along the elevated surface up to the depression, the second below the elevated surface along the side to the apex of the elytron. There are six tubercles on each elytron, disposed as follows:—a small one close to the base; a larger one, concave externally, at about the middle between the suture and the depression; posterior to this are two small tubercles, one very close to the suture and the other beyond the line on which the largest tubercle is situated; external to this tubercle a little thickening of the second costa looks like a minute tubercle; finally, there are two minute tubercles on the sloping apical portion of the elytron, one on the line of the preceding sutural tubercle, the other on the line of the largest tubercle.

Length, 5 mm.

SIKKIM: Kurseong, alt. 4700–5000 ft., 21.xi.1910 (*Annandale*).
Type in the Indian Museum, Calcutta.
Described from one example.

69. Prionispa sonata, sp. nov.

Body wedge-shaped; head, prothorax and elytra black; the apical margin of elytra and the legs pale fulvous; the antennæ and underside of abdomen reddish brown.

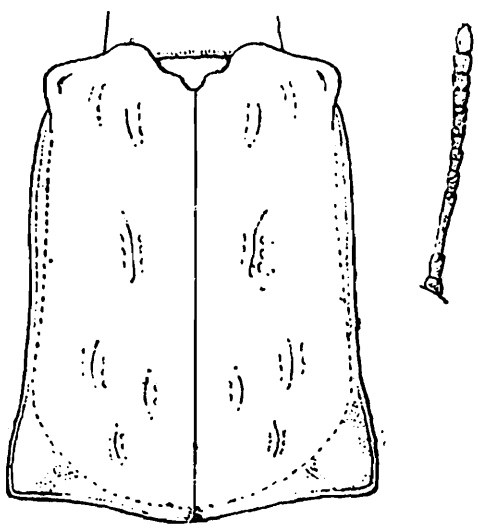


Fig. 28.—Elytra and antenna of *Prionispa sonata*, Maulik.

Head slightly produced between the antennæ, impunctate in the middle, with only a few punctures on either side. The antennæ with the first two joints cylindrical in shape, the first smaller than the second; the third much the longest, as long as the next three joints together; the fourth to seventh almost equal, their apices rounded; the four apical joints much thicker than the rest and hairy, forming an elongate club; the first to seventh joints smooth, shining, hairless. *Prothorax* cylindrical, a little longer than broad, the sides sinuately margined, the front margin straight, the posterior bisinuate, the anterior angles not notched or toothed. The upper surface convex, with a small space in the front and in the middle impunctate; the sides are coarsely punctate, with a raised impunctate area in the centre. *Scutellum* imbedded in a hollow, rough, with one or two punctures, much broader at the base than at the apex, which is rounded. *Elytra* much broader at the base than the prothorax, broadened at the apex and narrowed at base; the external apical angles expanded, but not produced to a point; the sides not much expanded, the margins not serrate, the humeral callus raised. The surface is punctate-striate; the general plan of the costæ, the raised portions and the depressions in the middle of the elytra are the same as in other species of the genus; the raised portions on each elytron are low and rounded. *Underside* smooth, shining, impunctate; the prosternum grooved

along the sides, rough; the claw-joint only slightly projecting beyond the lobes of the third joint, with an appendix between the claws.

Length, 5 mm.

ASSAM: Shillong, Khasi Hills, 5500–6400 ft., 29.viii—5.ix. 1915 (*S. W. Kemp*).

Type in the Indian Museum.

Described from one example.

70. **Prionispa champaka**, sp. nov.

Body wedge-shaped, shining; fulvous with purple sheen, the apices of the elytral prominences and the sides of the prothorax piceous.

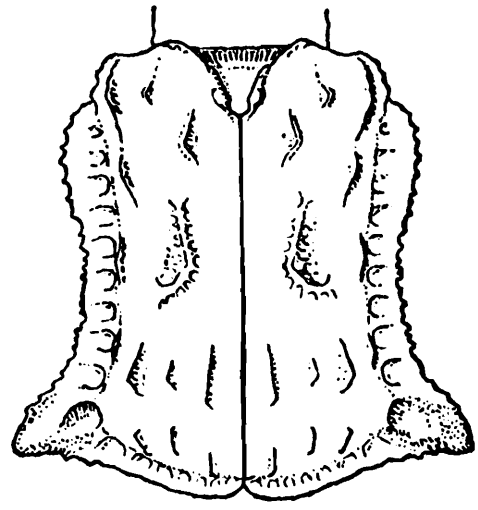


Fig. 29.—Elytra of *Prionispa champaka*, Maulik.

Head produced between the antennæ, with a few broad and deep punctures. The specimen from which this description is drawn up lacks the antennæ. *Prothorax* cylindrical, the sides margined, the front and posterior margins straight; the anterior angles notched as usual in the genus; surface with an impressed longitudinal line down the middle, on both sides of which there are large and deep punctures. *Scutellum* granulate, depressed at the apex, deeply imbedded in a triangular cavity, broadened at the base and narrowed at the apex. *Elytra* much broader at the base than the prothorax, dilated posteriorly, the sides broadly expanded and the margins strongly serrated; the external apical angles expanded into a triangular structure which is concave on the underside, the humeral callus strongly elevated. The surface is punctate-striate, as well as costate; the costæ are much interrupted, forming more or less sharp and elongate elevations; on the line of the first costa there are four elevations, the second, which is the highest, being situated about the middle, with a depression on the outer side of it; on the line of the second costa there are three small tubercles, one at the base, the other two at the apex; the third costa is interrupted by the depression, having

only two tubercles at the apex; the fourth is continuous throughout, except for three interruptions; the sutural angles of the elytra are not emarginate. *Underside* shining, fulvous, impunctate; the prosternum grooved; the claw-joint projects beyond the lobes of the third joint and bears no appendix.

Length, 6 mm.

ASSAM: Patkai Hills (*Doherty*).

Type in the British Museum.

Described from one example.

71. **Prionispa crassicornis**, *Gestro*.

Prionispa crassicornis, Gestro, Ann. Mus. Civ. Genova, xliv, 1910, p. 556.

Body wedge-shaped, shining; colour bronzy with purple reflections, the lateral margins and the extreme apical margin of the elytra, and one or two patches on the elytra fulvous; antennæ reddish brown, eighth to tenth joints darkish; underside black with bronzy reflections; legs pale fulvous; coxæ, bases of femora, and tarsi reddish brown.

Head produced between the antennæ, with a few large punctures; eyes convex. The antennæ robust, the five apical joints forming a thickened club; the first seven joints are striated; the first two robust, the third the longest; each of the following four joints is shorter than its preceding joint, the apical joint pointed. *Prothorax* broader than the head, cylindrical, longer than broad, the sides margined and parallel, the front margin straight, the basal margin sinuate, the anterior angles ending in a small tooth followed by a small notch; the surface convex, coarsely and irregularly punctate, with a small, more or less circular, raised impunctate space in the centre. *Scutellum* elongate, small, the sides parallel, the apex rounded, the surface smooth, shining. *Elytra* much broader at the base than the prothorax, parallel-sided, the external apical angles drawn into a sharp point, the lateral and apical margins serrate, the sutural angle emarginate, the humeral callus sharply elevated; between the scutellar rows of punctures the suture is depressed, and at the middle the elytra are depressed; punctate-striate, the punctures coarse and deep, the interstices costate; on each elytron four principal costæ are traceable: the first consists of three highly raised elevations, one being near the base, the second beyond the middle, and the third at the apex; the second costa commences with a small tubercle and is greatly elevated in the middle, this elevation, which is the largest, being the inner boundary of the elytral depression; the third costa starting from the humeral callus is diverted towards the second costa in front of the elytral depression, and joins the largest elevations, posterior to the elytral depression there are two small tubercles in the line of the third costa; the fourth costa starts below the elevated humeral callus and continues uninterrupted throughout its length, except at the

apex, where it breaks up into two small tubercles. *Underside*: the claw-joint of the tarsus projects much beyond the lobes of the third joint; the claws are very strong and prominent, and there is no appendix between them.

Length, 3-4 mm.

MADRAS; Nilgiri Hills (*H. L. Andrewes*).

Type in the Genoa Museum; cotype in Mr. H. E. Andrewes' collection, London.

72. Prionispa tenuicornis, *Gestro*.

Prionispa tenuicornis, Gestro, Ann. Mus. Civ. Genova, xliv, 1910, p. 554.

Body wedge-shaped, shining; upper side black with a bronzy reflection, the apical margin of the elytra narrowly rufescent, the apical angle cyaneous; the four basal joints of the antennæ testaceous, the next three whitish, the four apical joints black; underside nigro-piceous, the abdomen testaceous, the legs very pale testaceous, the tarsi darkish.

Head produced into an acute angle between the antennæ, with an impressed median line, both sides of which are rough and irregularly punctate. The antennæ long and slender, the third joint longer than the two preceding joints together, the next three becoming gradually shorter, the apices of the third to seventh joints slightly clavate, the four apical joints short. *Prothorax* a little broader than the head, slightly longer than broad, cylindrical, the sides not margined, the anterior and basal margins straight, the anterior lateral angles not notched; the surface punctate-rugose, with a ridge along the longitudinal middle line and a transverse impression in front of the basal margin. *Scutellum* elongate, smooth, shining, much broader at the base than at the apex, which is tubular (not flat as is generally the case) with a little hole at the end; the scutellum is situated in a large triangular hollow formed by the base of the prothorax and the basal portions of the elytra which meeting obliquely form the apex of the triangle. *Elytra* much broader at the base than the prothorax, posteriorly much dilated, the lateral apical angles strongly produced into a triangle with an acute point, the humeral callus much elevated, the sides parallel; punctate-striate, the scutellar row of punctures present, the punctures rough and deep, the interstices costate; in some places the costæ are greatly elevated. In the middle of each elytron there is a deep and large depression, overhung on the inner side by a great elevation, which may be considered the middle portion of a strongly elevated costa; there are no large tubercles on the elytra; in five places the costæ have become elevated, the second being the longest, the others only feebly raised. *Underside* smooth, shining, impunctate. The claw-joint does not project beyond the lobes of the third joint; claws strong, divaricate, with no appendix.

Length, 5 mm.

ASSAM: Khasi Hills.

Type in the Genoa Museum; cotype in Mr. H. E. Andrewes' collection.

This species may be easily recognised by the long and slender antennæ, and by the posterior lateral triangular projection of the elytra.

73. **Prionispa patra**, sp. nov.

Body wedge-shaped; black or blue-black, subnitid; the legs fulvous; the first two joints of the antennæ, underside of the abdomen, and the tarsi dark reddish brown; the four apical joints of the antennæ black.

Head slightly produced between the eyes, rough, with a few deep punctures on each side. The first two joints of the antennæ are cylindrical, the first joint smaller than the second; the third

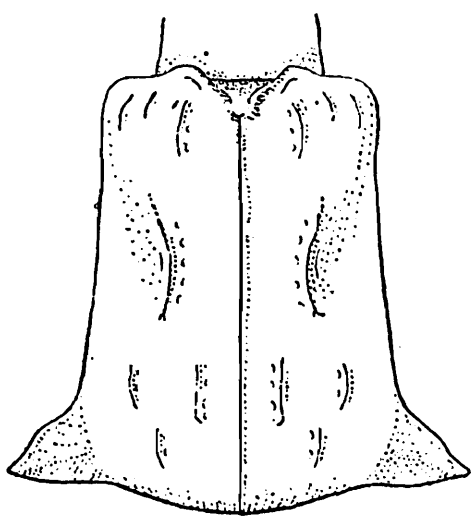


Fig. 30.—Elytra of *Prionispa patra*, Maulik.

joint enormously long, almost equal to the next two joints; the fourth joint longer than each of the following joints; the fifth, sixth and seventh equal; all these joints are shining, smooth and hairless, the four apical joints being stouter, opaque and hairy. *Prothorax* cylindrical, a little longer than broad, the sides sinuately margined, the front margin straight, the posterior margin sinuate, the anterior lateral angles not notched or toothed. The upper surface convex, with coarse deep punctures, between which some of the interspaces are elevated, smooth and impunctate; the punctures along the front margin tend to become elongate. *Scutellum* imbedded in a hollow, broader at base than at the apex, which is rounded, with a faint groove on each side, and the surface depressed at the apex. *Elytra* much broader at the base than the prothorax, much widened posteriorly, the humeral callus raised, the external apical angles produced into a triangular lobe, the lateral margin not serrated, the apical margin slightly so. The sculpturing of the elytra is typical of the genus; there are rows of coarse deep punctures, a depression in the

middle, which interrupts the course of the third costa, and four interrupted costæ can be traced; the highest elevation on each elytron stands in the middle, forming the inner bonndary of the elytral depression; the other elevated portions of the costæ vary a little, therefore cannot be exactly counted. The female is larger than the male, with stronger elevations. *Underside* smooth, impunctate, subnitid. The claw-joint projects a little beyond the lobes of the third joint and has no appendix.

Length, 7 mm.; breadth, $5\frac{1}{4}$ mm.

ASSAM: Patkai Mts. (*Doherty*); Assam Valley (*Doherty*).

Type in the British Museum.

Described from 2 ♀ ♀ and 5 ♂ ♂. In one male specimen from the Assam Valley the blackness is slightly tinged with blue, and the legs are darker brown.

Genus **ONCOCEPHALA**, *Chevrolat.*

Oncocephala, Chevrolat, in d'Orbigny, Dict. Univ. Hist. Nat. ix, 1847, p. 110; Chapuis, Gen. Col. xi, 1875, p. 308; Weise, Deut. Ent. Zeits. 1897, p. 120; Gestro, Ann. Mus. Civ. Genova, 1899, p. 313.
Nepius, Thomson, Arch. Ent. ii, 1858, p. 225.

GENOTYPE, *Oncocephala quadrilobata*, Guérin.

Body wedge-shaped, i. e., narrowed anteriorly and dilated posteriorly; colour brown or brownish black. The *head* is produced between the eyes, and on the dorsal side of the produced part there is the cephalic protuberance, which hides the base of the antennæ from view. This structure is characteristic of the genus and easily distinguishes it from all others; it varies in shape and seems to have been formed by the fusion of several tubercles. The variation in this structure affords characters to separate the species. The antennæ are fairly stout, the first two joints being rounded, the rest cylindrical; the apical joint is pointed, the third, as a rule, a little longer than the others; all the joints, except the first two, are finely striated. *Prothorax* more or less cylindrical in shape, narrower than the elytra, the sides margined, the anterior and posterior angles pointed. *Elytra* broadened posteriorly, with the angles generally drawn into a point; if not, at least they are acute; the anterior angles are rounded, the sides expanded, the margins serrated. The sculpturing on the pronotum and elytra is very rough and uneven, the pronotum generally bearing tubercles, and the whole surface is full of elevations and depressions; there are rows of deep and rough punctures, and tubercles on the elytra, the costæ being elevated and much broken up; owing to the depth and broadness of the punctures and the tubercles, etc., their rows can hardly be distinguished.

Chapuis (l. c. p. 309) says that the prosternum is convex and non-canaliculate. In the Indian forms before me I find that it is not convex. The legs are rather short and stout. Chapuis (l. c.

p. 309) observes that on the inner side of the tibiæ at the apex there is a toothed projection. I do not find this structure in the Indian forms; at that place they have stiff hairs. The tarsi are short and much narrower at the base than at the apex; the third

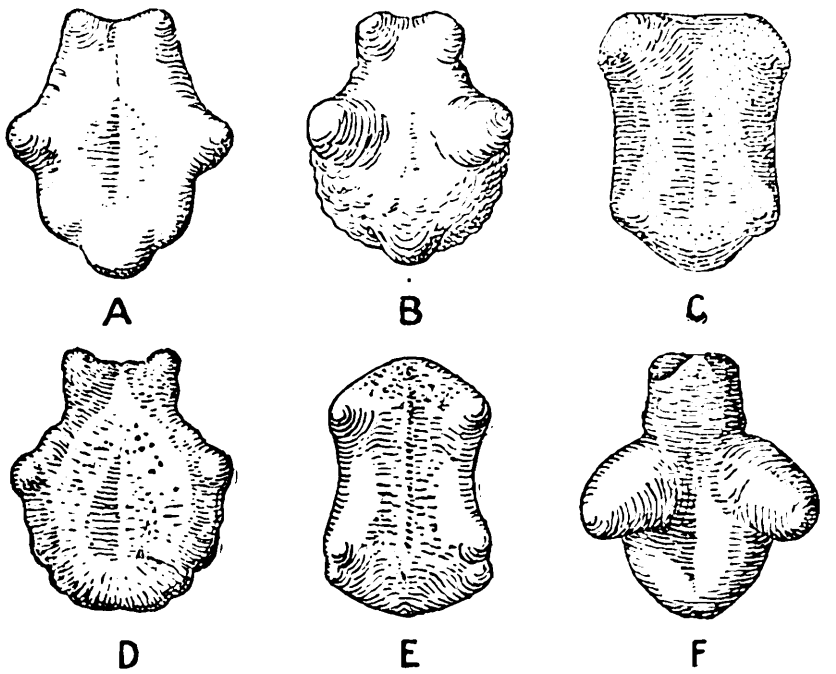


Fig. 31.—Cephalic protuberances of: (A) *Oncocephala quadrilobata*, (B) *O. tuberculata*, (C) *O. dorsalis*, (D) *O. angulata*, (E) *O. depressa*, (F) *O. feæ*.

joint is large and as long as the two preceding joints together; the fourth joint does not project (or but slightly) beyond the two lobes of the third; the claws are strong and divergent.

Range. Africa and Asia.

Out of twenty-four species described under this genus six occur within our faunistic limits. The species are differentiated according to the form of the cephalic protuberance, of which figures are given for all the Indian species, so that a key is not necessary.

74. Oncocephala quadrilobata, *Guér.*

Onchocephala quadrilobata, Guérin, Icon. Règne Anim., Ins. 1844, p. 281.

Oncocephala quadrilobata, Weise, Deut. Ent. Zeits. 1897, p. 121, and 1905, p. 117; Gestro, Ann. Mus. Civ. Genova, 1899, p. 314, f. 1.

Colour brown, with black spots on the elytra.

Head: the cephalic protuberance appears at first sight to be quadrilobed, but I regard it as seven-lobed (fig. 31, A), which is the typical form in this species, as described and figured by Dr. Gestro. I have before me nine examples from Ceylon and one from the Nilgiri Hills, in which the first two lobes are much closer to each other, and these are regarded as a variety. *Prothorax* almost cylindrical, the sides margined and almost straight, the basal

margin sinuate, the anterior angles very acute, with a blunt tooth a little behind the angle; surface very rough, with depressions and furrows, and with two conical tubercles near the front margin, one on each side of the middle line. *Scutellum* elongate, narrow, reddish brown. *Elytra* much broader at the base than the prothorax, dilated posteriorly where the outer angles are produced to a point; the humeral callus much elevated; on each elytron four costæ are traceable: the first costa is distinctly elevated twice, first into a small tubercle soon after its commencement, then gradually rising till it attains its highest point behind the middle; the second costa has a small tubercle posterior to the middle, and another after a short break; the third costa disappears anterior to the middle, then follows a depression, posterior to which again there is a small tubercle; the fourth costa arises from the humeral callus, continues entire and turns round at the apex to meet the suture, and is joined by the first costa on its way. The punctures between the costæ are broad, shallow depressions. The lateral elytral expansion is concave in the middle, the edge being serrated. There are black patches on the elytra, and generally the apices of the elevations are black. *Underside* of the same colour as above; the fourth or claw-joint projects beyond the lobes of the third joint.

Length, 5 mm.

MADRAS: Pondicherry (type); Nilgiri Hills (*H. L. Andrewes*). CEYLON. ANDAMAN ISLANDS (Ind. Mus.). BURMA: Tenasserim (*Doherty*).

Type. According to Dr. Gestro, the type is in the Oberthür collection. He has seen three examples in that collection labelled "Ex coll. Guérin-Meneville"; they were not specifically determined, but he has no doubt they belong to this species. These examples were taken at Pondicherry.

Variations. The cephalic protuberance varies within certain limits, as has been explained above. In one example from Tenasserim the cephalic protuberance, and the spines and external apical angles of the elytra have a tendency to become very pointed. In the Andaman examples the external apical angles, tubercles and elevations on the elytra are less pronounced.

75. Oncocephala tuberculata, *Oliv.*

Hispa tuberculata, Olivier, Encycl. Méth. vii. 1792, p. 99; id., Ent. vi, 1808, p. 773, t. 2, f. 24.

Oncocephala tuberculata, Weise, Deut. Ent. Zeits. 1897, p. 122; Gestro, Ann. Mus. Civ. Genova, 1899, p. 315, f. 2.

Subnitid, ferruginous, a good deal of the elytral surface being suffused with black; the two apical joints of the antennæ paler.

Head with the protuberance four-lobed (fig. 31, B), the front lobe consisting of two smaller ones which have fused, the lateral lobes large and rounded, with a longitudinal impression between them, the sides constricted near the apex, and the posterior margin with

a rounded prominence. *Prothorax* almost cylindrical, laterally margined, the sides almost straight, the front margin straight, the basal margin widely sinuate; the anterior angles end in a small blunt tooth, just behind which is another very minute tooth, these teeth being comparatively small in this species; surface very rough, full of elevations and excavations, with two conical tubercles near the front margin, one on each side of the middle line, at the base a deep fossa which is tinged with black, and a similar lateral depression on each side. *Scutellum* elongate, narrow, slightly tinged with fuscous. *Elytra* much broader at the base than the prothorax, dilated posteriorly, the elytral angles acute but not drawn out to a point, the humeral callus much elevated. On each elytron four costæ are traceable; the first is elevated three times, near the base, beyond the middle, and near the apex, the middle elevation being the highest, with another very small elevation between the first and the second; the second costa is raised into a tubercle near the highest elevation of the first costa, with another tubercle towards the apex; the third costa is represented by a tubercle situated posteriorly to the middle elytral depression; the fourth costa, arising from the humeral callus, continues up to the apex, where it turns round to meet the suture, uniting with the first costa on its way; the punctures between the costæ are represented by large shallow depressions; the suffusion of black on the elytra is variable. *Underside* of the same colour as the upper side, being also suffused with black here and there; the fourth or claw-joint of the tarsus projects beyond the lobes of the third joint.

Length, 4½–6 mm.

BOMBAY: Belgaum (*H. E. Andrewes*). MADRAS: Coimbatore, June 1913, on sweet potato (*Ramakrishna*).

Type probably in the Paris Museum.

76. Oncocephala dorsalis, *Ws.*

Oncocephala dorsalis, Weise, Deut. Ent. Zeits. 1897, p. 123; Gestro, Ann. Mus. Civ. Genova, 1899, p. 317, f. 5.

Ferruginous, subnitid, the apices of the prominences shining; one or two spots here and there very dark or black and shining; scutellum black.

Head with the protuberance not large enough to conceal the basal joints of the antennæ, which are fairly robust; the first joint rounded and smooth, the second small, the rest cylindrical, with the surface finely striated; the two apical joints lighter in colour; the protuberance (fig. 31, C) is pentagonal, a little narrowed posteriorly, and constricted in the middle. *Prothorax* almost cylindrical, the lateral margins almost straight, the anterior margin straight, the basal margin bisinuate; the anterior angles end in a blunt tooth, just behind which is another tooth; the surface very rough, full of elevations and excavations, with a conical tubercle near the front margin on each side of the middle

line, a deep fossa at base, in front of which is another smaller one, and a large one on each side; besides these there are other irregular smaller foveæ. *Scutellum* elongate, narrow, longitudinally impressed in the middle. *Elytra* much broader at the base than the prothorax, dilated posteriorly, with the humeral callus much elevated; the lateral expansions are posteriorly produced to a point and bear one row of broad punctures, their margins being

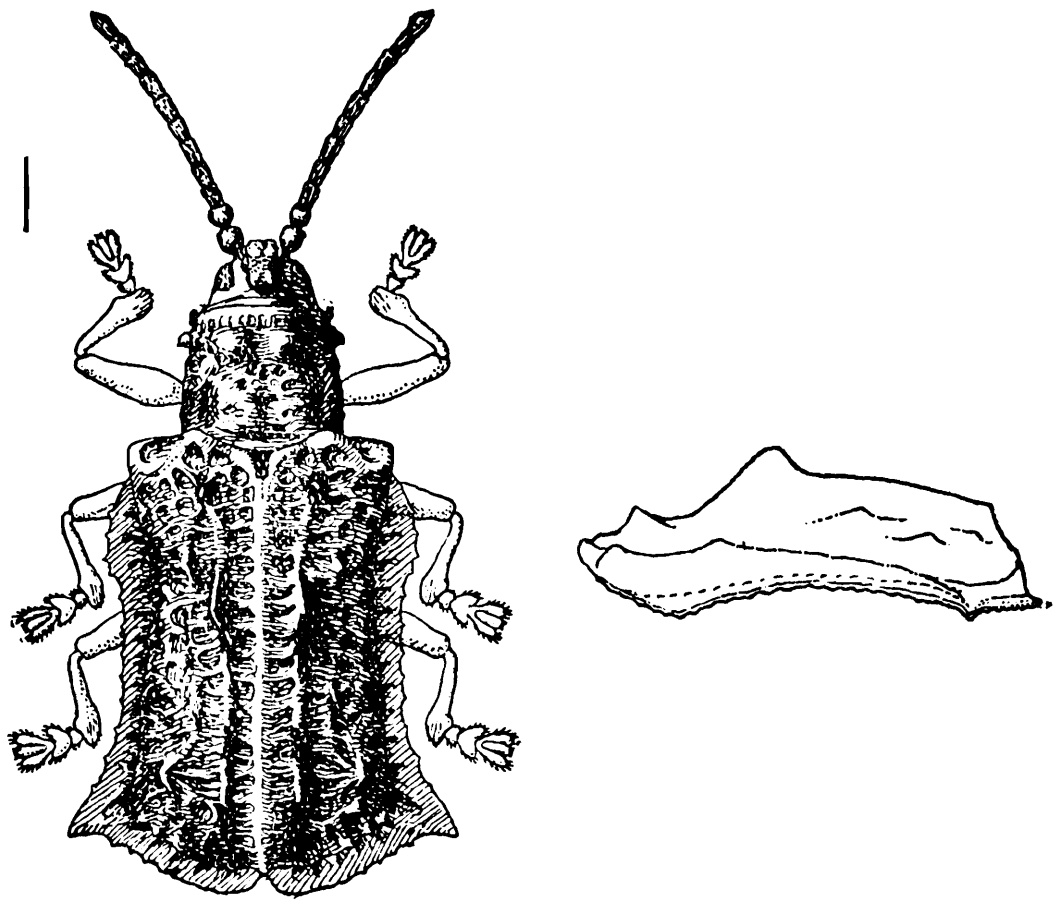


Fig. 32.—*Oncocephala dorsalis*, Weise, and lateral view of elytra.

broadly sinuate and serrate; the sutural angle is emarginate; posterior to the scutellum the suture is a little depressed; on each elytron four costæ can be traced: the first costa is fairly complete, bearing a small tubercle near the base and a very high one just before the middle; the second costa has a small tubercle just behind the middle, and another smaller one beyond it towards the apex; the third costa disappears in the middle, where the elytron is depressed, and is represented only by a tubercle behind; the fourth costa rises from the humeral callus and continues to the apex, there turning round to meet the suture and uniting with the first costa. *Underside* of the same colour as the upper side; the fourth or claw-joint of the tarsus hardly extends beyond the lobes of the third joint.

Length, $5\frac{4}{5}$–$6\frac{1}{2}$ mm.

Bombay: Belgaum (*H. E. Andrewes*).

Type in Weise's collection; cotype in Mr. Andrewes' collection.

77. **Oncocephala angulata**, *Gestro*.

Oncocephala angulata, Gestro, Ann. Mus. Civ. Genova, 1885, p. 172, 1897, p. 72, and 1899, p. 218, f. 6.

Colour brown, with black patches here and there, especially on the apices of the elevations.

Head with the protuberance as shown in the figure (fig. 31, D), a deep constriction between the anterior and lateral lobes; viewed from in front the corners of the anterior lobe end in a rounded knob; the lateral lobes are rounded, and there is a dorsal longitudinal depression between them; the fourth or posterior lobe is broad and rounded; generally the colour is lighter on the disc than round the edges. *Prothorax* in shape and form as in the other species. *Scutellum* elongate, narrow. *Elytra* in shape and sculpturing similar to those of *O. quadrilobata*, Guér. *Underside*: the fourth tarsal joint hardly or very slightly projects beyond the lobes of the third joint.

Length, 4–5 mm.

PUNJAB: Delhi. MADRAS: Nilgiri Hills. SUMATRA: Ayer Mantcior, Sungei Bulu, Pangerang-Pisang, Pea-Ragia, Balighe, Padang.

Type in the Genoa Museum.

78. **Oncocephala depressa**, sp. nov.

Colour light brown, with black markings; the antennæ reddish brown, shining.

Head with the protuberance (fig. 31, E) four-lobed, the lobes being more or less equidistant from each other, with the sides sinuate and a deep longitudinal impression down the middle of the disc. *Prothorax* almost cylindrical, the sides margined, the front and posterior margins straight, with a sinuate ridge on the latter; the teeth in which the anterior angles end are thick and rounded, and behind each is another tooth or sharp projection; the surface rough, full of depressions and elevations, with a row of punctures near the anterior margin, behind which are two conical tubercles; behind these again there are two broad elevated areas which may be considered as flattened tubercles, and connected with them externally on each side is a longitudinal ridge. *Scutellum* elongate, narrow, dark reddish brown. *Elytra* much broader at the base than the prothorax, dilated posteriorly, the humeral callus much elevated; four costæ are traceable on each elytron: the first is uniformly elevated throughout its length, but may be slightly more elevated in the middle and is marked with black at intervals; the second costa is much less elevated and is broken up at the apex; the third costa is hardly distinguishable, there being a small tubercle at its apex; the fourth costa arising from the humeral callus runs almost the whole length of the elytron, but is obliterated at the apex by deep punctures. Two rows of punctures are distinguishable between the suture and the first costa, the punctures between the other costæ being very much

confused. *Underside*: colour darker brown; the fourth joint of the tarsus hardly projects beyond the lobes of the third joint.

Length, 6 mm.

MADRAS: Nilgiri Hills (*A. K. Weld Downing*).

Type in the British Museum.

Described from one example.

It is called *depressa* because of the fact that the first costa does not rise to a great elevation as in the other Indian species, and also that its tubercles are much less prominent.

79. **Oncocephala feæ**, *Gestro*.

Oncocephala feæ, Gestro, Ann. Mus. Civ. Genova, 1899, p. 316, f. 4.
Oncocephala bicristata, Baly, Ann. Mus. Civ. Genova, 1888, p. 659; Gestro, Ann. Mus. Civ. Genova, 1890, p. 239 (*pars*).

Flavo-ferruginous, subnitid; the upper side variegated with nigro-piceous, the posterior apical angles of the elytra black; the antennæ rufo-ferruginous, two apical joints paler.

Head: the cephalic protuberance (fig. 31, F) is small, anteriorly truncate, the two lateral lobes large and widely separated. *Prothorax*: the two conical tubercles near the front margin are highly elevated. *Scutellum* as usual. *Elytra* dilated posteriorly, with the angles very acute and toothed, the apical margin deeply sinuate; the first costa is acutely elevated three times, the intermediate elevation being the smallest and the posterior one the largest.

Length, 5 mm.

BURMA: Bhamo, Sept. 1897 (*L. Fea*).

Type in the Genoa Museum.

Described from one example.

GROUP III.

Key to the Genera.

1. Anterior margin of the mouth cavity close to the base of the antennæ ..	2.
1′. Anterior margin of the mouth cavity not close to the base of the antennæ	3.
2. On each elytron there is a single more prominent costa.	JAVETA, Baly, p. 105.
2′. All the interstices on the elytra are of equal height	WALLACEA, Baly, p. 106.
3. Sides of the prothorax parallel; the three principal costæ on each elytron are much lower, and sometimes broadened and flattened at base.	DOWNESIA, Baly, p. 110.
3′. Sides of the prothorax not parallel; the costæ on the elytra much higher and well-developed throughout, never broadened and flattened at base	4.
4. Prothorax almost cylindrical, slightly narrowed in the middle, with the lateral margins smooth and even ..	AGONIA, Ws., p. 122.
4′. Prothorax not cylindrical, broadest in the middle, the lateral margins as a rule toothed and rough..... .	GONOPHORA, Baly, p. 142.

Genus **JAVETA**, *Baly*.

Javeta, Baly, Cat. Hisp. 1858, p. 108.

GENOTYPE, *Javeta pallida*, Baly.

Body elongate. *Head* as broad as the prothorax; antennæ robust, gradually thickened towards the apex, the first two joints

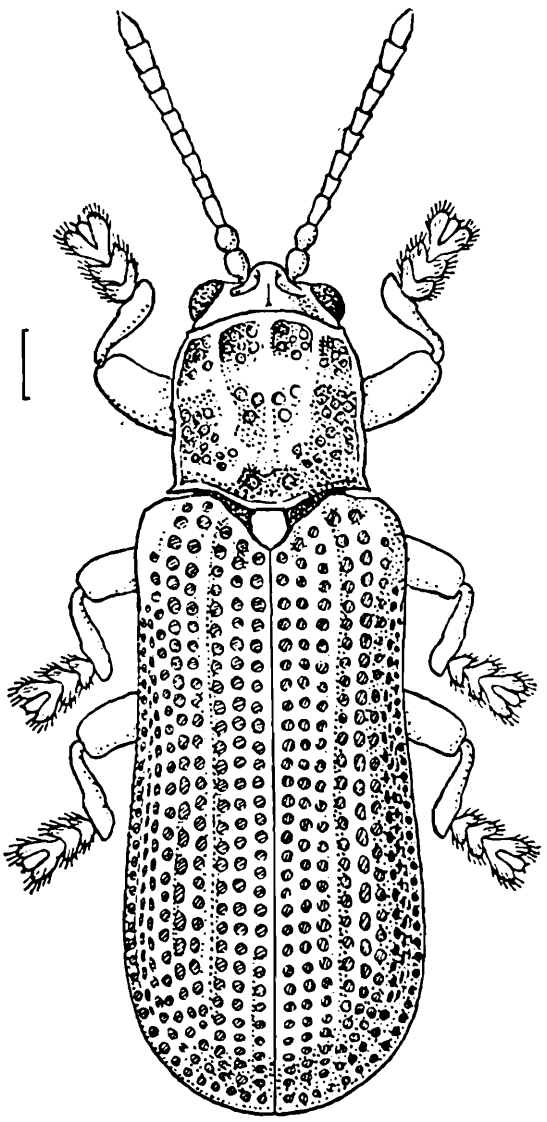


Fig. 33.—*Javeta pallida*, Baly.

rounded, the third joint elongate and subconical, the next joints similar and gradually thickened, the apical joint subacute; labrum transverse; mandibles with the apex truncate; maxillary palpi with the first joint small, the next two joints very small and obconical, the apical joint long ovate; labial palpi with the first joint small, second obconical, third ovate; the inter-antennal space not produced; eyes strongly convex. *Prothorax* subquadrate, convex and with excavations. *Scutellum* oblong-ovate. *Elytra* elongate, convex, strongly punctate-striate; no scutellar row of punctures. *Legs* short, robust; femora thickened anteriorly; tarsi broad, the inner lobes of at least the first two joints smaller than the outer.

Range. India and Borneo.

Only two species, one from Madras and another from Borneo, constitute the genus.

80. **Javeta pallida**, *Baly*.

Javeta pallida, Baly, Cat. Hisp. 1858, p. 108, pl. ii, f. 10, & pl. viii, f. 3.
Distolaca flavida, Gestro, Ann. Mus. Civ. Genova, 1911, p. 16.

Body elongate, convex, pale shining fulvous; eyes and mandibles black.

Head: antennæ equal in length to the head and thorax, robust. *Prothorax* rather longer than broad, the sides subparallel, sinuate behind, slightly narrowed in front, the posterior angles acute, the anterior margin straight; the surface transversely depressed behind, deeply and irregularly excavated on the sides and front, the excavated portions coarsely punctate, the disc irregularly shining, deeply pitted in the middle. *Scutellum* smooth, shining. *Elytra* very little broader at the base than the prothorax, the sides parallel, narrowly margined, the apex rounded; convex above, deeply and regularly punctate-striate; on each elytron there are ten rows of punctures, three rows next the suture, then a more or less raised costate interstice, beyond which after every two rows there is an indistinct costa; owing to a slight constriction in the middle of the elytron, the ninth row disappears there. *Underside* of the same colour as the upper side, smooth, shining and impunctate.

Length, 6–7 mm.

MADRAS: Nilgiri Hills.

Type in the British Museum. There are also specimens in the Indian Museum.

I have examined Dr. Gestro's type of *Distolaca flavida* which is in Mr. Andrewes' collection, as well as Baly's type of *Javeta pallida*, and I am of opinion that they are the same species.

Genus **WALLACEA**, *Baly*.

Wallacea, Baly, Cat. Hisp. 1858, p. 97; Chapuis, Gen. Col. xi, 1875, p. 282.

GENOTYPE, *Wallacea bowringi*, Baly (Java).

The insects belonging to this genus are elongate, with the elytra flat and projecting beyond the abdomen. The colour in almost every case is brown or reddish brown; in some species there are black stripes on the elytra, in others the apical portion of the elytra is black. *Head*, viewed from above, generally compressed antero-posteriorly; the eyes are convex, and the interocular space is elevated. The antennæ are gradually thickened after the fourth joint, the basal four or five joints are generally shining, the rest pubescent and dull; the first joint is larger than the second and much thicker. The cavity in which the mouth-parts are placed is in close proximity to the bases of the antennæ. This character distinguishes *Wallacea* from *Downesia*, in which the oral cavity is far removed from the antennæ. *Prothorax* generally quadrate, the anterior part being somewhat broader

than the posterior; in some species the upper side is gently convex, but sometimes it is quite flat. *Scutellum* narrow, elongate, smooth and shining. *Elytra* parallel-sided; there is no scutellar row of punctures; on each elytron generally there are eight rows, with two additional short rows about the middle; the interstices may be costate or quite plane. *Legs*: the claw-joint is rather broad and projects beyond the lobes of the third joint.

Range. India, Java, Sumatra, Borneo, Celebes, etc.

Sixteen species have been described under the genus, of which two occur in India and one in Burma.

Key to the Species.

1. Suture with a black stripe	*sita*, sp. n.
1′. Suture without a black stripe.	2.
2. Each elytron with a brown dorsal band and a marginal one	*limbata*, Gestro.
2′. Each elytron without a brown dorsal band, and rarely with a slight trace of a marginal one	*dactyliferæ*, sp. n.

81. Wallacea limbata, *Gestro.*

Wallacea limbata, Gestro, Ann. Mus. Civ. Genova, 1905 (1906), p. 468.

Body elongate, depressed; testaceous, shining; antennæ rufescent, the four basal joints shining, the following joints pubescent; vitta along the margins and at the apex of the elytra fuscous; on each elytron from the humerus to the apex there is a brown band, which is enlarged posteriorly, uniting with its fellow at the suture towards the apex; along the margin there is another band which is quite separate from the dorsal band.

Head finely punctate, with a fine impressed longitudinal line in the middle. *Prothorax* broader than long, parallel-sided, the anterior angles obliquely truncate, slightly sinuate in front of the posterior angles, which are acute and prominent; upper surface slightly convex, a longitudinal smooth line down the middle, with a small fovea at base in the middle, the rest of the surface with moderately large and irregular punctures. *Elytra* depressed, regularly punctate-striate; the punctures are moderately large and elongate, the interstices at the sides and apex slightly elevated.

Length, $5\frac{1}{2}$ mm.

Madras.

Type in the Genoa Museum.

In one of the examples the elytral band is represented by a small mark at the apex, in other respects it agrees well with the type.

82. Wallacea dactyliferæ, sp. nov.

Body elongate, flat, entirely brown; in some specimens towards the apex and at the sides the elytra are blackish.

Head viewed dorsally compressed antero-posteriorly; eyes and the interocular space raised, the latter punctate and with a longitudinal impression in the middle. Antennæ with the first four joints shining, the fifth to the apex thicker, larger and pubescent; the first joint larger and more rounded than the second, the third longer than the second, but shorter than the first. *Prothorax* much broader than the head, as a general rule a little broader anteriorly than posteriorly (in some specimens the difference is very slight, the sides almost parallel); the lateral margins sometimes distinctly sinuate, bending rather sharply towards the anterior angles, which are obtuse; the anterior margin a little produced in the middle, convex; the posterior

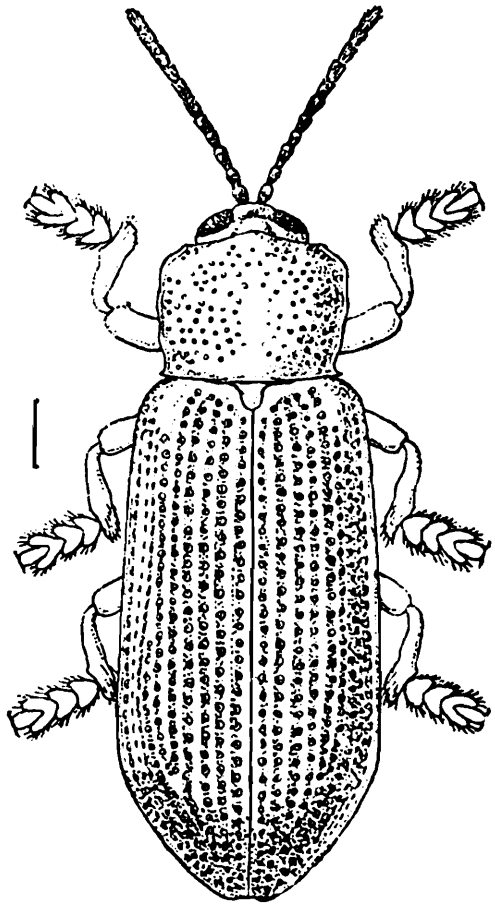


Fig. 34.—*Wallacea dactyliferæ*, Maulik.

margin straight, a transverse groove running along with it, a small depression in the middle in front of the base (more pronounced in some specimens than in others), sharply notched at the posterior angles, which are toothed. The upper surface is more or less convex (in some specimens flat or depressed), the anterior and posterior borders, a longitudinal space along the middle line, and two oblique areas from the anterior angles, one on each side, impunctate, the rest covered with large punctures; some punctures at the front are more or less elongate; besides the large punctures very small ones may be observed on the surface. *Scutellum* small, smooth, impunctate; the apex rounded.

Elytra a little broader than the prothorax, parallel-sided, slightly narrowed towards the apex, and projecting much beyond the abdomen; on each elytron there are nine rows of punctures at the base and ten rows at the broadest part, the rows meeting in pairs towards the apex; the punctures are large and rounded, the interstices more or less costate. *Underside* smooth, the abdomen finely punctate. The claw-joint projects beyond the lobes of the third joint; the claws are divaricate.

Length, 5½–6 mm.

MADRAS: Chingleput, 25. xi. 1909; Vamambady, vi. 1911. BENGAL: Pusa, ix. 1909.

Type in Mr. Andrewes' collection, London; cotypes in the British Museum, Indian Museum, and the Coimbatore Museum.

In some specimens, as I have already observed, on each side of the elytron there is a blackish band, but in no case among the twenty-nine examples before me is there a brown band in the middle of the elytra. It may be that the present species is a variety of *W. limbata*; but unless this is proved by breeding, I prefer to regard it as a separate species.

This insect has been reported to do damage to the tender shoots of the date palm. Hence the specific name.

83. **Wallacea sita**, sp. nov.

Body elongate, subnitid or shining; the elytra and pronotum light yellow-brown; the antennæ and legs black; the underside dark red-brown, except the sides of the sternum, which are black; the suture, with the exception of a short distance from the apex, black.

Head depressed round the bases of the antennæ; the interocular space is dark red-brown, convex, with a deep longitudinal sulcation along the middle, and punctate. The antennæ, as compared to the length of the body, are rather short; the five basal joints are smooth, shining and finely punctate; the six apical joints slightly thicker, cylindrical and pubescent; the basal joint is small and rounded, the second longer than the first, the third the longest, the fourth and fifth equal to each other, the second to fifth narrowed at the base and clavate at the apex, the sixth to tenth almost equal to each other, and the last joint slightly longer, narrowed towards the apex and blunt. *Prothorax* quadrate, the sides straight and margined, the anterior margin gently convex, the posterior straight; the anterior angles are rounded and bent down in front, the posterior ones acute. The upper surface is gently convex from side to side, with a deep fovea in the middle of the base, and six roughly arranged longitudinal lines of a few coarse and elongate punctures, three on each side of a longitudinal middle area which is impunctate; the coarse punctures are larger on the basal area and comparatively finer and less deep in front; otherwise the whole surface is impunctate. *Scutellum* narrow, elongate, smooth, impunctate, dark red-brown

or almost black. *Elytra* elongate; the suture is raised, broad and smooth. In the male the black stripe on the suture terminates at the point where the suture commences to be dehiscent. The surface is regularly punctate-striate; on each elytron there are ten regular rows across the middle, the four marginal rows gradually uniting into one row at the base below the humerus; the rows converge and meet in pairs on the apical area; the punctures are large and subquadrate; the interstices are gently raised, more strongly so at the apex. *Underside*: the legs are short and stumpy, the femora thickened, the tarsi almost equal in length to the tibiæ; the claw-joint of the tarsus projects beyond the bilobed joint; the claws are divaricate.

Length, ♂ 8 mm., ♀ 9½ mm.

♂. The elytra do not project beyond the abdomen and are dehiscent at the apex.

♀. The elytra project beyond the abdomen and are not dehiscent.

Burma: Karen Hills (*Doherty*).

Types of male and female in the British Museum.

Described from two examples, one male and one female.

Genus **DOWNESIA**, *Baly*.

Downesia, Baly, Cat. Hisp. 1858, p. 107; Chapuis, Gen. Col. xi, 1875, p. 329; Gestro, Ann. Mus Civ. Genova, 1899, pp. 218, 223.

Hanoia, Fairmaire, Ann. Soc. Ent. France, (6) viii, 1888, p. 375; Gestro, Bull. Soc. Ent. Ital. 1901, p. 84.

Genotype, *Downesia insignis*, Baly.

The insects are generally narrow and elongate, reddish brown or black. *Head*: the mouth-parts are situated at some little distance from the base of the antennæ. The clypeus is distinct. The first two joints of the antennæ are generally rounded and as a rule not covered with hair; the apical five or six joints are generally slightly thickened and more thickly covered with hair than the basal joints. The eyes are convex, sometimes very strongly so. *Prothorax* generally quadrate, sometimes longer than broad; at the base in the middle there is always a transverse groove which may extend to the sides; the lateral margins are subreflexed. The upper surface is gently convex, always smooth, and moderately finely punctate, being sometimes impunctate. *Scutellum* generally quadrate, with the apex more or less rounded; sometimes it is narrow and elongate. *Elytra* elongate, parallel-sided, either as broad as the prothorax or slightly broader, with the apex broadly rounded. Each elytron has generally three costæ and eight rows of punctures; the costæ are as a rule broadened and flattened towards the base and are more strongly raised towards the apex. The rows of punctures are arranged in pairs between a pair of costæ, sometimes converging (if not uniting) towards the base, but in some cases they are parallel; sometimes there is only one row of punctures

between the suture and the first costa; there is no scutellar row of punctures. The punctures are rounded, often being arranged in such a way that one puncture is opposite to the interval between two punctures of the next row. Owing to the fact that the rows of punctures are arranged in pairs the alternate interstices become prominent. I have used the two terms interstices and costæ alternatively in this genus. *Legs*: in some cases the tarsus is almost equal in length to the tibia; the claw-joint projects more or less beyond the lobes of the third joint.

Range. India, Burma, Ceylon, Indo-Malay region, Sumatra.

Out of the total eighteen species, thirteen occur within our faunistic limits.

Key to the Species.

1.	Pronotum with longitudinal striæ . ..	*strigicollis*, Baly, p. 112.
1′	Pronotum without longitudinal striæ.	2.
2.	Between the suture and the first costa one row of punctures only, *i. e.*, there are seven rows of punctures on each elytron	*insignis*, Baly, p. 116.
2′.	Between the suture and the first costa the row of punctures is doubled towards the apex, *i. e.*, there are eight rows of punctures at least on the apical area, if not near the middle	3.
3.	Rows of punctures between the suture and the first costa uniting at about the middle or just in front of the middle (anteriorly) and continuing to the base as one row .	4.
3′.	Rows of punctures between the suture and the first costa uniting usually at the apex or behind the middle and then continuing as one row ...	9.
4.	Insect entirely black above, abdomen fulvo-piceous	5.
4′.	Insect not entirely black above	6.
5.	Insect larger ($8\frac{1}{3}$–9 mm.); prothorax as long as broad	*grandis*, Gestro, p. 121.
5′.	Insect smaller ($6\frac{1}{3}$–$7\frac{1}{4}$ mm.); prothorax longer than broad	*elegans*, Gestro, p. 121.
6.	Base of the elytra distinctly flattened, the interstices there much broader than at the apex	7
6′.	Base of the elytra not so flattened, the interstices almost as broad at apex as at base	8.
7.	Prothorax distinctly broader; interstices on the posterior half of the elytra distinctly elevated . .	*fulvipennis*, Baly, p. 115.
7′.	Prothorax not distinctly broader; interstices at the apex imperceptibly elevated .	*gestroi*, Baly, p. 114.

8.	Insect reddish brown, with the tarsi rufo-piceous and apex of elytra black.	*kanarensis*, Ws., p. 113.
8′.	Insect black, except head, prothorax, nearly basal half of elytra, anterior femora and tibiæ, and underside of mid-femora at the apex, which are yellow-brown	*ceylonica*, sp. n., p. 121.
9.	Insect entirely black above .	10.
9′.	Insect not entirely black above . . .	11.
10.	Insect with the abdomen brown	*atrata*, Baly, p. 118.
10′	Insect with the underside entirely black	*andrewesi*, Gestro, p. 118.
11.	General colour yellow, with apical half of elytra, eyes, antennæ and tarsi blackish; size 4½ mm.	*ratana*, sp. n., p. 120.
11′.	General colour not yellow; size 5–6 mm.	12.
12.	Colour piceous, with antennæ and tarsi black, abdomen piceo-fulvous . ..	*picea*, Baly, p. 115.
12′.	Black, with head (antennæ excepted), prothorax, scutellum, base of elytra, and legs (tarsi excepted) chestnut-brown	*basalis*, Baly, p. 116.

84. **Downesia strigicollis**, *Baly*.

Downesia strigicollis, Baly, Ent. Mo. Mag. 1876, p. 128; id., Ann. Mus. Civ. Genova, 1888, p. 659.

Body elongate, narrow, black; upper side subopaque, underside shining, abdomen fulvous; the median ridge on the pronotum brownish black.

Head with the space between the eyes brown, punctate, and with an impressed line in the middle; the margin of the eyes smooth and impunctate. The eyes are large, brown, edged with black, not so convex as in *D. atrata*, with a short row of punctures along their upper edge. The first two joints of the antennæ are thicker and larger than each of the following joints to the sixth; the seventh to eleventh much thicker and larger than the other joints and more thickly covered with greyish silky hairs; the apical joint is the longest, thickest, and bluntly pointed. *Prothorax* subquadrate, rather longer than broad, the sides parallel, slightly constricted in the middle, the margin subreflexed and narrowest at the constriction; the anterior border is subcylindrical, impressed with a single row of punctures, the angles being nearly rectangular with their apices obtuse; the basal margin is impressed with a deep transverse groove, the base notched at the posterior angle, the latter being armed with a fine lateral tooth. The upper surface is divided by a broad ridge along the median line into two oblique planes, the surfaces of which are closely covered with slightly oblique longitudinal striæ, which become more or less obsolete near the lateral border, thus forming a

rugose surface. *Scutellum* small, insignificant, triangular, shining. *Elytra* hardly broader at the base than the prothorax, parallel-sided, very slightly dilated behind the middle, the apex obtusely rounded, emarginate at the sutural angle, the apical margin very finely serrate. Each elytron has three costæ and six rows of punctures. The costæ are broadened and flattened at the base, raised into a sharp ridge at the apex, and more or less obsolete in the middle; the flattened portion at the base presents the appearance of having been sharply pared off. The second and third rows of punctures unite into one row on the basal half; in the pairs of rows the punctures tend to become alternate instead of lying in the same transverse line. *Underside* shining, smooth. Legs short, the tibiæ shorter than the tarsi, the anterior pair compressed and dilated at the base; the tarsi broad and large, the claw-joint much smaller than each of the other joints and not projecting beyond the lobes of the third joint; claws divaricate.

Length, $5\frac{3}{4}$ mm.

BURMA (*Fea*). COCHIN CHINA.

Type in the British Museum.

85. Downesia kanarensis, *Ws.*

Downesia kanarensis, Weise, Deut. Ent. Zeits. 1897, p. 123.

Body elongate, reddish brown, shining; the antennæ and tarsi rufo-piceous, the apex of the elytra black.

Head smooth, impunctate. *Prothorax* quadrate, longer than broad, the sides straight and parallel, the margins reflexed, the anterior angles rounded; along the basal margin there is a groove from side to side, the posterior angles toothed. The surface from side to side is subconvex and covered with subremote punctures, except the anterior border. *Scutellum* small, elongate, smooth, impunctate, the apex rounded. *Elytra* broader than the prothorax, the sides parallel, narrowly margined, the apex rounded. There are eight rows of deep punctures on each elytron, the first and second uniting towards the base; the three costæ are more or less flat towards the base, but strongly raised on the black apical area; between two costæ there is a pair of rows of punctures. *Underside* of the same colour as the upper side; the femora a little bent, more thickened in the middle than at the base or apex; the tibiæ short, almost equal to the tarsi in the fore legs; the tarsi of the fore legs larger than those of the other legs; the claw-joint hardly projecting beyond the lobes of the third joint.

Length, $4\frac{4}{5}$–$5\frac{1}{2}$ mm.

MADRAS: Kanara (*T. R. D. Bell*).

Type in Weise's collection; cotype in Mr. Andrewes' collection.

86. **Downesia gestroi**, *Baly*.

Downesia gestroi, Baly, Ann. Mus. Civ. Genova, 1888, p. 660.

Body elongate, flattened dorsally, fulvous or rufo-fulvous; the antennæ, tarsi, and the apical portion of the elytra black.

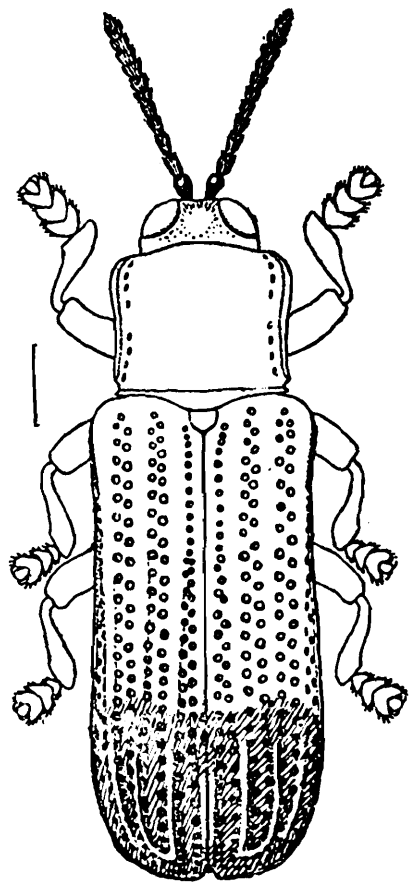


Fig. 35.—*Downesia gestroi*, Baly.

Head with the space between the antennæ slightly concave, that between the eyes sparsely punctate, each puncture having a small hair; it is also punctate along the upper edge of the eyes and along the front margin of the prothorax; in the middle of the upper surface of the head there is an impunctate smooth part. There are a few hairs on the clypeus. The eyes are convex, brown, edged with black. The antennæ are scarcely longer than the head and thorax, slightly thickened towards the apex, thinly covered with hairs, except the first joint, which is rounded and large; the second joint smaller but stouter than the third, the last joint the largest and bluntly pointed. *Prothorax* quadrate, the sides straight, obsoletely diverging towards the apex, the lateral margins subreflexed and gradually vanishing towards the posterior angles; the front margin subcylindrical, the anterior angles rounded, the basal margin with a transverse impressed line notched at the posterior angles, the latter with a minute tooth. Upper surface imperceptibly convex, smooth and shining, very minutely and rather remotely punctured. *Scutellum* triangular, small, shining, impunctate. *Elytra* broader than the thorax,

about three times its length, their sides parallel, very slightly dilated towards the apex, the latter regularly rounded, the humeral callus projecting, the upper surface convex at the sides and flattened along the suture. There are eight rows of punctures on each elytron; the first and second rows unite anteriorly, the other rows are arranged in pairs, which converge anteriorly, and the seventh and eighth commence below the humeral callus; towards the apex the rows of punctures are equidistant. There is a dark ring round each puncture; each interspace is broad and thickened, and imperceptibly costate towards the apex. *Underside* smooth, shining, with a few hairs on the prosternum. Tarsi black, strong, robust, almost as long as the tibiæ; claw-joint hardly projecting beyond the lobes of the third joint; claws divaricate.

♂ Anterior tibiæ with a conical tooth towards the apex.

♀ Anterior tibiæ unarmed.

Var. A. Antennæ piceous, the rest as in the type.

Var. B. Elytra totally fulvous.

Length, 5–7½ mm.

SIKKIM: Mungphu (*Atkinson*). BURMA: Bhamo; Teinzo; Tharrawaddy; Taung-ngu; Thagata, Tenasserim.

Type in the Genoa Museum.

87. Downesia fulvipennis, *Baly*.

Downesia fulvipennis, Baly, Ann. Mus. Civ. Genova, 1888, p. 660.

Body narrow, elongate, black, shining; elytra fulvous; legs sometimes nigro-piceous. Thorax quadrate, almost as long as broad, upper surface smooth, impunctate. Elytra punctate-striate, each elytron with eight rows of punctures, the arrangement of the rows as in *D. gestroi*; alternate interspaces broadened and thickened, distinctly raised into costæ towards the apex.

♂ Anterior tibiæ armed with a conical tooth towards the apex.

Length, 7–8 mm.

BURMA: Bhamo (*Fea*); Thagata, Tenasserim.

Type in the Genoa Museum.

This species very closely resembles *D. gestroi*. The distinguishing characters are: (1) its larger size, (2) the thorax is distinctly although slightly broader, (3) the elytra are more strongly punctured, (4) the rows of punctures are nearly equidistant behind the middle, (5) the interspaces on the posterior half of the elytra are distinctly elevated.

88. Downesia picea, *Baly*.

Downesia picea, Baly, Ann. Mus. Civ. Genova, 1888, p. 661.

Body elongate, subcylindrical, piceous, shining; antennæ and tarsi black, abdomen piceo-fulvous.

Head smooth, impunctate; the antennæ slightly thickened towards the apex, not exceeding the head and prothorax in length. *Prothorax* subquadrate, scarcely longer than broad; the sides straight and parallel from the base nearly to the apex, thence converging; upper surface moderately convex, deflexed at the apex, finely and subremotely punctate. *Elytra* more than three times the length of the thorax, dilated posteriorly, their apices conjointly regularly rounded; each elytron with seven rows of large, deeply impressed punctures, the middle of the outer row obsolete; at the extreme apex next to the suture are faint traces of an eighth row; the suture as well as the first, third, and fifth interspaces are strongly elevated.

Length, 6 mm.

BURMA: Teinzo, v. 1886 (*Fea*).

Type in the Genoa Museum.

89. **Downesia basalis**, *Baly*.

Downesia basalis, Baly, Ann. Mus. Civ. Genova, 1888, p. 662.

Body narrow, elongate, subcylindrical, black, shining; the head (antennæ excepted), prothorax, scutellum, base of the elytra, and legs (tarsi excepted), chestnut-brown.

Head: upper surface smooth, impunctate; antennæ scarcely equal in length to the head and prothorax, slightly thickened towards the apex. *Prothorax* scarcely longer than broad, sides straight and parallel from the base to beyond the middle, thence converging towards the apex; upper surface convex, deflexed anteriorly, impressed with a few very minute punctures, only visible under a lens. *Elytra* sculptured as in *D. picea*, only differing in the short row of punctures at the apex of each elytron being more distinctly defined.

Length, 5 mm.

BURMA: Bhamo (*Fea*).

Type in the Genoa Museum.

90. **Downesia insignis**, *Baly*.

Downesia insignis, Baly, Cat. Hisp. 1858, p. 107, pl. viii, f. 2.

Body narrow, subcylindrical, shining, black.

Head smooth, sparsely covered with punctures. The antennæ short, robust, equal in length to the head and thorax, thickened towards the apex, sparsely covered with hair; the first two joints equal and rounded, third to sixth joints smaller and rounded, seventh to eleventh much stouter and longer than the preceding joints, apical joint longest, stoutest and pointed. *Prothorax* rather longer than broad; the sides subparallel, notched at the base, slightly sinuate in the middle, the margins reflexed; the anterior angles nearly rectangular, the anterior margin produced and convex, and a deep groove along the basal margin; the

surface from side to side is subconvex and covered with subremote punctures. *Scutellum* small, smooth, impunctate, the apex rounded. *Elytra* as broad at the base as the prothorax, parallel-sided, narrowly margined, convex, the apex rounded. There are

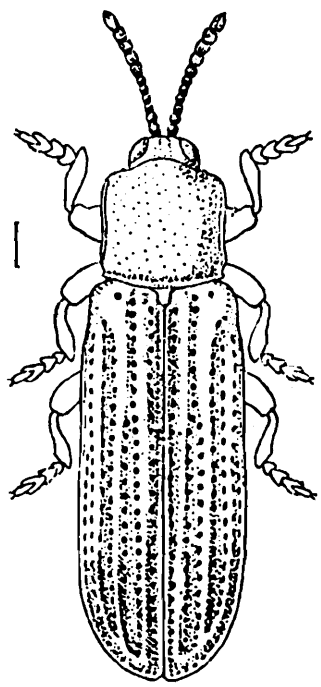


Fig. 36.—*Downesia insignis*, Baly.

seven rows of deep punctures on each elytron; towards the base the second and third rows unite and continue as one row, the same applies to the sixth and seventh rows; the alternate interstices are costate, so that there are three costæ on each elytron, which become sharp ridges at the apex; at the base they are flattened, the second more so than the others. *Underside* shining, black; the abdomen finely and sparsely punctate. Legs short

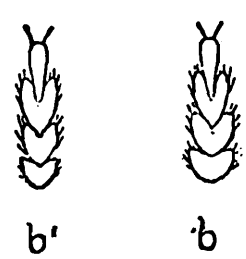


Fig. 37.—*Downesia insignis*, Baly: *b*, front tarsus; *b'*, second and third tarsi.

and robust; the front tarsus is broader at base and narrower at the apex (see fig. 37, *b*), the second and the third tarsi have all the joints except the last more or less equal in breadth (see fig. 37, *b'*); the claw-joint projects much beyond the third joint and is twice as long; claws strong, large.

Length, 4 mm.

North India.

Type in the British Museum.

91. **Downesia andrewesi**, *Gestro.*

Downesia andrewesi, Gestro, Ann. Mus. Civ. Genova, 1911, p. 21.

Body elongate, narrow, subparallel, shining, black; on the upper surface of the head in front there is a small rufescent area.

Head smooth, with a few obsolete and fine punctures; eyes strongly convex. The antennæ longer than the head and prothorax, thickened towards the apex; the three basal joints almost hairless, the rest of the joints more thickly covered with hair; the first two joints larger than each of the following joints up to the seventh; the third to sixth equal, thickened in the middle; the seventh to eleventh much thicker and more hairy; the last joint largest, thickest and bluntly pointed. *Prothorax* scarcely broader than the head, subquadrate, longer than broad, the sides sinuate, the margins reflexed; the anterior margin straight, the angles rounded; the posterior margin convex, the angles notched and with a minute sharp point: surface gently convex, depressed and sulcate at base in the middle, with a depression on each side behind the middle, and a few fine obsolete scattered punctures on the disc. *Scutellum* as broad at the base as at the apex, the sides parallel, the surface smooth, impunctate and depressed in the middle. *Elytra* broader at the base than the prothorax, subparallel, rounded at the apex, the humeral callus prominent. Surface flat at base and along the suture; each elytron with seven rows of punctures, the second and the third rows parallel, very close to each other, as are the fourth and fifth, and the sixth and seventh; the row between the suture and the first costa is doubled at the apex; the interstices are flattened and broadened at base and sharply elevated at the apex. *Underside* entirely black, smooth, shining, impunctate. Legs short and stout, the tarsi almost as long as the tibiæ, the basal joints large and broad, the fourth joint hardly projecting beyond the lobes of the third joint; the claws divaricate.

Length, 5⅓ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in the Genoa Museum; cotype in Mr. H. E. Andrewes' collection.

92. **Downesia atrata**, *Baly.*

Downesia atrata, Baly, Trans. Ent. Soc. Lond. 1869, p. 377.

Body elongate, narrow, shining, black; underside of abdomen brown.

Head smooth, impunctate, or with a few punctures; eyes strongly convex, brown or very dark brown, edged with black. The antennæ not longer than the head and prothorax, from the third joint gradually thickened towards the apex and covered with stiff bristly hairs, which are denser on the five apical joints; the first two joints hairless, first rounded and thicker, second

slightly longer and more slender; the third to sixth equal, seventh to eleventh much thicker, the last joint longest and bluntly pointed. *Prothorax* quadrate, a little longer than broad, the sides parallel, the lateral margins sharp and subreflexed; the front margin straight, the anterior angles rounded; the posterior margin straight, with a deeply impressed line from side to side, each of the posterior angles with a minute tooth. The upper surface convex and finely and remotely punctate; the puncturing varies, in some specimens the punctures being closer and more numerous than in others; in one female specimen they are almost obsolete. *Scutellum* small, smooth, shining, impunctate, sometimes with a depression in the middle. *Elytra* broader than the prothorax at

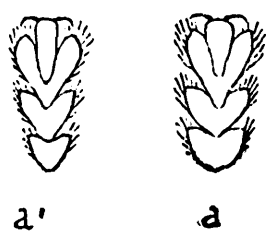


Fig. 38.—*Downesia atrata*, Baly: *a*, front tarsus; *a'*, second and third tarsi.

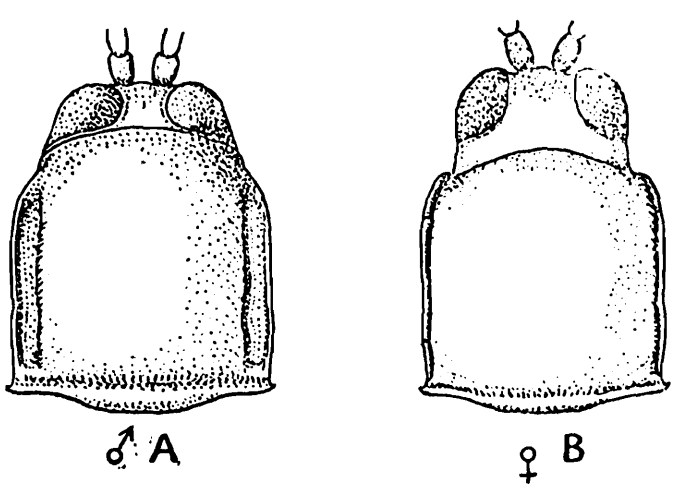


Fig. 39.—*Downesia atrata*, Baly: head and prothorax of ♂ and ♀.

the base, subparallel-sided, rounded at the apex; the humeral callus prominent, smooth, shining. On each elytron there are seven rows of punctures at base and three costæ; the costæ are flattened and broadened at the base and are sharp ridges at the apex; the row between the suture and the first costa is doubled towards the apex, so that there are eight rows at the apex; the second and third rows of punctures run as a parallel pair, and so do the fourth and fifth, and the sixth and seventh; in the female the costæ are more flattened and the punctures more defined than in the male. *Underside* smooth, shining, impunctate; the prosternum is wrinkled and pitted in some specimens, but it may be smooth and impunctate; the posterior edges of the abdominal sternites are sometimes obsoletely punctate. Legs short and

stout, the tibiæ almost as long as the tarsi; the front tarsus has all the joints except the claw-joint equally broad (fig. 38, *a*); the second and third tarsi are narrower at the base and broadened towards the apex, the first joint being much smaller than that of the front tarsus (fig. 38, *a'*); the claws are divaricate.

♂ The anterior margin of the prothorax almost touches the eyes, which are more approximated; the prothorax has an impressed border on each side (fig. 39, A).

♀ The anterior margin of the prothorax is distant from the eyes, which are widely separated; the prothorax has no impressed lateral borders (fig. 39, B).

Length, ♂ 5½–7 mm., ♀ 7–7½ mm.

ASSAM: Manipur (*Doherty*). BURMA: Ruby Mines (*Doherty*); Rangoon.

Type in the British Museum.

93. **Downesia ratana**, sp. nov.

Body elongate, shining, yellow; the apical half of the elytra, the eyes, antennæ and tarsi, blackish.

Head with the eyes large, the interocular space narrow, smooth, impunctate. The antennæ are short, gradually thickened towards the apex, and sparsely covered with hair; the second joint is longer than either the first or third, the last joint being the largest. *Prothorax* quadrate, a little longer than broad, the sides parallel, margined and with an impressed border; the border at the sides may be a secondary sexual character, as is the case in *D. atrata*; a transverse groove along the basal margin, the posterior angles slightly notched; the upper surface is gently convex from side to side, and finely and sparsely punctate. *Scutellum* small, quadrate, longer than broad, smooth, impunctate. *Elytra* slightly broader than the prothorax, parallel-sided, regularly rounded at the apex. On each elytron there are three costæ, which are prominent throughout, sharper at the apex and broadened at the base; the usual eight rows of punctures on each elytron are present; the first and second rows unite near the apex and continue as one to the base, the pair of rows between the second and third costæ unite near the base, and the pair between the third costa and the margin unite in the middle. *Underside* moderately thickly punctate, the punctures much larger than those on the prothorax. The claw-joint of the tarsus projects beyond the third joint; claws divaricate.

Length, 4½ mm.

BURMA: Tavoy, Tenasserim (*Doherty*). MALAY STATES: hills near Taiping, Perak, 26–30. xii. 1915 (Indian Museum).

Type in the British Museum, cotype in the Indian Museum.

Described from two examples.

This is a beautiful little insect; the specific name *ratana* is a Sanskrit word meaning jewel.

94. Downesia grandis, *Gestro.*

Downesia grandis, Gestro, Ann. Mus. Civ. Genova, 1890, p. 241

Body elongate, depressed, shining, black; the underside of the abdomen fulvo-piceous.

Head: the antennæ are hardly longer than the head and prothorax together, being gently and gradually thickened from base to apex. *Prothorax* quadrate, moderately convex, the surface finely punctate. *Elytra* a little broader than the prothorax, gently dilated behind the middle and rounded at the apex. Each elytron has eight rows of punctures, the rows arranged in pairs; the first and the second unite into one row on the basal half; there are three costæ on each elytron; the first and second are moderately convex towards the base, but sharply raised towards the apex, the third is raised throughout its length; the costæ and punctures are obsolete at the base.

♂ Apex of the anterior tibia armed with a conical tooth.

♀ Anterior tibia unarmed.

Var. A. Head, thorax, base of elytra, and legs (except the apex of the tarsi), fulvo-piceous.

Var. B. Totally fulvo-piceous, the tarsi anteriorly black.

Length, $8\frac{1}{2}$–9 mm.

BURMA: Karen Hills, 3000–3500 ft. (*L. Fea*).

Type in the Genoa Museum.

95. Downesia elegans, *Gestro.*

Downesia elegans, Gestro, Ann. Mus. Civ. Genova, 1890, p. 242.

Closely allied to *D. grandis*, but smaller; the antennæ are a little longer than the head and prothorax together and proportionately longer than those of *D. grandis*. The prothorax is especially characteristic; in this species it is longer than broad, in *grandis* it is as long as broad; the sides are gently sinuate. The elytra have the same number of rows of punctures, similarly arranged, but the interstices are more elevated and are so up to the base, so that the smoothness at the base of the elytra found in other species of the genus does not exist in this. The abdomen is similarly coloured. There is in the male a small tooth at the apex of the anterior tibiæ.

Length, $6\frac{1}{3}$–$7\frac{1}{4}$ mm.

BURMA: Karen Hills, 3000–3700 ft. (*L. Fea*).

Type in the Genoa Museum.

96. Downesia ceylonica, sp. nov.

Body elongate, narrow, shining; the head (except the collar), prothorax, nearly half of the elytra, anterior femora and tibiæ, and underside of mid femora at the apex, yellowish brown; the rest of the body is black.

Head slightly broader than the prothorax; eyes large, convex; interocular space smooth, impunctate. Antennæ with first joint rounded, the second and third joints almost equal to each other in length, the fourth to the last joints very slightly thickened and sparsely covered with hair. *Prothorax* longer than broad, the sides parallel, the lateral margins subreflexed, the apical margin blackish; a transverse groove along the basal margin, posterior angles toothed; upper surface gently convex, smooth, impunctate. *Scutellum* broader at base than at apex, smooth, shining, impunctate; black, with a brownish tinge. *Elytra* broader than the prothorax, parallel-sided. Each elytron has eight rows of punctures arranged in pairs, the first and second rows united towards the base, the seventh and eighth united in the middle, each puncture having a darkish ring round it; the alternate interstices are costate towards the apex. *Underside* smooth, shining; the abdominal sternites sparsely and finely punctate. Tarsi broad, almost equal to the tibiæ in length; the claw-joint hardly projecting beyond the third joint, the claws strong.

Length, 6 mm.

CEYLON: Bogawantalawa, 4900–5200 feet, 21. iii.–4. iv. 1882 (*G. Lewis*).

Type in the British Museum.

Described from three examples.

Genus **AGONIA**, *Weise.*

Agonia, Weise, Deut. Ent. Zeits. 1905, p. 116; Maulik, Proc. Zool. Soc. Lond. 1916, p. 571.

Gonophora, Baly, Cat. Hisp. 1858, p. 108 (pars); Chapuis, Gen. Col. xi, 1875, p. 303.

Distolaca, Baly, l. c. p. 116 (pars); Chapuis, Gen. Col. xi, 1875, p. 305; Gestro, Ann. Mus. Civ. Genova, 1897, p. 67

GENOTYPE, *Agonia wallacei*, Baly (Sumatra, Borneo, etc.).

In 1905 Weise erected this genus, separating it from *Gonophora* owing to a difference in the structure of the prothorax. In *Gonophora* the prothorax is broadest in the middle, whence it is suddenly narrowed in front (as a rule sharply cut out) and gradually narrowed behind, the lateral edges being irregular and generally with fine saw-like serrations. In *Agonia* the prothorax is almost cylindrical, being often narrowed in the middle, with the lateral edges smooth, even, and sometimes quite obliterated. In founding this genus Weise mentioned five species, namely, *wallacei*, Baly, *suturella*, Baly (India, Malacca, etc.), *saundersi*, Baly (Sylhet), *fuscipes*, Baly, and *insignis*, Baly (Celebes). As one of these must be taken as the type of the genus, I select the first mentioned, which represents well the type of prothorax in *Agonia*.

Insects belonging to this genus vary a great deal in size (from

15 mm. to 4 mm.). The colours are generally brown, black, or both.

Head broad, smooth, and slightly depressed between the antennæ. The eyes are convex and prominent. The first two joints of the antennæ are generally small, the third joint being very often the longest, though not always so; the following eight joints may become slightly thicker. The antennæ are generally covered with hairs, but sometimes the two basal joints are almost hairless. *Prothorax* semicylindrical in shape, often narrowing from the base towards the apex. The sides may be straight or slightly sinuate, and may or may not be edged, the edges being always smooth. The upper surface is generally convex and punctate, and often with depressions and elevations. *Scutellum* narrow and elongate. *Elytra* parallel-sided or slightly broadened behind. According to the number of costæ on each elytron this genus is divided into three subgenera, namely, *Ekagonia*, Maulik, *Agonia*, s. str., and *Agonella*, Weise. *Ekagonia* has four costæ and ten rows of punctures on each elytron, *Agonia* s. str., has three costæ and eight or more rows, and *Agonella* two costæ and six rows of punctures. In *Ekagonia* the eyes are strongly convex, the costæ are low and the rows are smooth and parallel, showing affinity to the previous genus *Downesia*; in *Agonella* the costæ are higher, the punctures are coarser, and the body is more dilated behind—characters which are strongly marked in the next genus *Gonophora*; in *Agonia*, s. str., these characters are intermediate. Within our faunistic limits no species but those of *Agonia* proper occur. *Underside* generally of one colour, but sometimes the articulations and either the basal or apical sternites of the abdomen have a darker colour. The sides of the thorax are sometimes coarsely punctate. The front tarsi are generally large and broad, equalling the tibiæ in length, a character found in the genus *Downesia*. The claw-joint hardly projects beyond the lobes of the third joint; the claws are generally inconspicuous, being concealed in the hairs of the lobes of the third joint.

Range. India, Burma, Ceylon, Malay Archipelago, Africa.

Key to the Species.

1.	Elytra entirely of one colour.	11.
1′.	Elytra not entirely of one colour	2.
2.	Elytra red or yellow, with at least a part of the suture stained black or piceous	3.
2′.	Elytra differently coloured .. .	5.
3.	Elytra red, with the suture entirely and part of the extreme apical margin black	*suturella*, Baly, p. 133.
3′.	Elytra red or yellow, with a part of the suture only black or piceous	4.
4.	Elytra red; on the apical area between the third costa and the lateral margin four rows of punctures	*suturellamima*, sp. n., p. 134.

4′	Elytra yellow; on the apical area between the third costa and the lateral margin two rows of punctures	*pallidipennis*, sp. n., p. 135.
5.	Elytra black, with the extreme apical margin and the lateral margins up to the middle brown . . .	*andrewesi*, Weise, p. 140.
5′	Elytra yellow-brown or red-brown with the apical area black . .	6.
5″.	Elytra chequered with yellow and black	8.
6.	Between the suture and the first costa on each elytron three rows of punctures; length 11½ mm.	*apicipennis*, Baly, p. 126.
6′.	Between the suture and the first costa two rows of punctures . . .	7.
7.	About half of the elytra from the apex is black, the line between the reddish and black portions being well-defined; size larger, 6 mm. .	*himalayensis*, sp. n., p. 127.
7′.	Only the apical third of the elytra is brownish black, with the boundary between the brown and black portions ill-defined; size smaller, 4 mm.	*tavoya*, sp. n., p. 128.
8.	Prothorax with five dark spots	*maculigera*, Gestro, p. 128.
8′.	Prothorax without five dark spots . .	9.
9.	Prothorax with narrow black bands on the lateral margins	*cribricollis*, Gestro, p. 129.
9′.	Prothorax without black bands on the lateral margins but with a short longitudinal black spot in the centre of the disc.	10.
10.	Antennæ black and longer	*nigricornis*, Gestro, p. 130.
10′.	Antennæ yellowish and shorter . .	*fallax*, Gestro, p. 131.
11.	Elytra yellow-brown or brownish red.	12.
11′.	Elytra black or bluish black .	15.
12.	Between the suture and the first costa at least three rows of punctures	13.
12′.	Between the suture and the first costa two rows of punctures . .	14.
13.	Between the first and second costæ three rows of punctures; size smaller, 12 mm.	*saundersi*, Baly, p. 125.
13′.	Between the first and second costæ more than three rows of punctures; size larger, 14 mm. . . .	[p. 131. *cherapunjiensis*, Maulik,
14.	The external or third costa on each elytron is almost obliterated in the middle	*parvula*, Gestro, p. 133.
14′	The external costa is not obliterated in the middle .	*immaculata*, Gestro, p. 136.
15.	Exterior or third costa on each elytron obliterated in the middle	17
15′.	Exterior costa not obliterated in the middle	16.

16.	Anterior legs (tarsi excepted) pale yellow	*rugicollis*, Gestro, p. 138.
16′.	Anterior legs black.	*shailaja*, sp. n., p. 138.
17.	Pronotum brown, elytra black or blue	18.
17′.	Pronotum and elytra black ...	*carbunculus*, sp. n., p. 139.
18.	Insect larger, 7 mm.; elytra blue.	*nilava*, sp. n., p. 140.
18′.	Insect smaller, $3\frac{3}{4}$–$4\frac{1}{2}$ mm.; elytra black. .	*andrewesimima*, sp.n., p. 141.

97. Agonia saundersi, *Baly*.

Agonia saundersi, Baly, Cat. Hisp. 1858, p. 110, pl. viii, f. 4.

Body elongate; upper side subnitid, underside shining. Head, antennæ, underside, legs, a longitudinal middle line on the pronotum, and the scutellum, black; elytra and the rest of the body red.

Head broad, the eyes strongly convex; the interocular space shining, impunctate, with a faint and shallow depression in the middle. Antennæ moderately stout, the first joint small and

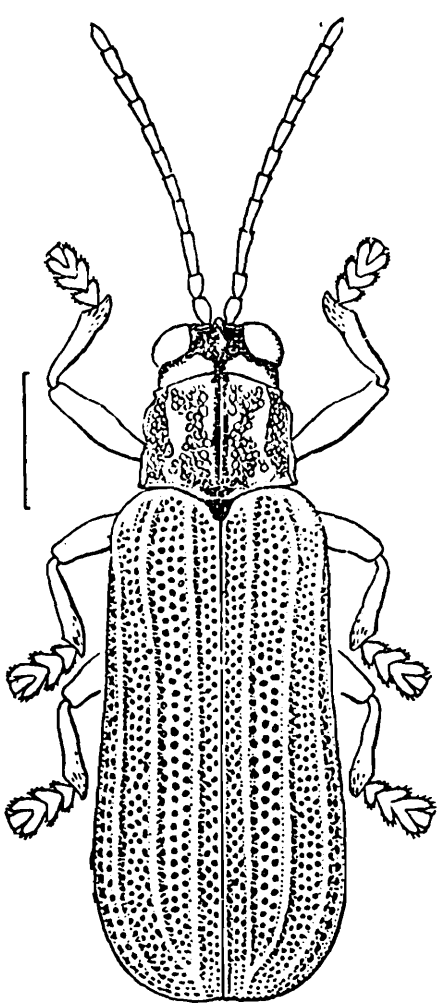


Fig. 40.—*Agonia saundersi*, Baly.

rounded, the second elongate, the third the longest, the fourth shorter than the third but longer than the fifth, the fifth to the eleventh stouter and almost equal to each other, the last joint a little longer than the preceding ones, and bluntly pointed; all

the joints pubescent and with elongate punctures. Clypeus much broader than long, the apex produced into a process which passes beyond the interantennal space; the edges of the labrum bristly. *Prothorax* almost as long as broad, the sides parallel and with a sinuate margin; a longitudinal black shining impunctate raised line in the middle, on each side of which is a raised impunctate area, and with a narrow transverse deep impression at the base. The surface is coarsely and broadly punctate, the punctures becoming smaller near the base and generally coalescing to form large shallow pits. *Scutellum* black, impunctate, broader at base, the apex rounded. *Elytra* broader than the prothorax, a little dilated towards the apex, each being tricostate and punctate-striate. Between the suture and the first costa there are three rows of punctures throughout the whole length of the elytra, except at the extreme apex where there are only two rows; between the first and second costæ there are three rows, except at the base where they are a little confused; between the second and third the rows commence as two from the humeral callus and increase to three till they reach the middle, where they become confusedly four, and then towards the apex the number of rows is reduced to three again; between the third costa and the lateral margin the rows of punctures may be stated as follows:—3, 2, 3, 2. *Underside* and legs black, smooth, shining; the tarsi broad, the claw-joint not projecting beyond the lobes of the third joint, the claws concealed.

Length, 12 mm.; pronotum, 2 mm.; antenna, 6 mm.

ASSAM: Sylhet.

Type in the British Museum.

98. **Agonia apicipennis**, *Baly*.

Gonophora apicipennis, Baly, Trans. Ent. Soc. Lond. 1869, p. 379.

Body elongate, upper side subnitid, underside shining. Antennæ, legs, the meso- and meta-sterna, abdomen, and the apical portion of the elytra, black; the rest of the body fulvous or red.

Head broad; the eyes strongly convex; the antennæ are moderately stout, the first joint rounded on the inner side, the second smaller and elongate, the third the longest and more slender, the remainder stouter and more pubescent; the joints are covered with elongate punctures. The clypeus is arched on each side. *Prothorax* almost as long as broad, a little narrowed in front, the sides with a margin, the front border also margined, the posterior margin sinuate, and with a deep, narrow, transverse, impression at base in the middle; this may be compared with a similar structure on the pronotum of *A. saundersi*, in which it is continuous from the apex to the base, but in the present species it is much interrupted both anteriorly and posteriorly. From each anterior angle a shining impunctate and sharply raised area runs obliquely towards the middle; the rest of the surface is coarsely and broadly punctate, the punctures coalescing to form

large pits. *Scutellum* small, narrow, impunctate. *Elytra* hardly broader at base than the prothorax, broadened towards the apex, sides straight. Each elytron is tricostate and punctate-striate; between the suture and the first costa there are three rows of punctures, between the first and second costæ also three rows but confused at the base, between the second and third costæ three rows, between the third costa and the lateral margin the rows from base to apex run 3, 2, 3, the punctures meet each other, and at the extreme apex they are confused. *Underside* smooth, shining. The trochanters of all the legs and the underside of the femora of the front pair are fulvous. Tarsi broad; the claw-joint does not project beyond the lobes of the third joint.

Length, 11½ mm.; pronotum, 2¼ mm.; antenna, 5 mm.

CEYLON: Kandy, vii. 1910.

Type in the British Museum.

99. Agonia himalayensis, sp. nov.

Body broad, shining brown; a little less than the apical half of the elytra, the antennæ, clypeus, eyes, and the tarsi, black.

Head smooth, but a little depressed round the bases of the antennæ. The antennæ are dilated towards the apex, the two basal joints are rounded and almost equal in length; the third, fourth, and fifth are more slender and equal to each other, the following joints becoming larger and more hairy. *Prothorax* almost as long as broad, if not a little longer, the sides rounded, the basal margin a little produced in the middle towards the scutellum. The surface is convex in the middle and there sparsely punctate; starting from the middle of the base on each side there is an oblique depression, these and the sides being coarsely and thickly punctate. *Scutellum* small, smooth and impunctate; broader than is usual in the genus. *Elytra* very little broader at base than the prothorax, a little dilated behind, the apical margin finely serrate. Each elytron has three costæ, the first and the middle one being well developed throughout their length, the third, or exterior, one obliterated in the middle. Between the suture and the first costa there are two rows of punctures; between the first and second costæ two rows; between the second and third two rows; between the third and the lateral margin, two rows which have become one row in the middle; there are therefore altogether eight rows of punctures on each elytron, but just across the middle only seven rows. *Underside* uniformly shining brown, except the last abdominal sternite and the tarsi, which are black; the points of articulation of the legs are darkish. The tarsi, at least the front ones, are broad and large, almost as long as the tibiæ.

Length, 6 mm.

N INDIA: Himalayas.

Type in the British Museum.

Described from one example.

100. **Agonia tavoya**, sp. nov.

Body small, elongate. Colour shining yellow-brown, with the antennæ, eyes, and a small portion of the apical surface of the elytra diffused brownish-black; the tarsi darker than the other parts of the legs.

Head with the vertex and front smooth and almost impunctate. The antennæ are gradually thickened towards the apex, the three or four basal joints browner than the apical joints, which are more hairy; the first joint is small and rounded, the second elongate and very slightly longer than the third; the third, fourth and fifth are almost equal in length, the remainder becoming stouter and more hairy. *Prothorax* almost as long as broad, the anterior and posterior margins straight, the sides without margins and coarsely punctate. The upper surface is convex and punctate, less so anteriorly, depressed at the base, where the punctures are thicker. *Scutellum* small, elongate, smooth, shining and impunctate. *Elytra* a little broader at base than the prothorax; the sides are parallel, with the margins rather pronounced, there being a few serrations at the lateral apical angles. On each elytron there are three costæ, the first two well developed throughout, the exterior one obliterated for a considerable distance in the middle; between the suture and the first costa there are two rows of punctures, between the first and second costæ two rows, between the second and third two rows, between the third and the lateral margin two rows which have become one in the middle; there are therefore altogether eight rows of punctures on each elytron but just across the middle only seven rows. *Underside* coarsely punctate at the sides of the prosternum. In one of the two specimens before me the colour is darker brown than that of the other on the abdominal sternites. The tarsi are always a little darker than the rest of the underside; they are long, the front ones being broad and almost as long as the tibiæ.

Length, 4 mm.

Burma: Tavoy, Tenasserim (*Doherty*).

Type and cotype in the British Museum.

Described from two examples.

101. **Agonia maculigera**, *Gestro*.

Gonophora maculigera, Gestro, Ann. Mus. Civ. Genova, 1888, p. 131.

Body elongate, pale yellow; antennæ reddish brown, prothorax with five and each elytron with nine darkish spots, underside and legs pale yellow.

Head: in the middle of the posterior part there is a brown spot. The antennæ with the first and second joints almost equal in length and not attenuated towards the apex. *Prothorax* narrow, convex, almost as broad posteriorly as in front, the sides parallel, moderately rounded, the posterior angles acute and produced.

The surface is convex and unequal, the transverse furrow along the anterior margin deep and full of punctures; there are two depressions in the middle of the anterior part, a long impression along each side, and another starting from the middle of the base is directed forwards in the form of a very open **V**. There are five brown spots, the anterior two occupying the two anterior depressions, one before each posterior angle, and one in front of the scutellum. *Scutellum* black. *Elytra* narrow, parallel-sided, the basal margin regularly rounded and somewhat raised, the lateral margin straight, the apical margin truncate, with the exterior apical angles almost right angles, the edge being finely serrate. On each elytron there are three well developed costæ: the first is continuous and travels from the base right up to the apex, the second is interrupted just in the middle, the third being much less definite, but entire; between each pair of costæ there are two rows of deep and coarse punctures, which are separated by raised transverse borders. Each elytron has nine brown spots: one on the humeral angle, another (the smallest) on the lateral margin at a little distance from the shoulder, a third on the external apical angle, three on the first costa equidistant from one another, two on the second costa alternating with the three on the first costa, and the last at the base between the first and second costæ. *Underside* and legs uniformly pale yellow.

Length, 4½ mm.

BURMA: Teinzo, v. 1886 (*L. Fea*).

Type in the Genoa Museum.

One specimen before me taken by Doherty at Tavoy, Tenasserim, agrees well with the above description, but with the following minor differences:—(1) The spots on the prothorax and elytra are quite black instead of brown; (2) the smallest spot on the lateral margin of the elytra situated behind the shoulders is obliterated, but is indicated by a brown mark; (3) there is an additional small black spot a little distance behind the scutellum between the suture and the first costa; length 5 mm. This specimen is in the British Museum.

102. **Agonia cribricollis**, *Gestro*.

Distolaca cribricollis, Gestro, Ann. Mus. Civ. Genova, 1900, p. 473.

Body elongate, yellow, shining; the vertex of the head with a black patch; the prothorax with a narrow black band on the lateral margin, two black patches near the front margin and immediately behind each a black stripe which unites with its fellow at the base; the elytra with three marginal black spots, one at the shoulder, one behind the middle, and the third at the external apical angle, and others situated on the costæ.

Head shining, with a short impressed line on the vertex. The antennæ are slightly robust, a little thickened from the base to

the apex, of a yellow-ferruginous colour with the basal joint lighter. *Prothorax* a little broader at base than its length, narrowed in front; from the front the sides are parallel for a short distance, then become slightly divergent, and then again parallel up to the posterior angles. The upper surface is convex, but at the base there is a marked depression; in the middle there is a longitudinal narrow well-marked sulcation; the rest of the surface is entirely covered with coarse, irregular and close punctures. *Scutellum* black. *Elytra* elongate, subparallel-sided, a little broader at the apex than at the base, slightly dilated behind the humerus, rounded at the apex, the apical margin very finely serrate. Each elytron has three costæ: the first strong throughout its length, the second a little less elevated for a short distance behind the middle, the third elevated only at the base and apex, being obliterated in the middle; the punctures between the costæ are deep and large and are arranged in two rows, except at the base of the second, where there are three rows for a little distance.

South India: Ghats Mts., vii–ix. 1898 (*R. P. F. Tabourel*).

Type in M. Réné Oberthür's collection.

103. **Agonia nigricornis**, *Gestro*.

Agonia nigricornis, Gestro, Ann. Mus. Civ. Genova, 1911, p. 19.

Body elongate, shining. Head dilute ferruginous, fuscous at base; antennæ black, the first two joints reddish; prothorax pale fulvous, the anterior margin narrowly fuscous, a fuscous patch more or less longitudinal in the middle; scutellum black; elytra black, the costæ alternately marked with black and yellow; sternum black; abdomen brown, the apex darkish; legs pale yellow, tarsi black.

Head impunctate, the eyes convex. The antennæ thickened towards the apex, the first joint punctate, the second slightly larger than the first, the third smaller than the second; from the fourth all the joints are sparsely covered with silvery hairs, and are gradually thickened. *Prothorax* longer than broad, subcylindrical, with a slight constriction at base and a dilation in the middle; the sides without margins, the posterior angles acute. The surface is convex and covered with large elongate punctures, but granulate towards the posterior angles near the constriction. *Scutellum* shining, impunctate, much broader at the base than at the apex. *Elytra* elongate, parallel-sided, broader than the prothorax; the suture depressed at the base; three costæ on each elytron. The depressed portion of the suture is yellow; the basal portion of the first costa yellow and then alternately black and yellow; the basal portion of the second costa black and then alternately yellow and black; this arrangement makes the yellow portion of the first costa oppose the black portion of the second costa; the third costa with only a small yellow patch towards the

apex. Between the suture and the first costa there are two rows of punctures, between the first and second costæ two rows, between the second and the third two rows, between the third and the lateral margin two rows, which become one in the middle; the punctures are large, squarish, and run into each other. *Underside*: the claw-joint hardly projects beyond the lobes of the third joint.

Length, 3 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection; cotypes in the Genoa Museum.

104. Agonia fallax, *Gestro.*

Agonia fallax, Gestro, Ann. Mus. Civ. Genova, 1911, p. 19.

Body elongate, shining. Head dilute ferruginous; the antennæ brown, shorter than those of *A. nigricornis*, the first two joints stout, the third joint slender, from the fifth joint gradually thickened and covered with silvery hairs. With the exception of the structure of the antennæ the description of *A. nigricornis* exactly applies to this species, but in *A. fallax* the black portions, which correspond exactly to those of *A. nigricornis*, are much diluted. The resemblance is so great that one is inclined to consider this as a variety of *A. nigricornis*; but until it is conclusively proved, I prefer to maintain Dr. Gestro's arrangement.

Length, 4 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection; cotypes in the Genoa Museum.

105. Agonia cherapunjiensis, *Maulik.*

Agonia cherapunjiensis, Maulik, Proc. Zool. Soc. Lond. 1916, p. 573.

Elongate, upper side subnitid, underside shining. Head, antennæ, underside, legs, a longitudinal middle line on the pronotum, and the scutellum black; elytra and the rest of the body fulvous.

Head: the antennæ moderately stout, with the basal joint short, the second constricted at the base, the third the longest, the fourth shorter than the third but longer than each of the following joints, fifth to seventh subequal, eighth to tenth equal but shorter than the preceding joints, the eleventh bluntly pointed; all the joints except the first with elongate setiferous punctures. Clypeus much broader than long, its apex produced into a process which passes beyond the interantennal space; labrum rufescent, the edges bristly. Mandibles broad, black, very powerful; the maxillary palpi 4-jointed, fulvous, hairy, the fourth joint darker in colour and bluntly pointed; the labial palpi 3-jointed, fulvous, hairy, the apex of the second and third joints black, the second dilated at the apex. *Prothorax* almost as long as broad, the sides with a margin; a longitudinal broad black shining impunctate

raised line in the middle, and on each side of it a raised impunctate area. The surface is coarsely and broadly punctate, the punctures becoming smaller near the base. *Scutellum* black, impunctate, broadest at base, apex rounded. *Elytra* slightly broadened at apex, tricostate and punctate-striate. Between the suture and the first costa three complete rows of punctures; between the first and second costæ the rows of punctures vary; for a length of 2·5 mm. just beyond the base there are four rows

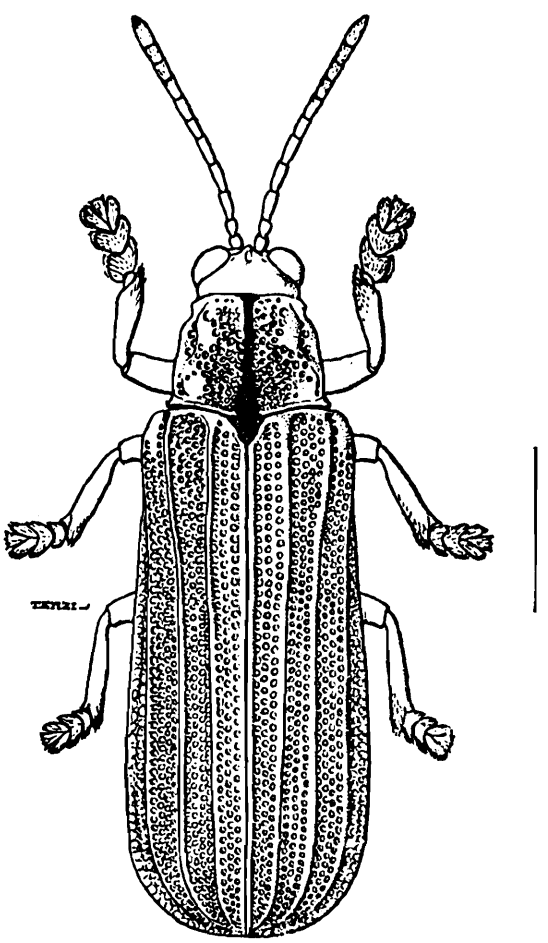


Fig. 41.—*Agonia cherapunjiensis*, Maulik. × 4.

of punctures; five punctures in a transverse line can be counted because the rows are confused; for a length of 2·5 mm. in the middle of the elytra three rows of punctures; beyond this the number of rows is increased to four; at the apex it is again three. Between the second and third costæ the rows of punctures are as follows: from the smooth shining humeral callus up to the middle (4·5 mm.) two and three rows of punctures; from the middle to the apex (except the extreme apex) four confused rows of punctures. Between the third costa and the lateral margin the rows of punctures may be stated as follows: 3, 2, 3, 4, 3. *Underside* and legs black, smooth, shining.

Length, 14½ mm.; antenna, 6 mm.; pronotum, 3 mm.

ASSAM: Cherapunji, 15. vii. 1907 (*Mrs. Somerset*).

Type in the British Museum

Described from one example.

106. Agonia parvula, *Gestro.*

Gonophora parvula, Gestro, Ann. Mus. Civ. Genova, 1890, p. 237.

Body elongate, yellow-brown, shining; the head darker, the antennæ black; the metasternum and abdomen brownish black; the intermediate and posterior legs fuscous.

Head very finely punctate. The two basal joints of the antennæ are almost equal; from the third to the end the joints are gradually thickened. *Prothorax* a little broader at the base than at the apex, with the sides straight. The surface is convex, especially in front, shining in the middle, at the sides roughly and irregularly punctate, and with two depressions, which become broader and less distinct at about the middle of the lateral margin, converging towards the scutellum and at the same time becoming deeper. *Elytra* long, narrow, hardly broadened behind the middle and with a very gentle sinuosity behind the humerus, the apical margin rounded and finely serrate. Each elytron has three moderately elevated and slightly convex costæ: the first two are distinct from the base to the apex, the third is well developed for a short distance at the base and apex, the rest being almost obliterated; the suture is elevated, except for a short distance at base; between the interstices there are two rows of punctures. *Underside*: the sternum laterally punctate, the punctures denser on the abdomen, especially at the sides.

Length, 4 mm.

Burma: Karen Hills, Keba district, 3000–3700 ft. (*Fea*).

Type in the Genoa Museum (one example only).

107. Agonia suturella, *Baly.*

Gonophora suturella, Baly, Cat. Hisp. 1858, p. 110; Gestro, Ann. Mus. Civ. Genova, 1897, p. 56 & p. 402; id., Ann. Soc. Ent. Belg. xliii, 1899, p. 319; Weise, Deut. Ent. Zeits. 1905, p. 116.

Body elongate, shining; upper side red, sometimes more brownish than red. Antennæ, underside, eyes, and sometimes also the surface immediately around them, the extreme lateral margin of the prothorax, a narrow sutural line, and the extreme apical margin of the elytra, black.

Head broader than long; the interocular space smooth, shining, impunctate; the eyes strongly convex. The first joint of the antennæ is small and rounded, this and the base of the second joint reddish, the third the longest; after this the joints become very slightly thicker, the last pointed; all the joints punctate, from the third to the end pubescent. *Prothorax* almost quadrate, slightly narrowed towards the front, the sides straight, deeply notched near the anterior angles, the posterior angles acute. The surface is convex, deeply and transversely excavated just in front of the base, rugose-punctate, with an impunctate longitudinal line

down the centre. *Scutellum* shining, blackish brown, impunctate. *Elytra* broader at the base than the thorax, parallel-sided. On each elytron there are three costæ, between the suture and the first costa two rows of regular punctures, between the first and second costæ two rows but at base three confused rows, between the second and third two rows, between the third and the lateral margin two rows. *Underside* shining, black; the femora beneath, the inner surface of the anterior tibiæ and the sternum fulvous; this colour is present to a much less extent under the hind femora. The claw-joint does not project beyond the lobes of the third joint.

Length, 8½ mm.; antennæ, 5 mm.

MADRAS: Kanara. JAVA. SUMATRA.

Type in the British Museum.

108. **Agonia suturellamima**, sp. nov.

Body elongate, parallel-sided, slightly broadened behind, shining. Head, the first joint of the antennæ, the prothorax, and elytra (except the suture) red; the front and middle coxæ and underside of front femora yellow; the blackness of the middle of metasternum, and the underside of the mid and hind femora is slightly tinged with reddish; the rest of the body is black.

Head smooth and impunctate, slightly depressed round the bases of the antennæ. The eyes are strongly convex and black. The antennæ are black, except the first joint, gradually thickened towards the apex, and sparsely pubescent; the first joint is rounded, the second and following joints cylindrical, the third the longest, the rest gradually thickened and more or less equal to each other, the last joint blunt; the two basal joints are more shining than the others, which are subnitid. *Prothorax* cylindrical, broader at the base than at the apex, not emarginate at the anterior angles, the posterior angles being somewhat produced; the basal margin slightly sinuate, the anterior margin straight, the sides indistinctly margined. The surface is coarsely and closely punctate, the punctures coalescing to form pits, transversely depressed at the base, an indistinctly raised median longitudinal area and two similarly raised and obliquely placed, commencing from the basal depression, are smooth and impunctate. *Scutellum* smooth, impunctate, elongate, parallel-sided, with the apex truncate; colour red, mixed with black at the apex. *Elytra* broader at the base than the prothorax, the sides subparallel and slightly dilated behind. On each elytron there are three well-developed costæ, the first being a little broader than the other two. From a little distance behind the scutellum up to a point where the elytra slope down towards the apex, the suture is black, then to the apex dark brown. Between the suture and the first costa are two rows of punctures, between the first and second costæ at the base three or four confused rows, then two regular rows throughout, between the second and the third costæ two rows, between the third costa

and lateral margin two rows, but on the apical area four rows; the punctures are large and round and the rows regular. *Underside*: metasternum, abdominal sternites and the legs black, shining. The surface of the metasternum is impunctate, that of

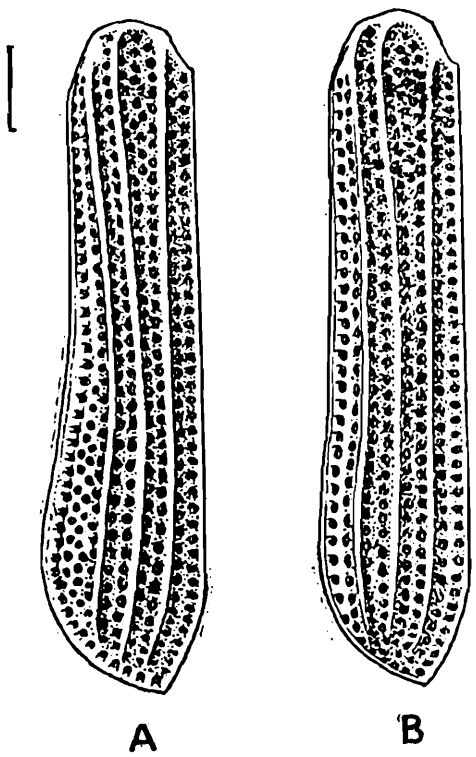


Fig. 42.—Left elytra of: (A) *Agonia suturellamima*, Maulik; (B) *Agonia suturella*, Baly.

the abdominal sternites finely punctate and sparsely hairy towards their apices, the last visible sternite being more so. The tarsi are broad, but shorter than the tibiæ; the claw-joint does not project beyond the bilobed joint, the claws being inconspicuous.

Length, 9 mm.

MADRAS: Kharkur, Nilgiri Hills, v. 1910 (*E. E. Green*).

Type in Mr. H. E. Andrewes' collection.

Described from one example.

This species resembles *A. suturella*, Baly, in coloration, in the form of the punctures, and generally in the form of the body, but differs from it in having (1) the margins of the prothorax at the anterior angles not emarginate, (2) the posterior angles slightly produced, (3) the impunctate longitudinal area on the pronotum broader, and the two oblique impunctate areas more distinct, (4) the elytra slightly broadened behind, (5) four rows of punctures on the apical area of the elytra between the third costa and the lateral margin, and (6) the sutural blackness not reaching the apex.

109. Agonia pallidipennis, sp. nov.

Body elongate, parallel-sided. Head, a longitudinal median raised area on the pronotum, scutellum, and a little more than the basal third of the suture, piceous; pronotum, elytra, underside along the longitudinal median area of the sternum, nearly the

whole of the underside of the front femora and tibiæ, and a small basal portion of the underside of mid and hind femora, yellow; a little of the basal portion of the upper side of the front tibiæ, and the articulations between the femora and tibiæ black mixed with yellow; antennæ, eyes, and the rest of the underside black; upper side subnitid, underside more shining.

Head smooth and impunctate, the eyes convex. The antennæ are almost of uniform thickness from the base to the apex and covered with elongate punctures; the three basal joints are more shining than the rest, which are more hairy; the two basal joints are rounded, the third the longest, the rest being almost equal to each other. *Prothorax* quadrate, slightly broader at the base, the sides parallel, with the edges emarginate near both the anterior and posterior angles; the basal margin is sinuate, the anterior straight. The surface is depressed at the base in the middle, very rough, with deep irregular longitudinal channels formed of coalescent punctures, and shining elevated smooth ridges and tubercles; longitudinally along the middle there is a broad, raised, smooth and impunctate area having a deep black channel along its middle. *Scutellum* black, smooth, impunctate, and elongate, with the apex truncate. *Elytra* broader at the base than the prothorax, with the lateral margins slightly expanded. On each elytron there are three well developed costæ; there are two regular rows of round punctures between the suture and the first costa, between each pair of costæ and between the third and the lateral margin; so that on each elytron there are eight rows of punctures. *Underside* smooth, shining, black, with middle of the abdominal sternites tinged with yellow. The tarsi are broad, the tibiæ much longer than the tarsi, and the front tibiæ slightly longer than the mid and hind tibiæ; the claw-joint does not project beyond the bilobed joint, the claws being inconspicuous.

Length, 9 mm.

SIKKIM: Mungphu (*Atkinson*).

Type and cotype in the British Museum.

Described from two examples.

This species is very similar to *A. suturella*, Baly, in the stature and the form of the body, but can be differentiated by the rougher sculpturing of the prothorax and the coloration.

110. **Agonia immaculata**, *Gestro*.

Gonophora immaculata, Gestro, Ann. Mus. Civ. Genova, 1888, p. 175.

Body elongate. Antennæ and legs black, the rest of the body red; the colour is more intense on the head and prothorax than on the elytra.

Head shining, the interocular space smooth; the first joint of the antennæ is rounded and almost equal in length to the second. *Prothorax* subquadrate, slightly narrowed in front, the sides sinuate and margined; the base with a deep transverse groove, which is deeper in the middle. The surface is convex and

exceedingly finely punctate, on each side of the middle of the base is a deep oblique fossa, the outer end of which nearly joins a similar longitudinal lateral fossa. *Scutellum* small, quadrate, impunctate. *Elytra* slightly broader at the base than the prothorax, parallel-sided, tricostate and punctate-striate. Between the suture and the first costa and between each subsequent pair of costæ there are two regular rows of punctures; between the

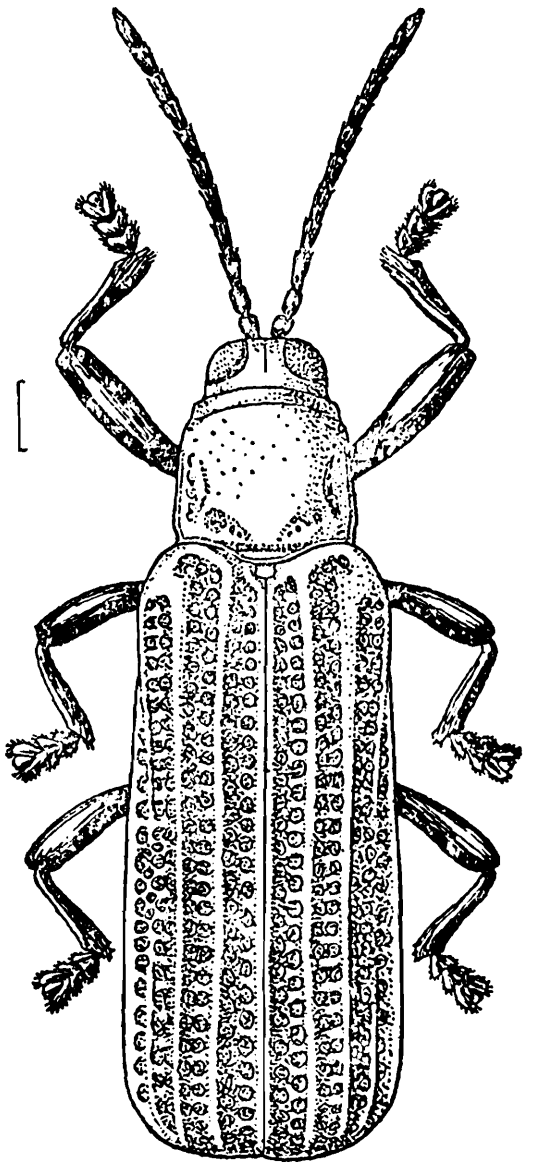


Fig. 43.—*Agonia immaculata*, Gestro.

third costa and the lateral margin there is only one row of punctures, which becomes doubled near the apex. *Underside* sometimes shining black, with the sternum and the base of the abdomen rufo-piceous; sometimes it is entirely red. Legs black; the claw-joint of the tarsus is very small and almost hidden between the lobes of the third joint.

Length, 5 mm.

BENGAL: Buxar Duars, v. 1907 (*D. Naoroji*). ASSAM: Shillong. BURMA: Teinzo (*Fea*); Tenasserim (*Doherty*).

Type in the Genoa Museum.

Many specimens in the British Museum. Those from Shillong and Bengal have the underside entirely black, the upper side being more fulvous than red. They may be a definite colour variety.

111. **Agonia rugicollis**, *Gestro*.

Gonophora rugicollis, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 238.

Body elongate, black and subnitid; the front piceous, the antennæ black, the palpi light yellow; the sternum brownish black; the anterior legs, except the tarsi, pale yellow.

Head: the two basal joints of the antennæ are almost equal, the remainder gradually dilated towards the apex. *Prothorax* a little broader than long, a little narrower at the apex than at the base, with the sides rounded; very convex above and longitudinally elevated in the middle, longitudinally rugose, and with a smooth central line that reaches neither the base nor the apex; on each side, which is depressed in the middle, there is a kind of elongate tubercle. *Elytra* long, narrow, a little dilated behind the middle, and a little sinuate behind the humerus, the apex being rounded and very finely serrate along the margin. On each elytron there are three costæ, much elevated (especially the first and the second) and without interruption.

Length, 4 mm.

Burma: Karen Hills, 3000–3700 ft. (*Fea*).

Type in the Genoa Museum.

This species differs from *G. parvula* in its coloration, in the form and characteristic structure of the prothorax, and in the sculpturing of the elytra.

I have before me five specimens collected by Doherty in Tenasserim which agree with Dr. Gestro's description of *rugicollis*; but a very slight difference in the dimension of the prothorax may be noticed, namely, in these specimens the width of the prothorax is about equal to the length, if not a little less. The prothorax is more brown than black. The underside and mid and hind legs are blackish brown.

112. **Agonia shailaja**, sp. nov.

Body elongate, broadened behind, subnitid. Black, with the pronotum reddish brown, but bordered all round with black.

Head smooth and impunctate, the eyes brown. The antennæ are comparatively long and slightly dilated towards the apex, the first and second joints being rounded and hairless, the third more slender, the fourth and fifth almost equal in length, the sixth a little shorter; from this joint the antenna becomes thicker and more pubescent, the last joint being pointed. *Prothorax* almost as long as broad; the anterior and posterior margins straight, with a deep transverse channel along the latter from one side to the other, and an impunctate border along the anterior margin; the sides

margined and parallel. Behind the anterior impunctate border the surface is longitudinally rugose; along the middle there is an impunctate longitudinal strip with a few small punctures at its sides; on each side of this impunctate area there is an oblique elevated ridge on all sides of which the surface is coarsely punctate; just posterior to the ridges the basal area is depressed. *Scutellum* small, elongate, black, smooth and impunctate. *Elytra* broader at the base than the prothorax, the sides subparallel but slightly dilated behind, the apical margin serrate. On each elytron there are three costæ, all of which are well developed throughout; between the suture and the first costa there are two rows of coarse punctures, then between each pair of costæ two rows, and between the third costa and the lateral margin two rows, which become one in the middle; thus there are eight rows of punctures on each elytron, but just across the middle seven rows. *Underside*: the tarsi of the front legs are large, equal to the tibiæ in length, if not longer; the mid and hind tarsi are also large, but smaller than the front ones; the claw-joint hardly projects beyond the bilobed joint, the claws not prominent.

Length, 4½ mm.

Assam: Patkai Mts. (*Doherty*).

Type in the British Museum.

Described from one example.

Superficially this species resembles *A. rugicollis*.

113. **Agonia carbunculus**, sp. nov.

Body elongate, slightly narrowed in the middle and a little broadened towards the posterior extremity. Colour shining black, except the palpi, the basal halves of the femora and three basal abdominal sternites, which are brown.

Head smooth, shining, and finely and sparsely punctate. The antennæ are comparatively long, slightly dilated towards the apex and hairy; the two basal joints are rounded, the second slightly longer than the first, the third, fourth and fifth more slender and almost equal, the remainder slightly stouter and more hairy. *Prothorax* almost as long as broad, the anterior and posterior margins straight, the sides rounded and depressed. The surface is convex and sparsely punctate, depressed at the base, from the middle of which there is an oblique depression on each side. *Scutellum* small, narrow, elongate, smooth, shining and impunctate. *Elytra* slightly broader at the base than the prothorax, a little constricted in the middle, and broadened behind, the apical edge very finely and sparsely serrate. On each elytron there are three costæ: the first and second are well developed throughout, the exterior one obliterated in the middle; between the suture and the first costa there are two rows of punctures, between the first and second costæ two rows, between the second and third two

rows, between the third and the lateral margin two rows. *Underside*: the legs are comparatively slender, the tarsi shorter than the tibiæ.

Length, 4 mm.

BURMA: Ruby Mines (*Doherty*).

Type in the British Museum.

Described from one example.

114. **Agonia nilava**, sp. nov.

Insect large, broad, dilated behind. Elytra blue; antennæ pitch-black with the basal joints more brown; eyes black; head, prothorax, underside and legs light brown.

Head smooth and impunctate. The antennæ are comparatively long, dilated towards the apex, the six apical joints more pubescent, the five basal joints with elongate punctures and more shining; the first joint is rounded, the second more elongate, the third more slender, the fourth and fifth slightly thicker and almost equal, the remainder becoming thicker, and the last joint long and pointed. *Prothorax* almost as long as broad, with the anterior and posterior margins straight; the sides are sinuate, margined, but at a much lower point than is usually the case, and coarsely and closely punctate. The surface is strongly convex in the middle; in front there is a border along the anterior margin, with a transverse row of punctures on each side of the middle, which is impunctate; the middle convex area is sparsely punctate; at the base in the middle there is a deep transverse depression, just above which on each side of the middle point the surface is slightly depressed, these depressions being more closely punctate. *Scutellum* small, elongate, smooth, shining, impunctate, darker brown in the middle. *Elytra* hardly broader at the base than the prothorax, the sides are parallel at the base but broadened posteriorly, the apical margin very finely serrate. On each elytron there are three costæ: the first and second are well developed throughout, the third is obliterated for a little distance in the middle; between the suture and the first costa, between each pair of costæ, and between the third and the lateral margin, there are two rows of coarse punctures. *Underside* entirely light yellow-brown. The anterior tarsi are large and almost equal the tibiæ in length, the mid and hind tarsi being smaller; the claw-joint does not project beyond the bilobed joint.

Length, 7 mm.; breadth, a little over 3 mm.

BURMA: Karen Hills (*Doherty*).

Type in the British Museum.

Described from one example.

115. **Agonia andrewesi**, *Ws.*

Gonophora andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 125.
G. andrewesi, var. *bicolor*, Weise, l. c. p. 126.

Body elongate, shining. Head, prothorax, underside, legs, nearly half of the lateral margin of the elytra, as well as their

apical margin, reddish brown; antennæ and the elytra black, the first and second joints of the former slightly tinged with red.

Head broad, the interocular space smooth, shining, impunctate; the eyes convex. The antennæ gradually thickened towards the apex from the fifth joint, the first joint stouter than the second, the third as long as the second, the fourth to the eleventh joints pubescent. *Prothorax* longer than broad, a little narrowed towards the front, more or less cylindrical, the sides without margins except at the base. The surface is convex, shining, and sparsely covered with fine punctures, with a deep transverse impression in the middle of the base. *Scutellum* broadest at the base, reddish, smooth, and impunctate. *Elytra* broader than the prothorax, tricostate and punctate-striate, the third costa being indistinct in the middle but quite distinct at the apex. The interspaces between the suture and the first costa, and between each pair of costæ, have two rows of large squarish punctures; between the third costa and the lateral margin there are two rows which become one in the middle. The sides are exactly parallel; the posterior lateral angle is a right angle, and the apical margin serrate. *Underside* smooth, shining. Legs longish, slender; the tarsi more or less broad, the claw-joint not longer than the third.

Length, 4–4½ mm.

Bombay: N. Kanara (*T. R. D. Bell*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

The variety *bicolor*, Weise, from the same locality, differs only in having the upper side entirely black.

116. **Agonia andrewesimima**, sp. nov.

Body elongate, slightly broadened behind. Elytra, antennæ, and eyes black; head, prothorax, the basal margin of the elytra, and the anterior legs (tarsi excepted) brown; underside and the other legs pitch black.

Head smooth, shining and impunctate, the eyes convex. The antennæ are comparatively short and slightly thickened towards the apex; the first joint is small and rounded, the second longer, the third more slender, the remainder gradually dilated and more hairy; the basal joints are hairless. *Prothorax* longer than broad, the anterior and posterior margin straight; the sides are without margins, rugose, roughly and closely punctate. The surface is convex, coarsely and sparsely punctate, with a narrow longitudinal median area from the anterior to the posterior margin and a part of the anterior surface impunctate; at the base on each side of the middle there is a small roundish depression. *Scutellum* small, smooth and impunctate, with the base brown and the apex black. *Elytra* broader at the base than the prothorax, the apical margin practically without serrations. On each elytron there are three costæ: the first and second are well developed throughout, the third is obliterated for a considerable length in the middle;

between each pair of costæ there are two rows of coarse punctures; so that there are eight punctures on each elytron, but only seven across the middle. *Underside* pitch-black; the coxæ and the articulations of the posterior legs are more dark brown than black; the first three abdominal sternites also are lighter in colour. The tarsi are large, particularly the anterior ones, and equal in length to the tibiæ. The sides of the sternum are coarsely punctate.

Length, $3\frac{3}{4}$ mm.

BURMA: Tavoy (*Doherty*).

Type in the British Museum.

Described from one example.

There is a superficial resemblance between this species and *A. andrewesi*, Weise, owing to the similar coloration.

Genus **GONOPHORA**, *Baly*.

Gonophora, Baly, Cat. Hisp. 1858, p. 108, pl. ii, fig. 11; Chapuis, Gen. Col. xi, 1875, p. 303; Weise, Deut. Ent. Zeits. 1905, pp. 115–116.

GENOTYPE, *Gonophora hæmorrhoidalis*, Weber (Sunda Is., Borneo).

The insects belonging to this genus are elongate, with the elytra a little broadened behind, and rough-looking, owing to the sculpturing of the pronotum and the highly raised and often broken up costæ on the elytra. The head is generally smooth on the vertex, with the eyes convex. The first two joints of the antennæ are generally rounded, and often differently coloured from the rest of the joints; the third to sixth are elongate, cylindrical and punctate, the remainder being almost equal to each other in length and more hairy than the other joints. The prothorax is quadrate, almost as long as broad, with the upper surface strongly convex in the middle, transversely depressed at the base, and very roughly and closely punctate, the punctures sometimes coalescing to form pits; often there is a raised longitudinal median line with a channel along the middle. The sides are strongly broadened in the middle, with the margins often serrate; the anterior angles are generally emarginate, and the posterior usually right angles. The scutellum is small, narrow, and elongate, being very similar to that of the genus *Agonia*. The elytra are generally broader at the base than the prothorax, the sides being as a rule parallel and with a very slightly expanded border, the margins being often serrate. Each elytron has three costæ, the first of which (*i. e.*, the one nearest the suture) is more strongly raised than the other two, being often more or less interrupted; the second is less raised and as a rule broken up; the third is the feeblest, and may be obliterated for a considerable distance, or broken up at several places, or may remain entire; the upper edges of the costæ may be sharp or rounded or scalloped. Between the suture and the first costa there are two

rows of rough punctures, between the first and second costæ two similar rows, between the second and third two, between the third and the lateral margin two, which in some cases are reduced to one in the middle. The tarsi are broad, the joints being transverse; the claw-joint is shorter than the bilobed joint, the claws being inconspicuous. The tibiæ are longer than the tarsi and not shorter, as is often found in the genus *Agonia*.

The genus is divided into three subgenera as follows :—Insects of small size, constricted behind the shoulders, posteriorly dilated, with the margins of the elytra hardly expanded and not distinctly angulate at the posterior lateral angles, are placed in *Micrispa*, Gestro; while insects of larger size, more or less parallel-sided, with the lateral margins of the elytra slightly expanded and often serrate, and with the posterior lateral angles more distinctly angulate, are put in *Gonophora*, Baly; insects with hairy elytra are referred to *Lachnispa*, Gestro. Within our faunistic limits only one *Micrispa* is found and the rest are *Gonophora*.

Range. India, Ceylon, Burma, the Andaman Islands, Sumatra, Java, Borneo, Celebes, the Philippines and various Pacific Islands.

The difference between this genus and *Agonia* has already been indicated under the latter genus, p. 122.

Key to the Species.

1. Size small (3 mm.); markedly constricted behind the shoulders, broadened behind, posterior lateral angles of the elytra not distinctly angulate	*gestroi*, Ws., p. 149.
1′. Size larger (4½–6 mm.); parallel-sided, posterior lateral angles of the elytra more angulate	2.
2. Elytra immaculate	*akalankita*, sp. n., p. 144.
2′. Elytra maculate	3.
3. Elytra with only a black patch on the apical area ..	*taprobanæ*, Gestro, p. 144.
3′. Elytra multimaculate	4.
4. Pronotum not maculate	*masoni*, Baly, p. 146.
4′. Pronotum maculate.	5.
5. Antennæ long, pronotum usually with five maculæ.. ..	*pulchella*, Gestro, p. 146.
5′. Antennæ short, pronotum with two maculæ	*brevicornis*, Ws., p. 148.

There are two more species described by Motshulsky which I have not seen, and the descriptions being meagre, they cannot be included in this key. Weise has placed them in the subgenus *Micrispa*. I have not had the opportunity of ascertaining whether this was done as a result of examining specimens or merely owing to their small size. I here add translations of Motshulsky's descriptions.

117 **Gonophora taprobanæ**, *Gestro.*

Gonophora taprobanæ, Gestro, Bull. Soc. Ent. Ital. 1902, p. 53.

Body elongate. Upper side fulvous to rufous; head (the front excepted), antennæ, the lateral margins of the prothorax, and the apex of the elytra, black; underside black, middle of the prosternum and mesosternum, and the underside of the anterior femora testaceous; upper side subnitid, underside shining.

Head convex, rugose and punctate, with a longitudinal impression in the middle; the collar constricted behind the eyes, which are strongly convex. Antennæ slender, punctate, almost as long as half the body; the first joint rounded, larger than the second; the third joint elongate, much longer than the second; the six apical joints gently thickened, more pubescent than the basal ones. *Prothorax* quadrate, the sides almost straight, the margins serrate, laterally expanded near the anterior angles, which are emarginate; the posterior angles acute, slightly produced; the upper surface convex in the middle, depressed towards the base, with a longitudinal groove down the middle, coarsely punctate. *Scutellum* broader at the base than at the apex, testaceous, smooth, impunctate. *Elytra* broader at the base than the prothorax, parallel-sided, obtusely rounded or obliquely truncate towards the apex, the margins serrate. On each elytron there are eight regular rows of punctures, the edge of the third costa undulate; the rows are very regular and distinct, the punctures being round; between the first and second costæ at the base there are three rows. *Underside* smooth, the abdominal sternites very finely punctate, with a few scattered hairs on the abdomen and legs. Tarsi much broader at the apex than the base, the claw-joint shorter than the third joint; claws inconspicuous.

Length, ♂ 4½ mm., ♀ 5 mm.

CEYLON: Kandy.

Type in the Genoa Museum.

118. **Gonophora akalankita**, sp. nov.

Body elongate, parallel-sided. Upper side of prothorax and elytra red to yellow; head (excepting the front), antennæ, eves, underside and legs (excepting the middle of sternum and the underside of the front femora, which are yellowish or reddish), black.

Head convex, with a longitudinal impression down the middle, rugose, punctate, generally black, sometimes slightly tinged with yellow or red; the eyes are strongly convex, the collar behind them being constricted, smooth, impunctate and shining. The antennæ slender, almost as long as half the body, punctate; the first joint is rounded and larger than the second, the third elongate and longer than the second, the fourth and fifth almost equal, the six apical joints gently thickened and more pubescent than the others. *Prothorax* quadrate, the sides almost straight,

laterally expanded near the anterior angles, which are emarginate, the posterior angles slightly produced, the margins serrate. The upper surface is convex in the middle, depressed at the base, with a longitudinal groove down the centre, and coarsely punctate. *Scutellum* elongate, narrow, smooth, shining, impunctate, with truncate apex. *Elytra* broader at the base than the prothorax, almost parallel-sided, with a very gentle constriction in the middle, the posterior lateral angles rounded; the apex is truncate and not produced as in *G. taprobanæ*, Gestro; the lateral

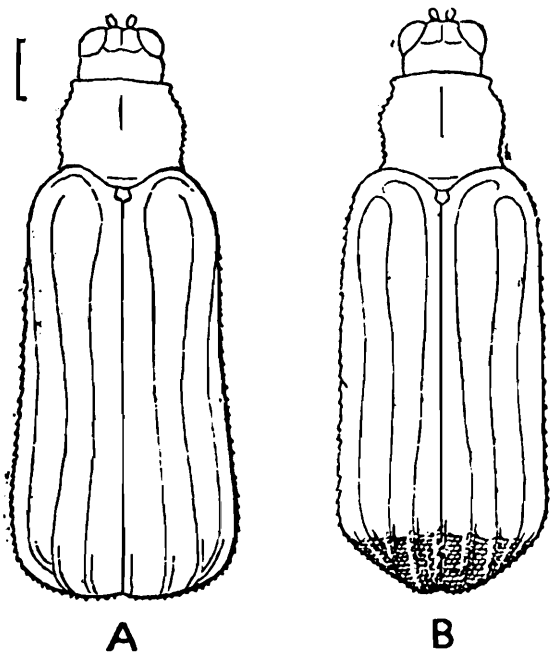


Fig. 44.—A. *Gonophora akalankita*, Maulik;
B. *Gonophora taprobanæ*, Gestro.

margins are slightly expanded, with the edges serrate. The three costæ are well developed, the first being the strongest of the three, and the upper edge of the third costa scalloped; the eight rows of rounded punctures are very regular and distinct, but between the first and second costæ there are three rows at the base only. *Underside*: the abdominal sternites are very finely punctate, with a few scattered hairs. The tarsi are much broader at the apex than at the base; the claw-joint is shorter than the bilobed joint, the claws being inconspicuous.

Length, ♂ 4½ mm., ♀ 5 mm.

CEYLON: Dikoya, 3800–4200 ft., 6. xii. 1881–16. i. 1882 (*G. Lewis*).

Type and cotypes in the British Museum.

Described from four examples.

This species resembles *G. taprobanæ*, but differs in (1) not having the black lateral border of the prothorax, (2) not having the black apical patch on the elytra, (3) having differently shaped posterior lateral angles of the elytra. In *G. taprobanæ* the apex of the elytra is more produced, but this character is not quite constant; in some cases they tend to assume the shape of *G. akalankita*.

119. **Gonophora masoni**, *Baly*

Gonophora masoni, Baly, Ent. Mo. Mag. 1888 p. 85

Body elongate. Fulvous, subnitid, with seven black patches on the elytra, as follows:—a central elongate patch common to both elytra, lying between the two inner costæ, and three roundish spots on each elytron disposed thus: the first at the base between the first and second costæ; just posterior to the middle a large patch covering an area including a portion of the second and third costæ; just behind this obliquely towards the suture a smaller patch which covers a portion of the first costa as well as a few punctures on either side, sometimes coalescing with the previous patch.

Head smooth, impunctate. The antennæ half the length of the body, the first joint rounded and larger than the second, the third the longest, the six basal joints with a few scattered hairs on the surface, the apical ones more thickly covered with hair and slightly darker. *Prothorax* broader than long; just anterior to the middle the sides are expanded or laterally convex, the margins serrate. The upper surface is transversely sulcate just before the base; anterior to this sulcation the surface is depressed on either side, thus making the central portion of the surface a hump; longitudinally down the middle a deep groove, which extends from the apical margin to the anterior edge of the basal sulcation; covered with coarse and large punctures which run into each other, the summit of the raised portions being smooth and impunctate. *Scutellum* broader at the base than at the apex, elongate, narrow, granulate. *Elytra* broader than the prothorax, parallel-sided, obtusely rounded conjointly at the apex, the margins serrate; sometimes the serrations of the lateral margins are not very distinct, but those of the apical margins are always well marked. On each elytron there are three costæ and eight rows of broad large squarish punctures, arranged in pairs, with a transverse raised bar between each pair; the third costa less elevated and undulated and the first costa most strongly raised; between the first and second costæ the two rows become three at the base, and in some cases also towards the apex; between the third costa and the lateral margin the two rows become one in the middle. *Underside* smooth, the abdomen very slightly punctate. Tarsi broader at the apex than at the base; the claw-joint does not project beyond the lobes of the third joint, the claws inconspicuous.

Length, 6 mm.

ANDAMAN ISLANDS.

Type probably in the Indian Museum.

120. **Gonophora pulchella**, *Gestro*.

Gonophora pulchella, Gestro, Ann. Mus. Civ. Genova, 1888, p. 176.
Gonophora bengalensis, Weise, Stett. Ent. Zeit. lxix, 1908, p. 214.

Body elongate. Subnitid, flavo-testaceous; underside and legs

generally flavo-testaceous; base of antennæ darkish; posterior part of head sometimes with a black spot; prothorax with five black spots; scutellum black. Each elytron with eight large black patches and a black fascia at the apex, disposed as follows:—the first on the humeral callus; the second between the first and second costæ at the base; the third between the suture and the first costa a little way down from the base; the fourth and fifth lie obliquely between the first and second, and the second and third costæ; the sixth, seventh and eighth are confluent with each other and cover a large area in the middle of the elytron, sometimes extending towards the apex and meeting the large apical black fascia; this makes the apical area of the elytron almost entirely black. There is a good deal of variation in the black markings

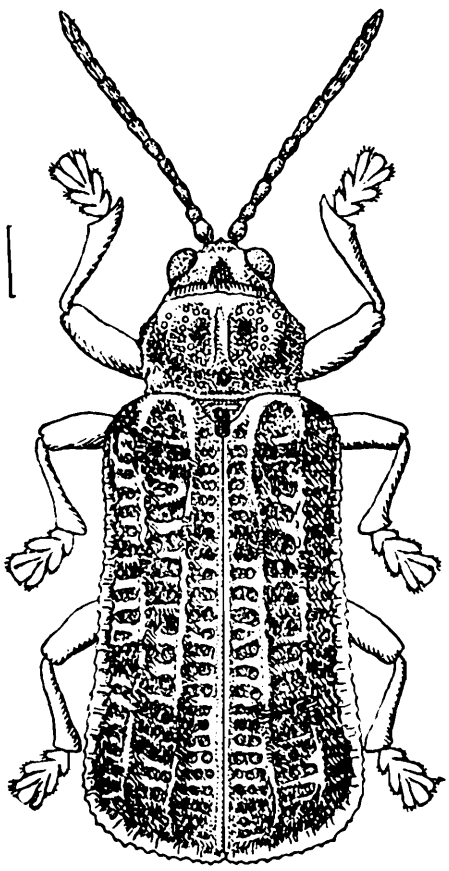


Fig. 45.—*Gonophora pulchella*, Gestro.

of the elytra; sometimes the black patches are better defined than others, sometimes very indistinct, a reddish brown colour indicating the spot where there would have been a black patch.

Head broad, interocular space not quite plane, impunctate; the eyes strongly convex. The first joint of the antennæ rounded; the second also rounded, but smaller; the third almost the longest; from the seventh joint to the end pubescent; the six basal joints hairless, smooth and impunctate. *Prothorax* quadrate, the margins serrate and broadened or convex just anterior to the middle. The surface is convex, transversely and deeply sulcate at the base in the middle; commencing from the front of the sulcation there is a

depression on either side, thus giving the central part the appearance of a hump; longitudinally down the middle there is a deep groove; the surface is deeply and coarsely punctate, the punctures coalescing to form larger pits. *Scutellum* much broader at the base than at the apex, black, sometimes tinged with brown, subnitid, granulate. *Elytra* broader at the base than the prothorax; the sides subparallel, slightly broadened towards the apex, the lateral and apical margins serrate. Each elytron has three costæ, the first costa being higher than the suture and the other costæ; the second and third costæ are undulated, all the costæ being sharper towards the apex; between the third costa and the lateral margin the usual two rows of punctures become one in the middle; the punctures are large and squarish, each transverse pair coalescing to form large foveæ separated by transverse bars. *Underside* brown, shining, the abdomen and the hind femora may be blackish; the abdominal sternites are slightly punctate and bear a few silky hairs. The tarsi are broader at the apex than at the base; the claw-joint does not project beyond the lobes of the third joint, the claws inconspicuous.

Length, 5½–6 mm.

BENGAL: Rungpur (*H. M. Lefroy*). ASSAM: Patkai Hills and Manipur (*Doherty*). BURMA: Ruby Mines, Karen Hills (*Doherty*); Shwegu-myo, 1885 (*Fea*); Tavoy (*Doherty*).

Type in the Genoa Museum; that of *bengalensis* in Weise's collection; cotypes of both in the British Museum.

Having examined the cotypes of *Gonophora pulchella*, Gestro, and *G. bengalensis*, Weise, I am of opinion that they are the same species. Owing to the variation of the black patches an individual specimen might look different, but when one examines a number of specimens from different localities the limits of variation can be determined, and I have found no structural differences between them.

121. **Gonophora brevicornis**, *Ws.*

Gonophora brevicornis, Weise, Deut. Ent. Zeits. 1905, p. 114.

Body elongate. Fulvous, not shining; prothorax with two black patches. Each elytron with five black spots, varying in intensity and definition, and disposed thus:—one at the base covering the second costa and on its inner side two rows of punctures; the second posterior to this and almost confluent with it, covering the first costa and three or four punctures on either side; the third on the second costa at the point where it is interrupted, covering about two punctures on either side; the fourth and fifth on the first and second costæ almost side by side at about three-fourths from the base. The apices of the first and second costæ and in some cases the third are tinged with black; it is possible that these may become larger and join together to form a crescentic fascia.

Head dull, granulate, with a faint longitudinal impression in the middle. The antennæ are comparatively short, the first joint rounded, larger than the second, the third more slender than the second and almost equal to it in length, the fifth longer than the fourth or the sixth; the basal five or six joints not hairy, the apical five thickened and pubescent. *Prothorax* quadrate, dull, the lateral margins expanded near the anterior angles and serrated. At the base in the middle transversely and deeply sulcate, with a deep longitudinal median groove, on each side of which are some deep punctures confusedly covering a longitudinal black or blackish patch, beyond which again there is a callosity; the surface on the whole is granulate. *Scutellum* broader at the base than at the apex, dull, black, granulate. *Elytra* broader than the prothorax; the first costa is higher than the second or third, these latter being interrupted at three-fourths of their length, the third costa undulated. The punctures are rounded and deep; between the first and second costæ at the base the rows are more than two and confused; between the third costa and the lateral margin the two rows are united into one in the middle. The lateral margins are finely serrated, but this is sometimes obsolete; the apical margins are always finely serrated. *Underside* shining, yellowish brown; the abdomen finely and sparsely punctate. The tarsi are broadened at the apex, the claw-joint shorter than the third joint, the claws concealed in the felt of the underside of the tarsus.

MADRAS: Nilgiri Hills (*H. L. Andrewes*); Trichur, Cochin State, 300 ft., 1–4. x. 1914 (*F. H. Gravely*, Indian Museum).

Type in Mr. H. E. Andrewes' collection, London.

122. **Gonophora gestroi**, *Ws.*

Micrispa gestroi. Weise, Deut. Ent. Zeits. 1905, p. 116.

Head, prothorax and underside ferruginous; antennæ testaceous; pronotum almost entirely suffused with black, the elevated ridges paler; elytra paler, with four ill-defined transverse bands, the basal one interrupted in the middle; scutellum black.

Head small, almost enclosed in the prothorax, the interocular space smooth, strongly granulate; eyes very convex. *Prothorax* broader anteriorly than posteriorly, the lateral margins expanded and obsoletely serrate. The upper surface roughly punctate, the central portion strongly convex, with a strong longitudinal ridge bearing a faint median groove; on each side of this a similar, rather oblique ridge. *Scutellum* broader at the base than at the apex, dull, granulate. *Elytra* broader than the prothorax, the sides broadly concave in the middle, slightly dilated towards the apex; between the first and second costæ at the base the usual two rows of coarse punctures become confusedly three. *Underside* ferruginous, the legs granulate. Tarsi broader at

apex; the claw-joint does not project beyond the third joint, claws hidden.

BURMA: Taung-ngu (*Corbett*).

Type in Weise's collection; cotypes in Mr. H. E. Andrewes' collection and the British Museum.

123. **Gonophora zinzibaris**, *Mots.*

Anisodera zinzibaris, Motshulsky, Bull. Mosc. xxxvi, 1861, p. 521.
Micrispa zinzibaris, Weise, Deut. Ent. Zeits. 1904, p. 457.

Body elongate, slightly dilated posteriorly. Upper side dull, underside shining; black, front of head, prothorax and elytra red, sternum slightly testaceous in the middle.

Head small, subquadrate. Antennæ subfiliform, almost as long as half the body. *Prothorax* a little longer than the head, quadrate, the margins serrate. Anterior to the middle bifoveolate, posteriorly transversely impressed; sparsely punctate; anterior angles excised, the posterior angles acute, prominent. *Elytra* broader than the prothorax, coarsely punctate-striate in pairs; each elytron with three costæ, the first two strongly elevated and joined at base, the third costa not distinct. *Underside*: tarsi dilated, the joints strongly transverse, the third joint longer than the fourth joint.

Length, 3½ mm.; breadth, 1½ mm.

CEYLON: Nuwara Eliya, on ginger (*Nietner*).

Type destroyed.

124. **Gonophora nigricauda**, *Mots.*

Anisodera nigricauda, Motshulsky, Bull. Mosc. xxxix, 1863, p. 422.
Micrispa nigricauda, Weise, Deut. Ent. Zeits. 1904, p. 457.

Similar to *G. zinzibaris* in stature, but the elytra are posteriorly black. Elongate, subdepressed, parallel-sided, upper side dull; black, the prothorax and elytra red, the apex of the latter with a black patch; the front femora red in the middle.

Prothorax subquadrate, anteriorly bifoveolate, transversely impressed behind. *Elytra* broader than the prothorax, coarsely punctate-striate in pairs; each elytron with three elevated costæ.

Length, 4 mm.; breadth, 1½ mm.

CEYLON: Nuwara Eliya.

Type destroyed.

It is not unlikely that this may be a small specimen of Gestro's *G. taprobanæ*.

Group IV.

Key to the Genera of Group IV

1.	Antennæ 11-jointed; no lateral projections from the sides of the prothorax or elytra	2.
1′.	Antennæ 9-jointed; prothorax and elytra with lateral projections	Platypria, Guér., p. 256.
2.	At least the first joint of the antennæ with a dorsal spine . .	3.
2′.	Antennæ without any dorsal spine.	8.
3.	Claws single .	4
3′.	Claws double, as usual	5. [p. 151.
4.	Claws pointed	Monochirus, Chap., [p. 156.
4′	Claws blunt at the extremity, as broad at base as at the end.	Acmenychus, Ws.,
5.	Claws equal ..	6. [p. 168.
5′	Claws unequal	Asamangulia, Maulik,
6.	First to sixth joints of antennæ with dorsal spines	Hispella, Chap., p. 156.
6′.	Only the first joint of antennæ with a dorsal spine	7
7.	The spines on the front border of the prothorax are remote from the outer angles.	Rhadinosa, Ws., p. 164.
7′.	These spines are nearer the outer angles .	Phidodonta, Ws., p. 162.
8.	The front border of the prothorax with spines	Dactylispa, Ws., p. 170.
8′.	The front border of the prothorax without spines	Hispa, L., p. 247.

Genus **MONOCHIRUS**, *Chap.*

Monochirus, Chapuis, Gen. Col. xi, 1875, p. 330.
Hispellinus, Weise, Deut. Ent. Zeits. 1897, p. 144; op. cit. 1905, p. 317.

Genotype, *Monochirus callicanthus*, Bates (Formosa, Philippines).

The species of this genus are black, sometimes with bluish tinge, and generally with sparsely scattered scale-like whitish or greyish hairs. The first joint of the antennæ is always the largest and always armed with a dorsal spine; the second to sixth are different in structure from the apical five, which generally form an elongate club that is covered with pubescence; the second to sixth joints are generally bare and sometimes longitudinally sulcate. The prothorax is usually broader than long, with three spines on each side and four on the front margin, and the disc has generally two shallow transverse excavations. The elytra are deeply punctate-striate, and always armed with a number of spines. The chief character which distinguishes this genus from all others is the *single* claw with which the tarsi are provided. The front tibiæ are generally short and broadly emarginate at the apex, the mid tibiæ curved, the hind tibiæ similar to the front ones.

Range. Ceylon, India, China, Japan, Sumatra, Java, Borneo, New Guinea, &c., Australia, Africa.

There are eleven species described under this genus, of which only two occur within our limits.

Key to the Species.

1. Size smaller (3½ mm.); antennal club without brownish pubescence. ... . *minor*, sp. n., p. 155.
1'. Size larger (4½ mm.); antennal club with brownish pubescence 2. [p. 154.
2. Antennal club very thick .. *sthulacundus*, Maulik,
2'. Antennal club not very thick *mœstus*, Baly, p. 152.

125. **Monochirus mœstus**, *Baly*.

Monochirus mœstus, Baly, Ann. Mus. Civ. Genova, 1888, p. 622; Gestro, Ann. Mus. Civ. Genova, 1890, p. 245, and 1897, p. 73, and 1898, p. 217; id., Bull. Soc. Ent. Ital. 1902, p. 55; id., Ann. Mus. Nat. Hung. 1907, p. 77; Weise, Deut. Ent. Zeits. 1897, p. 126.

Hispa perroteti, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 238; Weise, Deut. Ent. Zeits. 1897, p. 44.

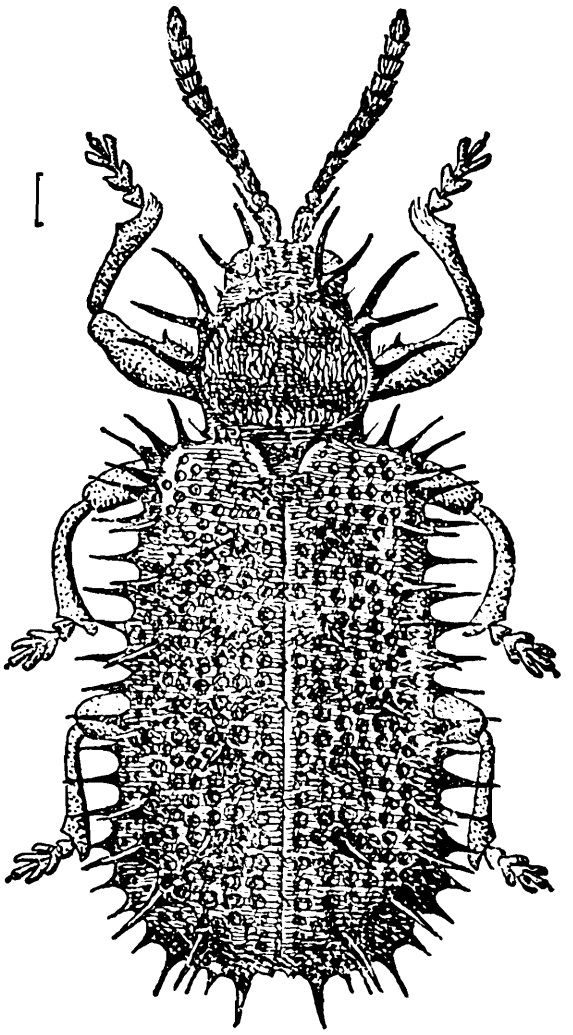


Fig. 46.— *Monochirus mœstus*, Baly.

Body oblong, blue-black; prothorax opaque, elytra subnitid or shining.

Head broad, rugose; eyes convex, with a row of silvery hairs

round them. The antennæ are less than half the body in length and thickened towards the apex; the first joint the largest, armed with a large dorsal spine, the second small and rounded, third to sixth gradually increasing in size; the five apical joints forming a thickened and elongate club covered with brown pubescence; the six basal joints granulate and also sulcate in some cases, and with small bristles at their apex. *Prothorax* broader than long, the sides rounded and armed with three spines, the anterior two having a common base, the posterior one situated at some distance in front of the base; the anterior angle armed with a subacute tooth. The disc is transversely excavated at the base; on its front margin there are two pairs of erect spines; the surface is rugose and clothed with depressed scale-like white hairs. *Scutellum* broad, rounded, opaque, and finely granulate. *Elytra* oblong, with small scattered scale-like hairs, and armed at the sides and apex with a number of acute spines. The upper surface is strongly punctate-striate, the puncturing being less regular laterally, and with rows of strong acute spines. *Underside*: the femora are armed beneath with an acute tooth.

Length, 4½ mm.

BURMA: Bhamo, viii. 1885 (*Fea*, type); Palon, Pegu, viii–ix. 887 (*Fea*). SUMATRA: Nias Is.

Type in the Genoa Museum.

The antennæ in this species exhibit remarkable variations, which make it difficult to determine the species with certainty. Baly described it from four examples from Burma, and I have examined five other specimens from Sumatra and one from Nias Island. The variation is observed in (1) the relative lengths and thickness of joints 2–6; (2) the difference in the relative thickness of these joints and that of the club; (3) the relative length of the club.

Type specimen from Bhamo. The second joint is rounded, the third and fourth almost equal to each other in length and thickness, the fifth and sixth almost equal in length, but the latter is a little thicker. The difference between the thickness of the club and that of the preceding joints is not very great; the relative length of the club is also not very great.

Second specimen from Bhamo. The second joint is rounded but larger than the third, the third to sixth short, more or less rounded (second and third more so) and of increasing thickness. The difference between the thickness of the club and the preceding joints is much greater than in the type specimen; the club is also relatively longer.

Third specimen from Burma (*Palon*). The second joint is rounded, the third and fourth elongate and equal to each other, the fifth and sixth also elongate and equal to each other, but slightly thicker. The difference between the thickness of the club and the preceding joints is very slight, and the club is not relatively longer.

Fourth specimen from Burma (*Palon*). The second joint is rounded, but larger than the third, which is also rounded, the

fourth rounded and slightly longer than the third, the fifth and sixth much more elongate and equal. The relative thickness and length of the club are greater than in the type specimen, but not very pronounced.

Specimen from Nias. The third, fourth and fifth joints are equal in length and of slightly increasing thickness, the sixth shorter. The relative thickness and length of the club are greater than in the type specimen, but not very pronounced.

First specimen from Sumatra. The third joint is shorter than the fourth, the fourth to sixth are elongate, more so than the corresponding joints of the type specimen, the fourth and fifth equal, the sixth shorter. The relative thickness and length of the club are not very great, but it is longer than that of the type specimen.

Second specimen from Sumatra. The third joint is rounded and smaller than the second, the fourth and sixth equal, the fifth longer than either; these three are elongate and of increasing thickness. The relative thickness and length of the club are much greater than in the type specimen.

Third and fourth specimens from Sumatra. The third joint is shorter than the fourth, the fourth and fifth elongate and equal, the sixth shorter than the fifth. The club is neither thicker nor longer than the preceding joints; as compared with the type it is longer but thinner.

Fifth specimen from Sumatra. The third and fourth joints are rounded and each is smaller than the second, the fifth and sixth elongate and equal, the latter being thicker. The club is much thicker and longer, more so than that of the type specimen.

From this it will be seen that almost every specimen shows a slight difference in the structure of the antennæ; there being no other variation, this phenomenon can be reasonably considered as merely individual in character. It is possible that *M. sthulacundus*, which I described in 1915 from a specimen from Bengal, may be an extreme variation of this species.

126. **Monochirus sthulacundus**, *Maulik.*

Monochirus sthulacundus, Maulik, Rec. Ind. Mus. 1915, p. 373.

Body black, shining.

Head rugose, coarsely punctate, with a fine median groove from the vertex; an incomplete ridge enclosing a row of short brownish hairs round the eyes. The six basal joints of the antennæ black, bare, and punctate; the five apical joints forming a very dilated, round club which is covered with reddish brown pubescence; the basal joint bearing a long spine on the dorsal side; joints 2–4 small, rounded; joints 5 and 6 subequal and together as long as 2, 3 and 4; the apical joint pointed. *Prothorax* more opaque than the elytra, as long as broad, narrowed in front, the lateral margins rounded. The surface coarsely punctate, covered with brown pubescence; a bare longitudinal area in the middle, which is more

or less elevated, and two transverse shallow depressions; two pairs of erect spines on the front margin, one pair of similar spines and a single one on each lateral margin; base bare, transversely channelled; each of the four lateral angles ends in a minute blunt tooth. *Elytra* shining, parallel-sided, rounded at the apex, deeply and coarsely punctate-striate, thinly covered with stout and erect spines, the marginal row of spines horizontal. *Legs* short, stout, punctate, sparsely covered with brown pubescence; a pointed tooth on the underside of the fore femora, three in a similar position on each of the mid and hind ones; the fore and hind tibiæ emarginate at the apices.

Length, 4 mm.

BENGAL: Berhampur, Murshidabad district, 1.i.1908 (*R. E. Lloyd*).

Type in the Indian Museum, Calcutta.

Described from one example.

127. **Monochirus minor**, sp. nov.

Body oblong, small. Black, sometimes with a bluish tint on the elytra.

Head rugose, with a slight depression in the middle of the interocular space; a row of silvery hairs encircles each of the eyes. The antennæ are small; the first joint is the largest, with a long and sharp spine on the dorsal side; the second joint small and rounded, the third to sixth short, rounded, and of increasing thickness; the club is thicker than the preceding joints, but not very markedly so, and is composed of very short joints, all of them being sparsely hairy. *Prothorax* transverse, with the surface granulate, sparsely covered with silvery hairs, and with a longitudinal median smooth area having an impression along the middle; the transverse shallow depression is more marked along the base than the one in front. On the front margin there are two pairs of straight, thin and pointed spines which are not very far apart (in the type specimen the left pair is deformed); on each side there are three similar spines, the first two having a common base, and the third situated at some little distance behind them. *Scutellum* broad, granulate, with the apex truncate. *Elytra* broader at the base than the prothorax, punctate-striate, each puncture bearing a small silvery hair in the centre. The surface is more shining than that of the prothorax; on each elytron there are about seventeen or eighteen spines, including those on the humerus; there is a series of spines along the margin all round, those at the base being somewhat longer, about fifteen on each side from the base to the sutural angle. *Underside* black, sparsely hairy, granulate. There are minute teeth under the femora; the claw-joint projects beyond the lobes of the third joint.

Length, $3\frac{1}{2}$ mm.

CEYLON: Trincomali (*Dr. W Horn*). SUMATRA: Nahat (*Bouchard*).

Type in the Genoa Museum.

Described from three examples.

Genus **ACMENYCHUS**, *Ws.*

Acmenychus, Weise, Deut. Ent. Zeits. 1905, p. 318.
Monochirus, Heyden, Schneid. Leder, Beitr. Kaukas. Käferf. 1878, p. 343; Weise, Ins. Deutschl. vi, 1893, p. 1061, and Deut. Ent. Zeits. 1897, p. 144.

GENOTYPE, *Hispa inermis*, Zoubkoff (Asia Minor).

The two claws are fused into one, which is as broad at the base as at the truncate apex. The insects are generally elongate and black. The first joint of the antennæ has a long dorsal spine; the six basal joints are strigose, more or less flattened, having a few bristly hairs; the five apical joints form a club covered with pubescence. The two pairs of spines on the front margin of the prothorax are far away from each other. The elytra are punctate-striate, the punctures being rough and large; the surface is either plane or tuberculate, the lateral margins being toothed and the apical ones bearing four or five well-developed spines. The front tarsus may be as long as the tibia; the claw-joint is thin, projecting much beyond the lobes of the third joint.

Range. Caucasus, Asia Minor, Nepal, Mongolia.

Only three species have been included in this genus, viz. *inermis* and *potanini*, Ws. (Mongolia), and *tuberculosus*, Mots. (Nepal).

128. **Acmenychus tuberculosus**, *Mots.*

Acmenychus tuberculosus, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 239.

This species is doubtfully placed by Weise in this genus. The following is a translation of Motshulsky's description :—

"A little larger and more elongate than *H. atra*, of an opaque black colour, with the elytra more shining. The elytral spines are reduced to pointed tubercles, those at the sides, as well as those of the prothorax, are shorter than those of *atra*. The antennæ are fairly stout and almost of similar structure to those of the last species [*Hispa brunnipes*, Mots., Batavia], but without the lateral spines on the second and third joints. The legs are a little broadened, the intermediate ones being curved and armed with a tooth on the exterior side in front of their extremity."

NEPAL.

Type destroyed.

The original description in French is not very precise.

Genus **HISPELLA**, *Chap.*

Hispella, Chapuis, Gen. Col. xi, 1875, p. 334; Weise, Ins. Deutschl. vi, 1893, pp. 1061 & 1064; id., Deut. Ent. Zeits. 1897, p. 143; Maulik, Rec. Ind. Mus. 1915, p. 374.

GENOTYPE, *Hispa atra*, L. (South Europe, North Africa, Asia Minor).

The insects belonging to this genus are small, varying in length from $3\frac{1}{2}$ mm. to $4\frac{1}{2}$ mm. They are very spiny, the spines being

more or less large as compared with the size of the insect. The chief character that easily distinguishes this genus from all others is that each of the first six joints of the antennæ bears spines; the apical five are generally shorter and together form a club, being as a rule more pubescent. The prothorax is generally not shiny, and always less so than the elytra; it is broader than long, rugose, and sparsely covered with white hairs; there are two shallow transverse depressions, one before and the other behind the middle, and the sides are strongly rounded. On each side there are always three spines, which may be long and curved or short and straight; they may have a common base, or the anterior two may be joined at the base and the third separate; on the front margin there are always two pairs of spines, each pair having a common base. The scutellum is small, generally opaque like the prothorax, with the apex rounded. The elytra are punctate-striate and always bear a great number of spines on the surface and at the margins all round.

Range. Europe, North Africa, Asia Minor, Turkestan, India, Ceylon.

H. atra is the insect on which Linnæus founded the whole group which is now called HISPINÆ. This species does not occur within our faunistic limits, but it is included in the key as it is the only other described species of the genus that occurs outside the Indian sub-region. *H. ceylonica*, Mots., being unknown to me, has been omitted from the key.

Key to the Species.

1. Third to sixth joints of antennæ dilated (flattened).	*atra*, L.
1′. Third to sixth joints not dilated ...	2.
2. Antennæ short and stout; first joint with five dorsal spines ..	*brachycera*, Gestro, p. 157.
2′. Antennæ comparatively long; first joint with less than five dorsal spines .	3.
3. First joint of antennæ with four dorsal spines, second joint with two ..	*stygia*, Chap., p. 159.
3′. First joint of antennæ with less than four dorsal spines	4.
4. First joint of antennæ with three dorsal spines, second joint with one .. .	*ramosa*, Gyll., p. 160.
4′. First joint of antennæ with two dorsal spines, second joint also with two, one very minute	*andrewesi*, Ws., p. 161.

129. Hispella brachycera, *Gestro.*

Hispella brachycera, Gestro, Ann. Mus. Civ. Genova, 1897, p. 123, f. 15.

Body oblong, black, bearing very long spines, which are either yellowish brown or dark brown, the tips being generally black; the elytra shiny and with bronzy reflections.

Head as broad as the front part of the prothorax; the interocular space rugose, and a row of white hairs round each eye. The first joint of the antennæ is the longest and bears one long spine with four small ones round its base; the principal spine on it is almost as long as the second, third and fourth joints together; on each successive joint to the sixth the dorsal spines become shorter; the underside of the first six joints bears small spinules or stiff bristles; the five apical joints are pubescent. *Prothorax* dull; three large curved spines on a common base on each side; on the front margin there are two pairs of spines, the front spine of each pair being curved inwardly. The disc is rugose, with a longitudinal impression down the middle, and sparsely covered

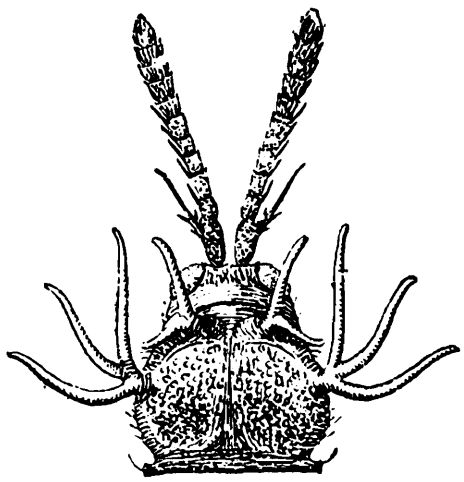


Fig. 47.—Head and prothorax of *Hispella brachycera*, Gestro.

with long white hairs; the rugose portion is surrounded on all sides by a smooth border. *Scutellum* dull, small, a little depressed in the middle, granulate, the apex rounded. *Elytra* punctate-striate, sparsely covered with erect white hairs. On each elytron there are about four longitudinal rows of spines including the marginal row, the marginal spines being longest at the base and shortest at the apex; at the base near the scutellum there are some small spines. *Underside*: the abdominal sternites are more or less convex and finely rugose, and the sternum is transversely striate. The legs are short and sparsely covered with white hairs; the tarsi are elongate, particularly the third joint, the claw-joint projecting beyond the third.

Length, $3\frac{3}{4}$-4 mm.

PUNJAB: Solan, near Simla. ASSAM: Khasi Hills. W. BENGAL: Nowatoli, Chota Nagpur, vii–ix. 1896 (*R. P. Cardon*). CENTRAL, INDIA: Nagpur, on *Lantana camara*, 30. viii. 1916, and on grass, 22. vii. 1918 (*E. A. d'Abreu*). MADRAS: Rambha, Ganjam district, 20. ix. 1913 (*Annandale*).

Type in the Genoa Museum; cotype in the Oberthür collection.

130. Hispella stygia, *Chap.*

Hispella stygia, Chapuis, Ann. Soc. Ent. Belg. xx, 1877, p. 51; Gestro, Ann. Mus. Civ. Genova, 1897, p. 124, f. 14; Weise, Deut. Ent. Zeits. 1897, p. 126; Maulik, Rec. Ind. Mus. 1915, p. 375.

Body oblong, black; prothorax opaque, elytra shining; the antennæ, legs and the spines may be dark brown, the spines having black tips.

Head rugose, with a row of greyish hairs round each eye. First six joints of antennæ spined, the first with four (one being very long, the other three much smaller), the second with two, the rest with one spine each; on the underside of these joints

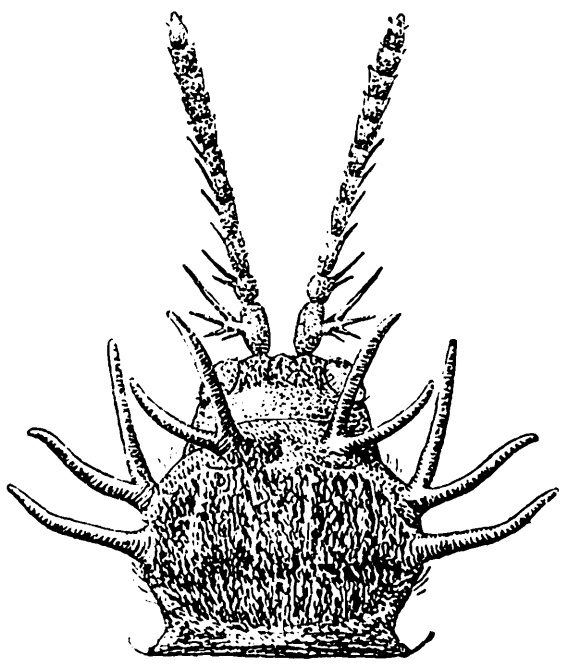


Fig. 48.—Head and prothorax of *Hispella stygia*, Chap.

there are a few spinules. *Prothorax* opaque, each side with three spines, the anterior two standing on a common base, the third separate. The surface is finely rugose, the two shallow transverse depressions being well marked; there are a few scattered greyish hairs. *Scutellum* small, broad, opaque and granulate, the apex rounded. *Elytra* shining, punctate-striate, with many spines, the marginal ones larger than the others and of equal length all round; there are a few scattered and erect greyish hairs. *Underside*: legs slightly rufescent; the anterior femora with small spines beneath; the tarsi more or less broad, the claw-joint projecting beyond the third joint.

Length, 4 mm.

Bombay: Belgaum; Medha, Yenna Valley, Satara dist., 2200 ft., 11–23. iv. 1912 (*F. H. Gravely*); Bassein Fort, Bombay, ix. 1909. Central India: Nagpur, on "Juar," 22, 24. vii. 1916 (*E. A. d'Abreu*).

Type in the Brussels Museum.

131. **Hispella ramosa**, *Gyll.*

Hispella ramosa, Gyllenhal in Schönherr, Syn. Ins. i, 3, App., 1817, p. 6; Gestro, Ann. Mus. Civ. Genova, 1897, p. 124, f. 13; Maulik, Rec. Ind. Mus. 1915, p. 376.
Hispa atra, Gyllenhal, Ins. Suec. iii, 1813, p. 450, note 1.

Body oblong, small, black, covered with long erect greyish hairs, the spines brownish black; prothorax opaque, elytra shining.

Head rugose, with a median longitudinal impression, and a row of longish grey hairs round the eyes. First joint of the antennæ the longest, bearing two longer spines and a shorter one; each of the next five joints with one dorsal spine, becoming progressively smaller, the sixth joint having the smallest spine, the five apical joints are more pubescent and form a club; all the joints granulate and longitudinally sulcate. *Prothorax* with the two

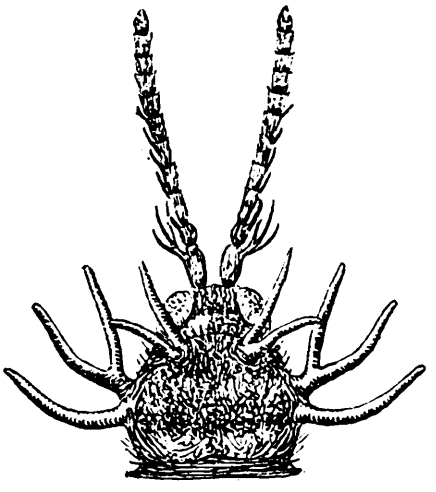


Fig. 49.—Head and prothorax of *Hispella ramosa*, Gestro.

anterior lateral spines on a common stalk, the third being separate but continuous at the base. The disc is rugose, with a median longitudinal line and sparsely covered with long greyish hairs; the shallow transverse depression behind the middle is well marked, the anterior one is not. *Scutellum* small, broad, opaque, and granulate, with the apex rounded. *Elytra* shining black or brownish black, thinly covered with erect greyish hairs, punctate-striate, with numerous long spines, the marginal spines at the apex being shorter. *Underside* black, subnitid, granulate, very thinly covered with greyish hairs; the claw-joint of the tarsi projects much beyond the third joint.

W Bengal: Paresnath, 4000–4400 ft., 15.iv.1909 (*Annandale*). United Provinces: Dhikala, Naini Tal district, 26.iv.1908. Madras: Bangalore, 15.x.1910 (*Annandale*); Nilgiri Hills (*H. L. Andrewes*). Ceylon: Colombo, 7–27.iv.1882 (*G. Lewis*).

Type in the Stockholm Museum.

132. Hispella andrewesi, *Ws.*

Hispella andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 126; Maulik, Rec. Ind. Mus. 1915, p. 376.

Body oblong, short, shining, black; upper side sparsely covered with greyish hairs; elytra with brassy sheen.

Head rugose, with a row of greyish hairs round each eye. The first six joints of the antennæ bear dorsal spines, the first joint having two long ones, the second two, one of which is minute, and the third to sixth one each. *Prothorax* broader than long, sparsely covered with greyish hairs, with the sides rounded; the two anterior lateral spines stand on a common base, the third is separate; on the front margin the two pairs of spines stand close together, the spines of each pair being straight. The disc is

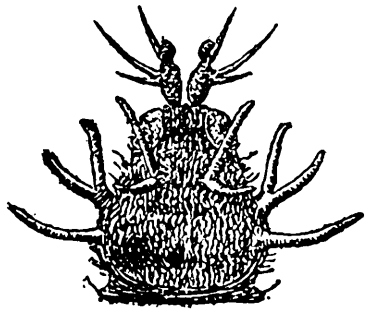


Fig. 50.—Head and prothorax of *Hispella andrewesi*, Weise.

rugose, with a longitudinal line down the middle, the transverse shallow depressions being well marked. *Scutellum* small, granulate, subopaque, the apex rounded. *Elytra* punctate-striate, each with about four rows of spines including the marginal row; the spines of the latter are equal in length all round. *Underside* granulate; the abdominal sternites are more or less convex, with a few scattered greyish hairs. On the underside of the mid femur there are three small spines: the tarsi are elongate, the claw-joint projecting beyond the third joint.

Length, 4 mm.

BOMBAY: N. Kanara (*T. R. D. Bell*). MADRAS: Nilgiri Hills (*A. K. Weld Downing*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

H. andrewesi, var. **singhalensis**, nov.

The minute spine at the base of the long spine on the second joint of the antennæ is absent.

CEYLON: Kandy, 17–23. ii. 1882, 1727 ft. (*G. Lewis*); Bogawantalawa, 5000 ft., iii–iv. 1882 (*G. Lewis*); Dikoya, 3800–4200 ft., xii. 1881–i. 1882 (*G. Lewis*).

Type in the British Museum.

133. **Hispella ceylonica**, *Mots.*

Hispa ceylonica, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 238; Weise, Deut. Ent. Zeits. 1897, p. 127.

Motshulsky described this insect in French, a translation of which is given below:

"Stature and form of our *H. atra* but of black colour, metallic, shining, with the antennæ more slender, the joints longer, of which the first is a little swollen and armed with one double spine, the second oval and armed on the upper side with a long curved spine, the third a little longer, the fourth a little shorter than the preceding, the fifth still shorter and thus consecutively up to the seventh which already becomes transverse; all the joints mentioned are terminated by a long spine at their external angle; intermediate tibia narrow and curved. Discovered by M. Nietner, on the Noura-Ellia Mountains on the Island of Ceylon."

Type destroyed.

Motshulsky seems to indicate that *H. ceylonica* has the first seven joints of the antennæ with dorsal spines; but the description is ambiguous, and this interpretation, which is accepted by Weise, is rendered doubtful by the fact that no other species in the subfamily is known to have a spine on the seventh joint. It is possible that *H. ceylonica* is really identical with the form described above as *H. andrewesi*, var. *singhalensis*.

Genus **PHIDODONTA**, *Ws.*

Phidodonta, Weise, Deut. Ent. Zeits. 1906, p. 404.

GENOTYPE, *Phidodonta modesta*, Ws.

This genus consists of only two species. The type is an elongate insect without any spines on the disc of the elytra, the lateral margins of which bear small teeth, the apex being armed with four or five large pointed spines. The antennæ are 11-jointed; the first joint is large and has a long dorsal spine, the second to sixth joints are shining, longitudinally channelled and scattered over with a few hairs; the five apical joints form a club covered with brown pubescence. The prothorax has on each side three separate horizontal, small and blunt spines; on the front margin there are two pairs of small and blunt spines, which are situated at some distance from the centre; these spines do not stand on a common base, and are directed sideways. The elytra are punctate, with eight ill-defined rows of punctures on each; the punctures are large and more or less reticulate, hence the rows are not distinct. The claws are separate, and equal.

Range. India, Australia.

134. Phidodonta modesta, *Ws.*

Phidodonta modesta, Weise, Deut. Ent. Zeits. 1906, p. 404.

Body elongate, black, subnitid.

Head rugose, with a row of silvery hairs round each eye. The first joint of the antennæ is the longest and bears a dorsal spine; the third joint longer than the second, which is rounded; the fourth, fifth and sixth rounded and almost equal; these joints are strigose and bear a few bristly hairs; the five apical joints covered with brown pubescence. *Prothorax* as long as broad, with the sides

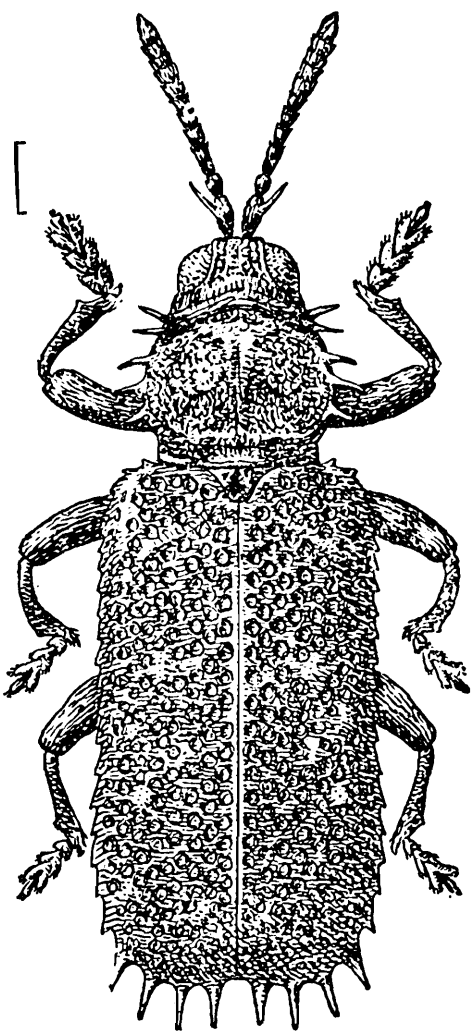


Fig. 51.—*Phidodonta modesta,* Weise.

rounded; on each side three small, blunt, horizontal spines, which are separate and equidistant; on the front margin almost near the anterior angles, there are two pairs of spines also pointing horizontally outwards. The disc is rugose, with a faint longitudinal impression down the middle, and without hairs; the transverse shallow depression behind the middle is more pronounced than the anterior one. *Scutellum* broad, shining, impunctate, with a faint depression in the middle, the apex rounded. *Elytra* elongate, broader at the base than the prothorax, without hairs.

On each elytron there are eight ill-defined rows of large punctures, which are rounded or more or less hexagonal, some of them coalescing; the margins are toothed, with four or five spines at the apex. *Underside* subnitid, rugose; the abdominal sternites rugose at the sides and shining and smooth in the middle. Femora stout, mid tibiæ curved; the front tarsi much larger than hind ones, and longer than the front tibia; the claw-joint projects much beyond the third joint.

Length, 5–6 mm.

BENGAL: Pusa, 9. v. 1905. MADRAS: Bellary district, 31. vii. 1912.

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

This insect is a pest of sugar-cane.

Genus **RHADINOSA**, *Ws.*

Rhadinosa, Weise, Deut. Ent. Zeits. 1905, p. 318.

GENOTYPE, *Rhadinosa nigrocyanea*, Motshulsky (Altai, Manchuria, Japan).

This genus comprises eight species, of which five occur within our limits. The insects are small and elongate. The joints of the antennæ are cylindrical, the first joint having a dorsal spine. The prothorax is broader than long; the upper surface rugose and with two transverse shallow depressions; each side has three spines; the front margin has two pairs of spines. The elytra are punctate-striate and have numerous spines. The claws are free, separate and equal. The mid tibiæ are curved.

Range. Asia.

Key to the Species.

1. Elytral punctures coarse, large and shallow	2.
1′. Elytral punctures small, round, and deep.	3.
2. The disc of the prothorax is broken up into many shallow hollows; spines short.	*girija*, Maulik, p. 167.
2′. The disc is not broken up into shallow hollows; spines longer	*reticulata*, Baly, p. 164.
3. Of the two anterior stalked lateral spines on the prothorax the hind one is recurved like a hook . . .	*machetes*, Gestro, p. 166.
3′ The posterior spine is not so recurved	4.
4. Elytra black; size small (4 mm.)	*laghua*, Maulik, p. 166.
4′ Elytra blue-black; size larger (4½ mm.).	*lebongensis*, sp. n., p. 168.

135. **Rhadinosa reticulata**, *Baly.*

Hispa reticulata, Baly, Ann. Mus. Civ. Genova, 1888, p. 665.

Body oblong, black, shining, sparsely covered with greyish hairs.

Head rugose, with a longitudinal impression down the middle; a row of silvery hairs round the eyes. Antennæ less than half

the length of the body, attenuated towards the apex; the basal joint armed with a long dorsal spine, the second joint small and rounded, the third very long; the fourth, fifth and sixth almost equal in length; the six basal joints with deep longitudinal impressions; the five apical joints form a slender club, and are pubescent. *Prothorax* broader than long, the sides rounded, converging anteriorly towards the apex; each side is armed with three spines, the anterior two standing on a common base just before the middle, the third situated half way between the middle and the base; the anterior angle is armed with a short subacute

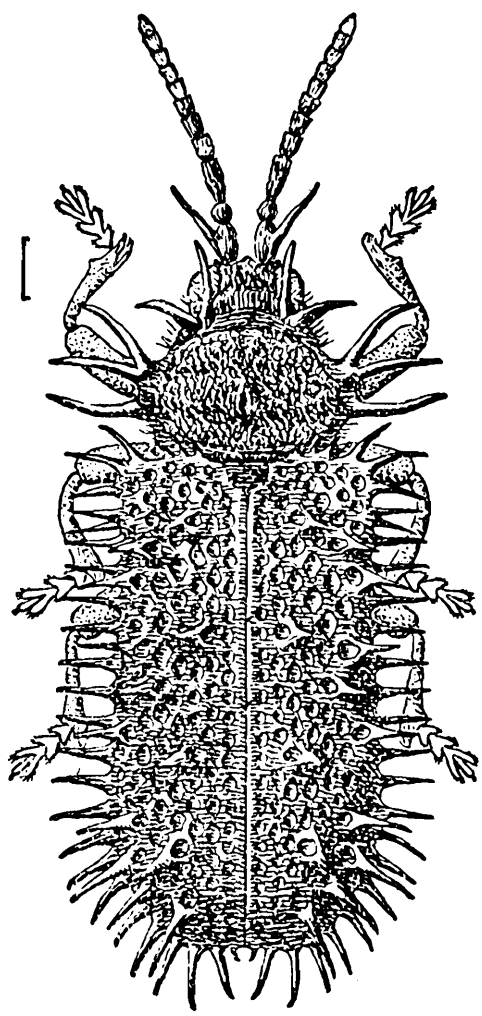


Fig. 52.—*Rhadinosa reticulata*, Baly.

tooth; the front margin bears two pairs of strong erect spines. The disc is rugose, sparingly clothed with scale-like white hairs, with a fine longitudinal impression down the middle and a transverse shallow depression at the base. The extreme apex is subcylindrical, the hairs on it being longer and erect. *Scutellum* quadrate, almost as broad as long, opaque, finely granulate. *Elytra* oblong, broader at the base than the prothorax, armed at the sides and apex with acute spines; the upper surface strongly

and coarsely punctate-striate; each elytron with a treble row of strong erect spines. *Underside*: the claw-joint projects beyond the third joint.

Length, $5\frac{1}{4}$ mm.

BURMA: Teinzo (*Fea*).

Type in the Genoa Museum.

136. **Rhadinosa machetes**, *Gestro*.

Pseudispela machetes, Gestro, Termesz. Füz. 1898, p. 260; id., Ann. Mus. Hung. 1907, p. 76.

Body oblong, black, subnitid.

Head rugose, with a row of greyish hairs round each eye. Antennæ robust, gradually attenuated towards the apex, the first joint with a dorsal spine which is obliquely directed forwards and reaches almost to the apex of the third joint. *Prothorax* broader than long, rounded at the sides, the apex narrower than the base, with a transverse shallow sulcation at the base and a longitudinal impressed line down the middle on either side of which there are irregular lines in various directions. The spines of the anterior margin are obliquely directed forwards. Each lateral margin is armed with three spines, the anterior two standing on a common base, the hinder spine almost at right angles to the anterior one and recurved like a hook; the third spine is free and directed horizontally outwards; all the spines are robust and moderately long. *Scutellum* triangular, somewhat hollowed, the apex rounded. *Elytra* elongate, regularly punctate-striate. The spines on the disc are robust and short; the marginal spines short, robust, and slightly curved backwards, the apical ones longer and straight.

Length, 6 mm.

INDIA.

Type in the Budapest Museum.

137. **Rhadinosa laghua**, *Maulik*.

Rhadinosa laghua, Maulik, Rec. Ind. Mus. 1915, p. 376.

Body oblong, small, not thickset like the other members of this genus. Black, with a faint metallic sheen; in some specimens the colour is a mixture of testaceous and black; subnitid, and sparsely covered with white adpressed hairs.

Head coarsely punctate, not rugose, deeply sulcate from the vertex to a point between the bases of the antennæ, a row of white hairs round the eyes, and a few similar hairs on other parts of the head. Antennæ long, slender, thickened towards the apex, the five apical joints form a club, thickly covered with brownish pubescence; the apical joint bluntly pointed, the basal joint long and stout, with a long dorsal spine pointing forwards; 2nd joint short and rounded; 3rd, 4th, and 5th joints longer than 2nd, and almost equal; 6th joint shorter than the preceding ones; 1st–6th joints with a few scattered white hairs. *Prothorax* quadrate, as

long as broad, all the four angles with a blunt tooth, the lateral margins rounded; two pairs of spines in front; on each lateral margin one pair of spines having a common base, with a free spine behind them. The disc is rugose and coarsely covered with short white hairs, with a shallow transverse depression near the base. *Scutellum* finely punctate, apex rounded; in the ♀ rather broader than long, slightly depressed in the middle, the apex widely rounded. *Elytra* thinly covered with long spines, the marginal row being horizontal; in addition to the usual deep punctures the surface is very minutely punctate. *Underside*: legs finely punctate; all the femora with three small, pointed, curved teeth on the underside; the third tooth may be very minute.

Length, 3–5 mm.

BENGAL: Calcutta, 3–4. viii. 1907 (*Annandale*); Sunderbuns, 16. xi. 1909 (*T. Jenkins*). ASSAM: Mangaldai, 16–18. x. 1910, 30, 31. xii. 1910 (*Kemp*); Siliguri, 3–4. vi. 1911 (*Annandale & Kemp*). BURMA: Minbu, 6–8. viii. 1914 (*T. B. Fletcher*).

138. **Rhadinosa girija**, *Maulik*.

Rhadinosa girija, Maulik, Rec. Ind. Mus. 1915, p. 377.

Oblong; black, shining, sparsely covered with long, erect, brownish hairs.

Head rugose, the forehead depressed in the middle, the inter-antennal space elevated into a sharp ridge, the spaces between the bases of the antennæ and the eyes also elevated. Antennæ thickest in the middle (7th joint), gradually becoming thinner towards the apex; the five apical joints form a club, covered with brownish pubescence; the basal joint long and stout, with a stout dorsal spine, 2nd joint short and rounded, 3rd joint the longest, 4th–6th joints equal in length, the six basal joints bare. *Prothorax* quadrate, almost as long as broad, narrowed in front, all four angles ending in a small blunt tooth, the lateral margins rounded; on the front margin there are two pairs of spines; on each lateral margin there is a pair of spines standing on a common base and behind them a free single spine, all spines being short and stout. The disc is broken up into many shallow hollows, with a shining flattened elevation in the centre and a shallow wide depression near the base; the base itself smooth. *Scutellum* as long as broad, finely punctate, the apex rounded. *Elytra* punctate-striate, the punctures large and shallow, the spines short and stout. *Underside* black, shining; the legs short, the femora with a small tooth on the underside.

Length, 4 mm.

NEPAL: Chutri Gouri, 26–27. iv. 1907.

Type in the Indian Museum.

Described from one example.

139. **Rhadinosa lebongensis**, sp. nov.

Body oblong, black, opaque; the elytra blue-black, subnitid.

Head rugose with an impressed line along the middle, scattered over with silvery hairs, and a row of these encircling each eye. The antennæ are comparatively short; the first joint is the largest, having on its dorsal side a long sharp spine which is almost as long as the second and third joints; the second joint is small and rounded, the third joint the longest, the fourth and fifth elongate and equal, the sixth short, the next five not thicker than the preceding joints and slightly more pubescent. *Prothorax*: the disc is transverse, dull, finely rugose and sparsely covered with white hairs; there are two transverse depressions, the posterior one being deeper. On the front margin there are two pairs of spines, not very far apart; on each lateral margin there is a pair of spines having a common base, and a single free spine behind them; all the spines are long, moderately thin and pointed. *Scutellum* triangular and finely granulate, with the apex rounded. *Elytra* sparsely hairy, punctate-striate, the punctures being deep and small. On each elytron there are about twenty-five long, moderately thin and pointed spines, with a short row of small spines along the scutellar edge; on each elytral margin, from the base to the sutural angle, there are about twenty similar long spines which are horizontal; those along the apical margin may be slightly shorter. *Underside* shining, sparsely hairy; the abdominal sternites convex. The mid femora with small teeth on the underside; the front tibiæ short and excavated at the apex; the claw-joint projects beyond the lobes of the third joint, the claws being insignificant.

Length, 4½ mm.

UNITED PROVINCES: Ranikhet, 6. vii. 1916 (*H. G. Champion*). SIKKIM: Lebong, 5000 ft., ix. 1908 (*Lefroy*). ASSAM: Shillong (*F. W Champion*); Manipur (*Doherty*).

Type in the British Museum.

Described from twelve examples.

Genus **ASAMANGULIA**, *Maulik.*

Asamangulia, Maulik, Rec. Ind. Mus. 1915, p. 378.

GENOTYPE, *Asamangulia cuspidata*, Maulik.

Body elongate; antennæ 11-jointed, the first joint with a dorsal spine; claws completely separate, unequal, the inner being smaller than the outer; frontal and marginal spines of the prothorax short, robust, and suberect; elytra punctate-striate, tuberculate or spinose, with a row of horizontal marginal spines, the apical spines being longer.

Range. India, Java.

This genus, which comprises only two species, is distinguished from all the other genera of the HISPINÆ by the unequal claws.

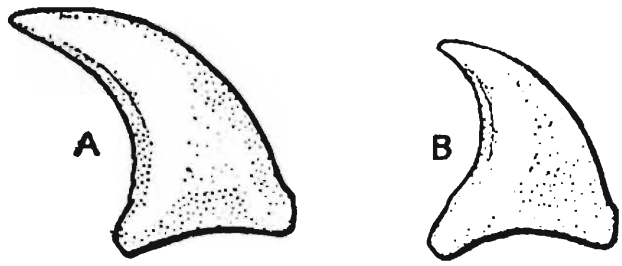


Fig. 53.—Unequal claws of *Asamangulia cuspidata*, Maulik.

Asamangulia is related to *Phidodonta*, Ws., by the form of the body, and to *Rhadinosa*, Ws., by the completely separated claws.

140. Asamangulia cuspidata, *Maulik.*

Asamangulia cuspidata, Maulik, Rec. Ind. Mus. 1915, p. 378.

Elongate, black, shining; the prothorax sparsely covered with brownish adpressed hairs.

Head rugose, prominently elevated round the bases of the antennæ, which are comparatively short, and thickest in the

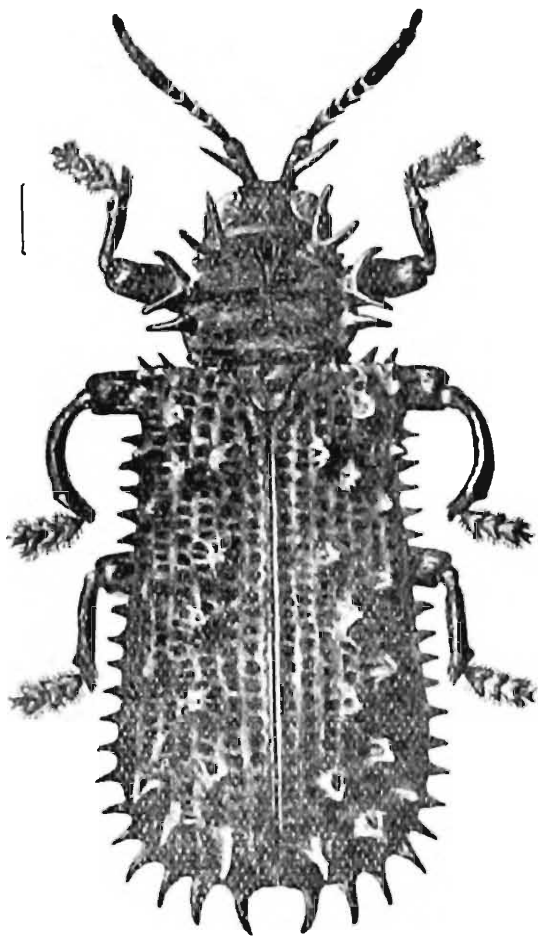


Fig. 54.—*Asamangulia cuspidata*, Maulik.

middle; 1st joint large, dorsally produced into a long spine; 2nd joint small and rounded, 3rd the longest; joints 4–6 subequal;

joints 2–6 strigose; the five apical joints forming a pointed club and covered with reddish brown pubescence. The labrum is almost tubular in shape. *Prothorax* more opaque than the elytra, rugose, with two transverse depressions, and a deep longitudinal furrow down the middle; the sides rounded; the front margin with two pairs of spines, situated at some distance apart and pointing upwards and slightly outwards; each lateral margin has three spines, the anterior two having a common base (in some cases they are almost separate) and the third being free; the spines are short, stumpy and suberect. *Scutellum* triangular, punctate and depressed in the middle, with the apex rounded. *Elytra* broader at the base than the prothorax, deeply punctate-striate. The cusp-like tubercles on the disc are smaller on the basal area, becoming larger (almost stout spines) towards the apex; each lateral margin has 22 or 23 small spines, which are slightly curved backwards, about three or four on the apical margin being larger. *Underside* subnitid, finely punctate and sparsely covered with white hairs. The front tibiæ are short and excavated at the apex; the mid tibiæ are curved; the front tarsi are larger than the mid or hind ones, and almost equal to the front tibiæ.

Length, 5–6 mm.

BENGAL: Pusa.

Type in Mr. H. E. Andrewes' collection, London; cotypes in the Genoa Museum, in the British Museum, and in the Indian Museum.

Described from eleven examples.

Genus **DACTYLISPA**, *Ws.*

Dactylispa, Weise, Deut. Ent. Zeits. 1897, p. 137; id., Arch. f. Naturg. 1899, p. 265, note.
Podispa, Chapuis, Gen. Col. xi, 1875, p. 335 (pars).
Hispa, Chapuis, Gen. Col. xi, 1875, p. 333 (pars).
Monohispa, Weise, Deut. Ent. Zeits. 1897, p. 147.
Triplispa, Weise, op. cit. 1897, p. 147; Gestro, Bull. Soc. Ent. Ital. 1902, p. 59.

GENOTYPE, *Hispa severini*, Gestro (= *Dactylispa andrewesi*, Ws.).

This is a very large genus, comprising about 238 species, mostly from the tropical regions of the Old World, yet it is a homogeneous one. The beetles are generally oblong-ovate, varying a good deal in size. They always have spines on the front as well as the lateral borders of the prothorax, and on the disc and margin of the elytra. This character, together with the equal claws, will distinguish this genus from all others in the subfamily.

Head: the eyes are convex, the interocular space generally having a longitudinal median sulcation; the collar is slightly constricted. The clypeus is long, generally covered with hair. The antennæ are always 11-jointed, but their structure is variable; the first joint in most cases is long and slightly bent outwards. *Prothorax* always narrower at the base than the elytra, and the

posterior portion cylindrical and always narrower than the base; on the front border on each side of the middle line there is at least one long spine, but there may be two or a group of three spines. Each side bears either two or three or four spines. The surface is always rough, generally with two transverse shallow depressions, one along the base and the other in front of it. *Scutellum* triangular, with the apex rounded. *Elytra* punctate-striate, the punctures being generally large and squarish, but sometimes quite small and rounded; usually each elytron has eight to ten rows, and spines are always present, varying in form, number and position. *Underside* slightly punctate, and sparsely hairy or glabrous. The legs are fairly long; the tibiæ are straight, as a rule, but in some cases the mid tibiæ may be slightly curved; each tarsus has a pair of prominent and equal claws, the claw-joint generally projecting beyond the bilobed joint.

Range. Asia, Africa, Madagascar, the Pacific Islands.

I have taken the above species as the type because it is the first one described by Weise (Deut. Ent. Zeits. 1897, p. 129) when defining the genus (*l. c.* p. 137); but it falls as a synonym of Gestro's species *severini*, which was published in the same year, but before Weise's appeared.

Key to the Sections.

1.	Front border of the prothorax with one long spine on each side of the middle line . .	Section I, p. 171.
1′.	Front border of the prothorax with a pair of spines on each side of the middle line	2.
1″.	Front border of the prothorax with a group of more than two spines on each side of the middle line	3.
2.	Each side of the prothorax with two spines.	Section II, p. 172.
2′.	Each side of the prothorax with three spines.	Section III, p. 173.
2″.	Each side of the prothorax with four spines.	Section IV, p. 225.
3.	Each side of the prothorax with three spines.	Section V, p. 228.
3′.	Each side of the prothorax with four or more than four spines	Section VI, p. 232.

Section I.

141. **Dactylispa singularis**, *Gestro.*

Hispa singularis, Gestro, Ann. Mus. Civ. Genova, 1888, p. 179.

Body oblong, subnitid, black, sometimes blue-black.

Head: the antennæ, especially on the basal joint, bear deep, longitudinal, and more or less regular striations. *Prothorax* narrowed in front; on the anterior margin it carries two short robust spines, somewhat distant from each other and a little inclined outwardly; slightly external to and in front of each spine, and perfectly separate from it, there is a rudiment of a spine which has the form of a very minute tooth; on each side there are three spines, which are very short and robust, the anterior

two being joined together at the base into a short stout stem, the posterior one shorter than the others and free. The upper surface is entirely punctate and rugose, being sparsely covered with short whitish hairs; there is a narrow, transverse, shining and smooth area in the middle, and a longitudinal median stria which is deeper where it crosses the transverse smooth area, and behind this latter there is a strong transverse depression. *Elytra* broad, irregularly sculptured with large, deep and dense punctures. There are no spines on the disc, but there are several short, stout, conical tubercles at the base; the spines on the humeral margin, and all along the lateral margin up to the sutural angle, are numerous, short, robust and slightly curved backwards like a hook. *Underside* dark, pitch-black, rugose-punctate and finely striate at the sides.

Length, 6½–7 mm.

BURMA: Bhamo (*L. Fea*).

Type in the Genoa Museum.

SECTION II.

142. **Dactylispa doriæ**, *Gestro.*

Hispa doriæ, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 256.

Body oblong-elongate. Black or dark brown, shining; the antennæ are yellow-brown, with the basal joint darker; the elytra with ferruginous yellow spots and bands: a small spot near the scutellum, then an oblique band, then a shorter transverse band, then a curved band (concave in front), a small ante-apical spot, and an apical fascia; but these markings are variable.

Head smooth, with a deep longitudinal groove down the middle, and a row of silvery hairs round each eye. The first joint of the antennæ is long and stouter than the other joints and a little curved outwardly, the second much smaller, the third joint the longest, the fourth to sixth subequal in length, the third to sixth slender with the apex slightly clavate; the seventh to eleventh are slightly thicker and more hairy: the seventh is almost equal in length to the preceding joint, the rest being equal to each other except the last. *Prothorax* almost as long as broad, the anterior part cylindrical, and bearing two pairs of spines; the anterior spine of each pair is thinner and much shorter than the posterior, and they form an acute angle between them; there is a pair of spines on each side of the prothorax, their bases being contiguous. The anterior spine is long and curved, and the posterior minute, the long spine bearing one or two setæ; the colour of the spines may be black or the apices dark brown with the bases black. The surface of the prothorax is concave, there being a smooth glabrous elevated transverse area in the middle, and a longitudinal median stria; the concave surface has broad coarse punctures and scattered whitish hairs. *Scutellum* triangular with the apex rounded and the surface granular; the colour may be black or very dark brown. *Elytra* irregularly punctate-striate, the punctures being large and

circular in some specimens, the interstices raised. On the dorsal surface of each elytron there are about sixteen long and short spines, the margin having about fourteen, with some short spines among the longer ones; on the apical margin the spines are much smaller. The colour of the spines may be black or dark brown. *Underside*: the middle of metasternum, abdominal sternites and the legs pale yellow, the rest of the area on the underside black or dark brown.

SIKKIM: Mungphu (*Atkinson*); Gopaldhara, Rungbong Valley (*H. Stevens*); Lebong, 5000 ft., vi. 1909 (*Lefroy & Howlett*); Pashok, 3500 ft, v–vi. 1916 (*F. H. Gravely*). BENGAL: Buxar Duars, v. 1907 (*D. Naoroji*). ASSAM: Patkai Hills (*Doherty*). BURMA: Karen Hills (*L. Fea*); Taung-ngu (*Corbett*); Tavoy (*Doherty*).

Type in the Genoa Museum.

The example from Tavoy is more black than brown; the first two joints of the antennæ and the spines of the prothorax are black; all the spines of the elytra are black except one or two on the apical margin.

SECTION III.

Key to the Species.

1.	Insect entirely black, elytra sometimes with bluish or brassy reflections.	2.
1′.	Insect not entirely black, nor so coloured	11.
2.	Length 2½–3 mm.; antennæ clubbed, with the first joint truncate at the apex	3.
2′.	Length 4–6 mm.; antennæ not clubbed	5.
3.	Pronotum without any smooth discal areas	*dilaticornis*, Duv., p. 178.
3′	Pronotum with one or three smooth discal areas	4.
4.	Pronotum with a single oval area	*assamensis*, Ws., p. 178.
4′	Pronotum with three smooth vittæ.	*pusilla*, Ws., p. 179.
5.	The hindmost or third lateral spine on the prothorax longer than the first.	*perroteti*, Guér., p. 180.
5′.	The hindmost spine shorter than either of the anterior ones	6.
6.	Prothoracic spines with setæ	7.
6′.	Prothoracic spines without setæ	8.
7.	Lateral group of the three prothoracic spines on a common stalk	*krishna*, sp. n., p. 181.
7′.	Anterior two of the lateral group of prothoracic spines stalked, the third quite separate	*spinipes*, Ws., p. 182.
8.	The discal and marginal spines of elytra minute	*brevispinosa*, Chap., p. 183.
8′.	The discal and marginal spines of elytra longer	9.

9.	Pronotum with a raised area having transverse striæ on it; discal spines of elytra longer than the marginal ones	*srnkæ*, Ws., p. 184.
9′	Pronotum without such an area; discal and marginal spines of elytra of similar length	10.
10.	Stalk of the two anterior lateral spines of the prothorax much shorter than the first spine	*peregrina*, sp. n., p. 184.
10′	Stalk of the two anterior lateral spines almost as long as the first spine	*lankaja*, sp. n., p. 186.
11.	The three lateral spines on the prothorax arising independently; not stalked; insect broad; marginal spines of the elytra flattened, discal spines very short	12.
11′.	No such combination of characters	20.
12.	Lateral spines of the prothorax not arising from a common base; insect deep black with abdominal sternites only red-brown .. .	*trishula*, sp. n., p. 187.
12′	Lateral spines of the prothorax arising from a common base; coloration different	13.
13.	Upper side yellow or red with at least some of the discal spines of the elytra black	14.
13′	Upper side black or brownish black; antennæ, legs and the abdominal sternites yellow or yellow-brown ..	15.
14.	Pale yellow with three oblique black fasciæ on each elytron	*feæ*, Gestro, p. 188.
14′.	Red or dark red, without three black fasciæ on each elytron	*harsha*, sp. n., p. 188.
15.	Pronotum with three longitudinally elevated areas: prothoracic and marginal spines of the elytra more flattened	16.
15′.	Pronotum without three longitudinally elevated areas; prothoracic spines less flattened.	17.
16.	Insect larger ($7 \times 4\frac{1}{2}$ mm.); marginal elytral spines longer; elytra less constricted in the middle; deeper black.	*prasastha*, sp. n., p. 189.
16′.	Insect smaller ($5\frac{3}{4}$ mm.); marginal elytral spines shorter; elytra more constricted in the middle, black more mixed with brown	*platyacantha*, Gestro, [p. 191.
17.	Upper side entirely black	18.
17′.	Upper side black mixed with brown	19.
18.	Interocular space without a depression; sides of prothorax parallel behind the spines: apical margin of elytra with minute spines (teeth) .	*xanthopus*, Gestro, p. 192.
18′.	Interocular space with a depression; sides of prothorax divergent behind the spines; apical margin of the elytra with longer spines .. .	*sadonensis*, sp. n., p. 193.

19.	Upper side more brownish than black, elytral margins not lighter; underside (except the legs and the abdominal sternites) black	*bindusara*, sp. n., p. 193.
19′.	Upper side brownish black with the elytral margins lighter; underside yellow-brown, sternum very slightly darker	*divarna*, sp. n., p. 194.
20.	Third lateral spine of prothorax long, at least not shorter than either of the anterior two	21.
20′.	Third lateral spine shorter than either of the anterior two	26.
21.	Posterior spine of the front pairs and second lateral spine of prothorax bearing one or two spinules... .	*jiva*, sp. n., p. 195.
21′.	None of the prothoracic spines bearing spinules	22.
22.	Pronotum with three raised shining impunctate prominences ..	*corpulenta*, Ws., p. 196.
22′.	Pronotum without three prominences	23.
23.	The stem of the lateral group of prothoracic spines is directed forwards so that the first spine on one side is parallel to that on the other	*hæckeli*, Gestro, p. 197.
23′.	Arrangement of the spines different .	24.
24.	Lateral spines of the prothorax equally long .	*lohita*, sp. n., p. 197.
24′.	Lateral spines not equal	25.
25.	The two anterior lateral spines of the prothorax bifurcate at a higher point on the stem	*filiola*, Ws., p. 199.
25′.	The two anterior spines bifurcate at a lower point on the stem ...	*xanthospila*, Gestro, [p. 200.
26.	Length 7 mm.; pronotum with a slightly raised horseshoe-shaped area, which is microscopically granular	*severini*, Gestro, p. 201.
26′.	Length 3–6 mm.; pronotum without such a granular raised area .	27.
27.	Interocular space elevated above the level of the eyes, interantennal ridge prominent, bases of antennæ in depressions; elytral spines enormously long .	*nandana*, sp. n., p. 202.
27′.	These characters absent	28.
28.	The second interstice on the basal area between two spines elevated, thickened, and conspicuously yellow	*dohertyi*, Gestro, p. 202.
28′.	This character absent . ..	29.
29.	Prothoracic spines with many minute spinules	*mendica*, Ws., p. 203.
29′.	Prothoracic spines without many minute spinules	30.
30.	Antennæ clubbed; colour black, with the elytra, spines and mouth-parts brown	*dilaticornis*, Duv., p. 178.
30′.	Antennæ not clubbed; colouring different	31.

31.	Insect narrow and very elongate, brown with the discal spines only of the elytra black	*longula*, sp. n., p. 204.
31′.	Insects without this combination of characters	32.
32.	A triangular fossa behind the scutellum	*paronæ*, Gestro, p. 205.
32′.	No such area	33.
33.	Body yellow to red-brown; suture black for a short distance at base, discal spines of elytra black, of these three or four humeral and three parallel to the apical margin longer than the others; sometimes with an oblique black stripe from the humerus to the suture	*atkinsoni*, Gestro, p. 205.
33′.	Insects without this combination of characters	34.
34.	Pronotum testaceous-ferruginous, with six black spots	*montivaga*, Gestro, p. 206.
34′.	Pronotum without six black spots .	35.
35.	Ground-colour pale yellow	36.
35′	Ground-colour darker .	37.
36.	Vertex of head with two contiguous white areas	*delicatula*, Gestro, p. 207.
36′.	Vertex of head without two contiguous white areas	*minuta*, Gestro, p. 208.
37.	Ground-colour of upper side black, sometimes with dark brown patches, legs pale yellow to red-brown .	38.
37′	Ground-colour of upper side yellow-brown to dark brown with the elytral spines black	42.
38.	Pronotum with three longitudinal prominences	*ferrugineo-nigra*, sp. n.,
38′.	Pronotum without such prominences .	39. [p. 208.
39.	Pronotum flat, with a slightly raised transverse smooth area in the middle.	40.
39′.	Pronotum with a very small narrow longitudinal area in the middle ..	*pugnax*, Gestro, p. 209.
39″	Pronotum concave, with a strongly raised convex area in the middle .	41.
40.	Third joint of antennæ longer; anterior prothoracic spines somewhat inclined forwards; marginal spines of elytra more numerous	*balyi*, Gestro, p. 210.
40′	Third joint of antennæ shorter; anterior prothoracic spines erect; marginal spines of the elytra not numerous	*cariana*, Gestro, p. 211.
41.	Third lateral spine of prothorax not stalked with the anterior two	*variabilis*, sp. n., p. 211.
41′	Third lateral spine stalked with the anterior two	*pitapada*, sp. n., p. 212.
42.	Third lateral spine of prothorax curved back like a hook	*gonospila*, Gestro, p. 213.
42′	Third lateral spine not so curved	43.

43.	Prothoracic spines with one or two spinules; the two anterior lateral spines with a characteristically curved and flattish stalk	*vestita*, sp. n., p. 214.
43′.	These characters absent .	44.
44.	Lateral margin of the elytra more explanate, with the spines of at least three different lengths alternating; elytra with the discal spines enormously broadened at the base, the spines themselves being short and pointed	*mahendra*, sp. n., p. 215.
44′.	No such combination of characters .	45.
45.	Pronotum with three longitudinal tubercles..	46.
45′.	Pronotum with a deep and broad excavation on each side	*bilasa*, sp. n., p. 216.
45″.	Pronotum flat, with hardly any raised smooth area in the middle; if any, it is a small longitudinal one ...	47.
45‴.	Pronotum with a transversely raised smooth area in the middle . .	48.
45⁗.	Pronotum with a slightly impressed area on each side and a raised smooth area in the middle . .	*elegantula*, Duviv., p. 217.
46.	Marginal spines alternately long and short	*monticola*, Gestro, p. 218.
46′.	Marginal spines all long	*asoka*, sp. n., p. 218.
47.	The three lateral spines stalked, the third arising from the base of the stem; two or three apical joints of the antennæ bright red-brown	*tissa*, sp. n., p. 219.
47′.	The third spine contiguous but not on the same stem; antennæ uniformly dark	*præfica*, Weise, p. 220.
47″.	The third spine completely free; three apical joints of antennæ dark .	*nalika*, sp. n., p. 220.
48.	The raised transverse smooth area strongly convex, with a longitudinal line in the middle	*albopilosa*, Gestro, p. 221.
48′.	Transverse area raised but not strongly convex	49.
49.	Antennæ, head and prothorax bright yellow-brown; pronotum with two faint black patches	*kamarupa*, sp. n., p. 223.
49′	Not so coloured.	50.
50.	Pronotum black	*maculata*, Gestro, p. 222.
50′.	Pronotum with two black patches, one on each side of the central raised smooth area . ..	51.
51.	Light cinnamon colour; antennæ brown with the basal joint lighter. .	*discicollis*, Gestro, p. 222.
51′.	Testaceous; antennæ black, sometimes brownish black, basal joint never lighter.	*soror*, Ws., p. 224.

143. **Dactylispa dilaticornis**, *Duv.*

Hispa dilaticornis, Duvivier, C. R. Soc. Ent. Belg. xxxv, 1891, p. xlviii.
Dactylispa dilaticornis, Gestro, Ann. Mus. Hung. 1907, p. 71.

Body oblong. Colour black, with bronzy reflections on the elytra; the basal part of the femora and the spines brownish; the spines on the prothorax brownish with the tips black.

Head rugose opaque. The labrum and palpi shining brown. The antennæ are robust, hardly reaching the base of the prothorax; the first joint very thick and angulate at the apex; the second subcylindrical, relatively short, subequal to the fourth joint, which is a little shorter than the third; the last joint acuminate; the first six joints feebly grooved on the underside, the last five forming a dilated club. *Prothorax* almost as broad as long, broadest in the middle, rugose, opaque, with scattered short yellowish hairs, and with a shallow transverse impression near the base. On the front border there are two pairs of spines, the anterior one of each pair being directed forwards and the posterior, which is two-thirds the length, directed backwards; on each side there is a pair of spines having a common base and a small separate one, the first spine being directed forwards and the second, which is shorter, more or less at right angles to it; the small isolated spine is situated at about one-fifth of the length of the elytra from the base and is directed outwards. *Scutellum* subpentagonal, black, shining. *Elytra* subparallel-sided, shining, hardly constricted behind the shoulders, rounded at the apex. The colour is generally brownish with bronzy reflections, but it may be quite brown or black. The surface is deeply punctate-striate, the punctures being round and separated. There are irregular spines, which are situated on the lines of punctures, arranged in three series, the discal spines being shorter than the marginal ones, which latter are regularly arranged and horizontal; on the juxta-sutural line there is a series of small tubercles. *Underside* black, with similar short pubescence to that of the prothorax; the basal parts of the femora testaceous.

Length, 3 mm.

United Provinces: Almora (*H. G. Champion*). Bengal: Calcutta, viii. 1907 (Ind. Mus.); Pusa, vi. & viii. 1910; Chota Nagpur. Madras: Nilgiri Hills; Pondicherry; Karunagapalli, Travancore, 4. v. 1915 (*G. P. Pillai*).

Type in the Brussels Museum.

At Pusa this species has been found near the roots of the rice-plant, also mining leaves of *Panicum* sp. and on "dabi" grass.

144. **Dactylispa assamensis**, *Ws.*

Dactylispa assamensis, Weise, Deut. Ent. Zeits. 1904, p. 451.

Body black, opaque; the elytra are slightly shining, with a greenish tinge.

Head: the antennæ are moderately long; the first joint is short, very thick, obliquely truncate at the apex; the second joint is set on the inner margin of the apex of the first joint, and is short, somewhat broader than long and narrower than the first joint; the third is cylindrical, broadened at the apex and here as broad as the second but again half as long; the fourth to sixth joints are almost equal to each other, or the sixth may be somewhat shorter, each of these being scarcely longer and thicker than the second joint; the following joints form a club, which is a little narrowed and pointed at the apex; the seventh joint is nearly as long as but broader than the third, the eighth to tenth short and transverse, the eleventh longer; the line of the junction between the latter joints is hardly distinct. The interocular space is broad, flat, and densely and finely rugose-punctate; the vertex and collar are convex, smooth, only finely sculptured and shining. *Prothorax* opaque, feebly convex from side to side, fairly closely covered with fine and very obsolete punctures, between these the interspaces are raised into ridges, which, viewed laterally, are seen to run into one another; in the middle is a small oval area, posterior to which is a transverse impression (slightly raised in front of the base) which is less distinctly and closely punctate; in most of the punctures is a small whitish adpressed hair, which is not longer than the puncture itself. The two pairs of spines on the front border are moderately long and stout, the posterior spine of each pair being vertical and the anterior one being almost but not quite at right angles to it. Of the lateral group of three spines the anterior two are united at the base, the third standing at a good distance behind; the first, which is slightly longer than the other two, points straight forwards, the others pointing outwardly with their upper half bent forwards. *Elytra* coarsely punctate. Each lateral margin has thirteen moderately long spines, about five on the apical margin being somewhat shorter; from the humerus a row of seven spines meets the suture at about one-third the length of the elytra; behind these there are on each elytron nine spines arranged in three oblique rows.

Length, nearly 3 mm.

ASSAM: Khasi Hills (*Kricheldorff*).

Type in Weise's collection.

145. Dactylispa pusilla, *Ws.*

Dactylispa pusilla, Weise, Arch. f. Naturg. 1905, p. 103.

Body black, opaque; elytra with slightly brassy reflections. Elytra dorsally moderately and laterally densely covered with short spines. Very nearly related to *D. assamensis*, Ws., but smaller.

Head: the antennæ are clubbed, and shorter and stronger than in *D. assamensis*, Ws., the third joint being shorter, not much longer than the second, fourth, or fifth; the five apical joints are thicker, the seventh being fairly large, and each of the following

almost twice as broad as long; the first joint is thick, with the apex obliquely truncate. *Prothorax* punctate, covered with adpressed white hairs and with three smooth vittæ; of each pair of the spines on the front border the posterior one is vertical, and only half as long as the anterior one; each side has three spines of nearly equal length, the second and third being almost straight or very slightly curved. *Elytra* with the disc moderately and the sides densely set with short spines, which are distinctly shorter and more slender than those of *assamensis*; the spines on the disc have almost the same position, and the marginal ones have their bases thicker, being fifteen to sixteen in number.

Length, 2½ mm.

MADRAS: Mahé, Malabar.

Type in Weise's collection.

146. **Dactylispa perroteti**, *Guér.*

Hispa perroteti, Guérin, Rev. Zool. 1841, p. 12.
Dactylispa perroteti, Weise, Deut. Ent. Zeits. 1897, p. 144.

Body oblong-elongate. Black, shining.

Head small; the eyes are not so strongly convex as in other species of the genus; the interocular space has a deep longitudinal

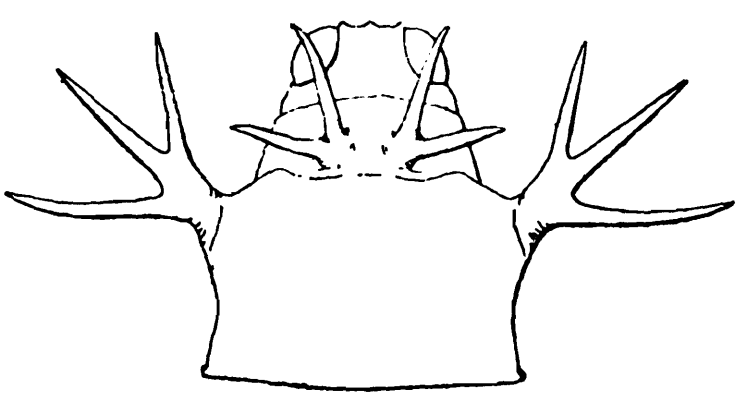


Fig. 55.—Head and prothorax of *Dactylispa perroteti*, Guér.

cleft down the middle, on either side of which the surface is convex. The antennæ are long and slender and sparsely covered with hair, the apical joints being more so than the basal ones; the first joint is the thickest and longest, the third longer than the fourth; after this the joints become gradually shorter, but the seventh is longer than either the sixth or the eighth; the last joint is not pointed. *Prothorax* almost as long as broad, coarsely punctate, with scattered hairs, and with a transverse impression near the base. In front there are two approximated pairs of spines, each pair enclosing an acute angle, the anterior being shorter than the posterior; on each side there is a group of three long spines having a common base, the anterior two standing on a common stalk, the first short and the following two equal. *Scutellum* quadrate, the base much broader than the apex, which is

rounded; from the apex up to the middle there is a circular depression. *Elytra* with scattered erect hairs, punctate-striate, the punctures being deep, round, and separate. On each elytron there are about thirty-one large and small spines, this number including a series of smaller spines disposed in a line parallel to the suture; along each margin there are about fourteen long spines, which become a little shorter at the apex.

Length, 5–5½ mm.

MADRAS: Nilgiri Hills. BORNEO. PHILIPPINES.

Type in the Paris Museum.

147. **Dactylispa krishna**, sp. nov.

Body entirely black, the elytra shining, the prothorax opaque.

Head: the collar is shining; the interocular space has a very deep longitudinal cleft in the middle, being convex on either side. The antennæ are comparatively long and sparsely covered with hairs, the five apical joints being more opaque than the six basal ones; the first joint is long and thick, the second much smaller, the third to sixth slender, the third longer than the fourth, the

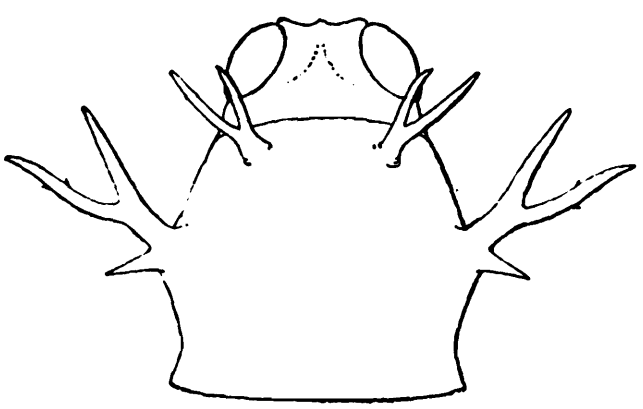


Fig. 56.—Head and prothorax of *Dactylispa krishna*, Maulik.

fourth to sixth subequal, the seventh to eleventh a little thicker, the seventh longer than each of the following joints and also than the joint preceding it, the last joint not pointed. *Prothorax* transversely depressed along the base, the disc very coarsely punctate, the punctures being large and each containing a whitish hair; in the middle there is a slightly raised impunctate area. On the front border there are two pairs of spines having a common stem and enclosing a narrow acute angle, the anterior one smaller than the posterior; the spines have a few very minute spinules each bearing a fine hair; each side has a group of three spines standing on a common stem, the third arising from the base, the first and second with a common short stem, the former being the smaller; these two spines are also setiferous. *Scutellum* broad, triangular, with the apex broadly rounded; the surface is subnitid, granulate, and with a slight depression in the

middle. *Elytra* punctate-striate, the punctures being large, quadrate, and closely approximated. The spines are long and thin and sparsely distributed, there being nine large ones on each elytron, besides three or four smaller ones near the base; on each lateral margin there are four or five large spines at a good distance from each other, followed by much smaller spines, about five or six in number, up to the sutural angle. On the surface of the elytra are found very minute spinules each having an erect hair; they are scattered and can be observed by viewing the surface sideways. *Underside* black, shining. The legs are sometimes slightly suffused with dark red-brown; on the underside of all the femora there are several minute spinules; the claw-joint projects much beyond the bilobed joint of the tarsus.

Length, 5–5½ mm.

BOMBAY: Castle Rock, N. Kanara dist., x. 1916 (*S. Kemp*). MADRAS: Nilgiri Hills (*H. L. Andrewes*); Karkurghat, 500 ft., v. 1911.

Type in the Indian Museum, Calcutta; cotypes in the British Museum and in Mr. H. E. Andrewes' collection.

Described from seven examples.

148. **Dactylispa spinipes**, *Ws.*

Dactylispa spinipes, Weise, Deut. Ent. Zeits. 1905, p. 119.

Body oblong. Entirely black, shining, with a tinge of blue.

Head with the middle of the interocular space depressed, and a slight ridge between the antennæ. The antennæ long and slender; the first joint long, thicker than the others, and slightly bent outwards; the second small and rounded, the third the longest; the first six joints with scattered hairs, the rest more pubescent. *Prothorax* almost as broad as long, uneven, raised in the centre, depressed at the sides and there covered with shallow pits, which contain a few hairs. On each side there are three spines, the first two having a common stalk, and the third small and quite separate; these spines bear a few small spinules; on the anterior border there are two pairs of spines as usual. *Scutellum* triangular, with the apex rounded, slightly depressed in the middle, and granulate. *Elytra* punctate-striate, the punctures being rounded and deep and bearing long hairs. The spines on the elytra are long and sharp, with a short scutellar row of smaller spines; the lateral margins have alternately short and long spines, between which again there are minute spines, and those on the apical margin are shorter; on each elytron there are about fourteen spines. *Underside*: the femora bear several spines beneath; the claw-joint projects slightly beyond the third joint.

Length, 5 mm.

MADRAS: Nilgiri Hills.

Type in Weise's collection; cotype in Mr. Andrewes' collection.

149. Dactylispa brevispinosa, *Chap.*

Hispa brevispinosa, Chapuis, Ann. Soc. Ent. Belg. xx, 1877, p. 56.
? *Hispa filicornis*, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 239.

Body oblong, subnitid, black.

Head: the interocular space is rough, with a deep longitudinal impression down the middle, and a row of silvery hairs round each eye. The first joint of the antennæ is thick and long, the

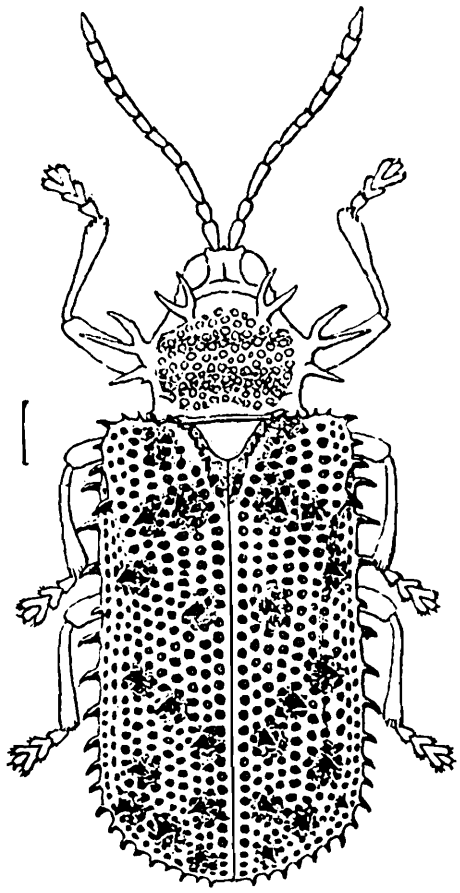


Fig. 57.—*Dactylispa brevispinosa*, Chapuis.

second small and rounded: the following joints are more slender, the third being the longest; the first five or six joints with a few scattered hairs, the rest more thickly clothed. *Prothorax* almost as broad as long, broadest in the middle, coarsely punctate, with minute hairs in the punctures, and with two shallow transverse depressions. On each side there are three spines, the first two having a common base, and the third, which is smaller, almost separated from it; on the front border there are two pairs of spines. *Scutellum* triangular, granulate. *Elytra* punctate-striate, the punctures being rather deep and quadrate. There is a scutellar row of stumpy spines; the margins have short and pointed spines, sometimes with alternate long and short ones, but all very short on the apical margin; along the suture there

are minute spines; on the disc of each elytron there are about fourteen to sixteen smaller and larger spines without any regular arrangement. *Underside* black, rough; the abdominal sternites with a depression on each side, and with scattered hairs.

Length, 4½–6 mm.

ASSAM: Khasi Hills, 1000–3000 ft., v. 1905. PUNJAB: Kangra Valley, 4500 ft., ix. 1899 (*G. C. Dudgeon*).

Type in the Brussels Museum.

150. **Dactylispa srnkæ**, *Ws.*

Dactylispa srnkæ, Weise, Deut. Ent. Zeits. 1897, p. 133.

Body very elongate, black; the elytra shining; the antennæ pitch-black. The prothorax is transversely bisulcate, closely but not strongly punctate, each puncture bearing a short hair; in the middle there is a transverse irregular line which is hairless and impunctate; each side has three spines having a common base, the hind one being the shortest. The elytra are punctate-striate, the discal spines being very long, and the marginal ones short.

Length, 4–5 mm.

BURMA: Ruby Mines.

Type in Weise's collection.

This species is related to *D. brevispinosa*, Chap., but differs from it in the following points: the three spines on each side of the prothorax stand on a common stem; the two front ones part from each other higher on the stem; a little below branches off the third one, which is considerably smaller than the corresponding spine of *brevispinosa*, appearing to be only a spinule. In the middle of the prothorax is a narrow transverse area with the surface smooth and ruled with somewhat undulating lines; this character is not present at all in numerous specimens of *brevispinosa*, or is represented by an abbreviated, indistinct, longitudinal line in the centre. The marginal spines of the elytra are hardly longer than, and the apical ones twice as long as, those of *brevispinosa*.

151. **Dactylispa peregrina**, sp. nov.

Body oblong, entirely black, subnitid.

Head with a deep longitudinal impression in the middle. The antennæ are comparatively long and are sparsely covered with whitish hairs; the first joint is long and stout, the second small and rounded, the third to sixth slender, the third being long and the next three subequal in length; the seventh to eleventh are very slightly thicker and more pubescent, the seventh being slightly longer than each of the following, except the last, to which it is equal in length, and also longer than the sixth; the eighth, ninth and tenth are equal. *Prothorax* coarsely and closely punctate, each puncture having a short hair in the centre; there is a transverse elevation in the middle, and a transverse

depression in front and behind. On the front border there are two fairly distant pairs of spines, the front one of each pair being shorter than the hind one and very slightly curved inwards; the three lateral spines have a common base, the third being shorter than the others and arising from the base; the two anterior ones, which are almost equal, stand on a common stem, the front spine being slightly incurved. *Scutellum* finely granulate, triangular, opaque, with the apical angle broadly rounded. *Elytra* punctate-striate, the punctures being round, deep, and close to each other. On the ridge on each side of the scutellum there are four or five

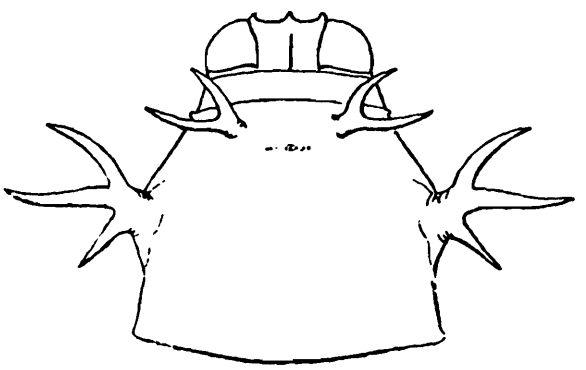


Fig. 58.—Head and prothorax of *Dactylispa peregrina*, Maulik.

small and sharp spines, three more similar spines on the front edge, then follow four larger ones on the humerus; on the disc of each elytron there are about seventeen spines, which are longer than those of *brevispinosa*; on each margin from the humeral angle to the sutural angle there are fifteen spines, those on the apical margin being much reduced in size; in between these spines there occur some very small ones. *Underside* black, shining; the abdominal segments and legs are punctate and very sparsely covered with whitish hairs. The legs are slightly tinged with dark brown; the claw-joint projects beyond the bilobed joint.

Length, 5–5½ mm.

PUNJAB: Simla Hills, 7000 ft. (*Annandale*). UNITED PROVINCES: Dehra Dun. SIKKIM: Darjiling, 7000 ft., viii. 1909 (*C. Paiva*); Lebong, 5000 ft., ix. 1908 (*H. M. Lefroy*); Kurseong, 4700–5000 ft. (*Annandale, D'Abreu*); Ghumti, 4000 ft, vii. 1911 (*F. H. Gravely*); Mungphu; Gopaldhara, Rungbong Valley (*H. Stevens*). ASSAM: The Peak, Shillong, 6400 ft., x. 1914 (*S. Kemp*). BURMA: Ruby Mines (*Doherty*); Manipur (*Doherty*).

Type and thirteen examples in the Indian Museum, Calcutta; cotypes (sixteen examples) in the British Museum.

It resembles *brevispinosa*, Chap., very closely, and might easily be mistaken for it when dealing with one example only. In the arrangement of the prothoracic spines there is no difference between the two species. The elytral spines are, however, longer, and this is the only character by which one can distinguish it from *brevispinosa*. I at first thought I would call it *brevispinosa*, but having thirty specimens before me which all show slightly

longer elytral spines, I made up my mind after a good deal of hesitation to describe it as a new species. It is one of those cases which do not naturally fall into two distinct species, yet a constant difference is perceptible An element of artificiality must, therefore, be recognised. It has a wide distribution, as will be seen from the list of localities, but is mainly confined to the hills.

152. **Dactylispa lankaja**, sp. nov.

Body oblong, entirely black, subnitid or some specimens shining; the elytra with a slight metallic sheen.

Head with a deep longitudinal sulcation in the middle, on each side of which the surface is convex with a small indentation and opaque; round each eye is a row of hairs; the collar is shining. The antennæ are comparatively long and sparsely covered with stiff hairs: the first joint is long and thick, the second much shorter, the third to sixth subequal, the seventh longer than either the preceding or succeeding joints; the eighth to eleventh are smaller, equal to each other and slightly thinner than the seventh, the last being pointed. *Prothorax* with a group of three

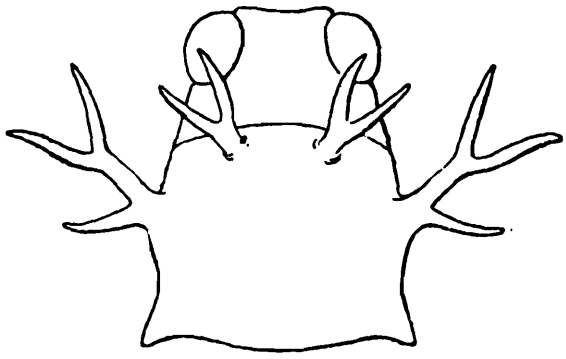


Fig. 59.—Head and prothorax of *Dactylispa lankaja*, Maulik.

spines on each side all having a common stem, the first two bifurcate high up the stem, the third branching off a little above its base; the disc is covered with long yellowish hairs, each arising from a puncture. *Scutellum* triangular, with the apex broadly rounded; the surface is subnitid and granulate. *Elytra* punctate-striate, the punctures being large, deep, quadrate and closely set. Along the front margin and the scutellar ridge there are about seven small, sharp spines, on the humerus four larger ones, and besides these on each elytron there are about twenty or twenty-one spines, five or six of which are large with broad bases, near which there are much smaller spines; from the humeral angle to the sutural angle on each margin there are fifteen spines, most of which are longer than the discal ones and fairly close to each other; near the apical margin a few are shorter. *Underside* black, sparsely covered with hairs. The legs are slender and also sparsely hairy; the claw-joint projects beyond the bilobed joint.

Length, 4½–5 mm.

CEYLON: Nuwara Eliya, 6234–8000 ft., ii. 1882 (*G. Lewis*); Dikoya, 3800–4200 ft., ii. 1882 (*G. Lewis*); Horton Plains, 6000 ft., iii. 1882 (*G. Lewis*).

Type in the British Museum.

Described from ten examples.

153. **Dactylispa trishula**, sp. nov.

Body oblong, entirely black, subnitid; the abdominal sternites red-brown. The third joint of the antennæ is almost as long as the next three put together, joints seven to eleven form a club of short lengths and are covered with brownish pubescence. On each side of the prothorax there is a group of three spines each arising singly and not from a common base. The specific name is a Sanskrit word meaning "trident."

Head entirely hairless, with a deep longitudinal sulcation in the middle; the collar is shining and smooth. In proportion to the length of the body the antenna is not very long; the first six joints are granulate and bear a very few scattered hairs; the first joint is thick and club-shaped, the second small, the third almost as long as the next three joints, the fourth longer than the fifth, which is again longer than the sixth. *Prothorax* with a transverse depression along the base, and another parallel shallower depression in front; the disc bears rather large coarse punctures, with a longitudinal impunctate area in the middle. On the front border there are two pairs of spines, each pair on a common base and enclosing a narrow acute angle, the front spine being much shorter than the posterior one; the three lateral spines are almost horizontal and arise singly and not from a common base, the middle one being larger than the other two, which are almost equal. *Scutellum* broad, triangular, with the apex rounded. *Elytra* punctate-striate, the punctures being small, round, deep, and separated. On the humerus there are three or four spines, and on the disc twelve large ones and a number of very small ones; the lateral margin of each elytron has about eighteen spines, beginning with three or four small spines, then six or seven large ones, in between which there are small spines, those on the apical margin gradually diminishing. *Underside*: the mid tibiæ are somewhat curved; the claw-joint slightly projects beyond the bilobed joint.

Length, 6 mm.

INDIA?

Type in the British Museum.

Described from one example which has on the label "E Coll. Parry."

From the facies of the insect I guess that it may be an Indian species; at least it belongs to the Indo-Chinese or Indo-Malayan region.

154. **Dactylispa feæ**, *Gestro.*

Hispa feæ, Gestro, Ann. Mus. Civ. Genova, xxvi, 1888, p. 183.

Body oblong, shining. Colour pale yellow; the head ferruginous, with the collar very shining black; the antennæ testaceous, with the base fuscous; each elytron with three oblique black fasciæ, one being humeral and the other two in the middle, and a short transverse common band about the middle; the prothorax infuscate, brown in the middle, all the spines pale with the tips dark; the scutellum ferruginous; the underside rufo-piceous, the sternum dark; the legs pale yellow.

Prothorax broad, rugosely punctate, and with a broad deep transverse furrow near the base. On the anterior margin there are two pairs of spines, each pair are joined at the base and about equal in length; the three lateral spines are on a common base and almost equal to each other in length. *Elytra* broad, very coarsely punctate, but the punctures not very close to each other. On the disc and along the lateral margin black spines alternate with white ones, the former being longer and more robust and implanted on broad raised bases, while the white ones are shorter and more slender; the spines at the basal and apical margins are not short, but like the white spines on other parts of the elytra, being brown at the apex; the black tint at the base of the black spines extends and unites at some points with that of a neighbouring spine and thus a fascia is formed.

Length, $3\frac{2}{3}$ mm.

Burma: Bhamo, vii–viii. 1886 (*L. Fea*).

Type in the Genoa Museum.

155. **Dactylispa harsha**, sp. nov.

Body oblong, subnitid. Colour red; the discal spines of the elytra, two hook-like marks and the anterior cylindrical part on the prothorax, the sides of the meso- and metasterna, black; on the sternum the black tint extends to a certain extent towards the middle; the margin of the elytra narrowly explanate and yellow.

Head broad, plane, without any sulcation. The antennæ are long and sparsely hairy; the first joint is as usual long and thick, the second small and rounded, the third and fourth almost equal, fifth a little shorter, sixth to the last more thickened. *Prothorax* coarsely punctate, transversely depressed and with three impunctate areas, a longitudinal one in the middle and on each side of it a small round one, which is partly surrounded by a black ring. On the front border there are two pairs of spines; each pair forms an acute angle and has a laterally flattened base; the spines are almost equal and the anterior one has a minute spinule on its front border. Each side has a group of three spines arising singly from a broad flattened base; they point almost horizontally

outwards, the anterior two being flattened, broad at base and rather longer than the third, which is not flattened; all the spines are lighter in colour and more or less transparent. *Scutellum* granulate, quadrate, broader than long, with the apex broadly rounded. *Elytra* punctate-striate, the punctures being round, deep and close to each other; the interstices are raised. There are three spines on the humerus, one of which is large and curved; besides these on the disc of each elytron there are eleven conical spines with the tips slightly curved backwards, those on the apical area being longer; on the last interstice but one there are several very minute spinules. The lateral margin of each elytron is narrowly explanate with nine flattened larger spines, of which two at the humeral angle and two at the external apical angle are

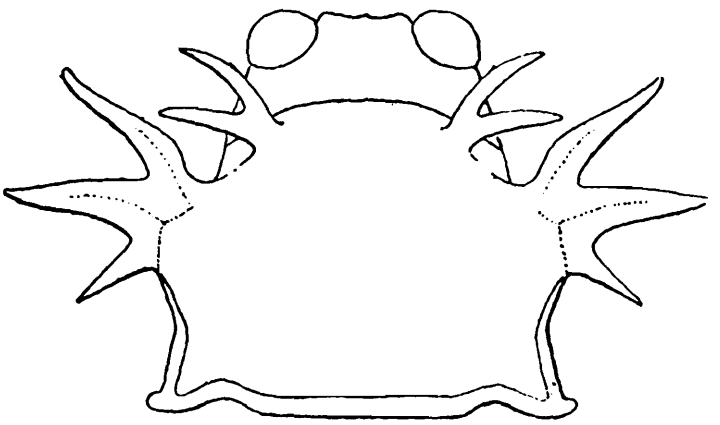


Fig. 60.—Head and prothorax of *Dactylispa harsha* Maulik.

blackish, the middle portion together with spines being yellow; the larger spines alternate with smaller ones; the apical margin has six very small spines of gradually diminishing size. *Underside*: the claw-joint extends beyond the bilobed joint of the tarsus.

Length, 6¼ mm.

United Provinces: W. Almora, Kumaon (*H. G. Champion*). Assam: Cherrapunji, 4400 ft., x. 1914 (*S. W Kemp*, Ind. Mus.).

Type in the Indian Museum.

Described from two examples.

In the Almora specimen the colour is darker, and there is an ill-defined black stripe along the side in continuation of the black stain on the margin below the humerus and at the external apical angle.

156. **Dactylispa prasastha**, sp. nov.

Body oblong, broad. The head (partly), the antennæ, part of the narrow explanate margin of the elytra, the legs, the abdominal segments, and the middle portion of the metasternum rich brown, sometimes red-brown; the rest of the insect black; the upper surface generally opaque, the elytra subnitid.

Head broad, rough and sparsely hairy; on the vertex there is a deep more or less rounded indentation. The antennæ are comparatively long, brown, the ultimate joint may be blackish; they are hairy, the four or five basal joints being less so than the rest; the first joint is large and thick, the second small and rounded, the third to sixth slender and subequal, the seventh longer than either the preceding or following joints, the seventh to tenth slightly thicker and more hairy, the last joint pointed. *Prothorax* broader than long, roughly punctate, each puncture containing a long silvery hair; as in *D. platyacantha*, there are three longitudinal raised areas, the centre one having an impressed longitudinal line in the middle. There are two pairs of spines on the front border, each pair enclosing a narrow acute angle, the anterior one being slightly curved and shorter than the posterior one; the front edge of the anterior spine has one or two minute spinules. Each side has a group of three spines arising singly from a broad common base and more or less equal, but the middle one may be a little longer than the others; they point almost

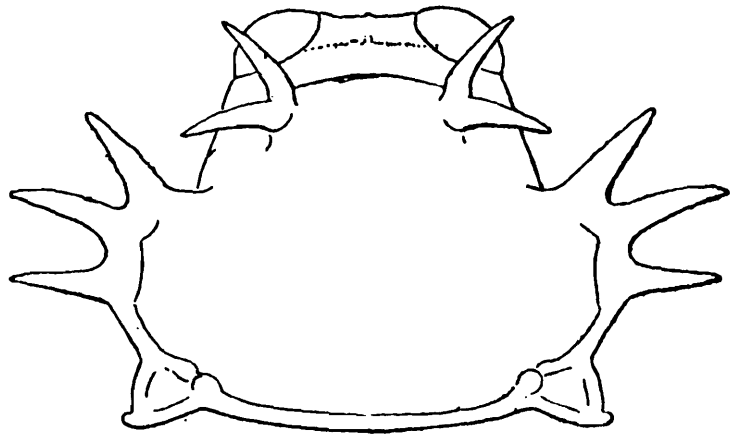


Fig. 61.—Head and prothorax of *Dactylispa prasastha*, Maulik.

horizontally outwards, being dark brown with the extremities black. *Scutellum* broad, triangular, with the apex broadly rounded; the surface is granulate, black, with a round reddish patch in the middle. *Elytra* punctate-striate, the punctures being deep, round and crowded together. In one specimen (from Maymyo) of the two before me there are two roundish brown spots on the elytra, one on each side of the suture a little distance behind the scutellum. There are four spines on the humerus, besides which there are on each elytron fifteen or sixteen large and small spines; four on the apical area and two in the middle are large with broad bases, the rest of the spines being small. On each margin from the humeral angle to the external apical angle there are eight or nine flattened spines; after the fourth spine from the humeral angle there is an interval which in one example has a small spine, while in the other it is absent; this arrangement of spines recalls that of *Platypria*. On the apical margin in one specimen there are no spines (type), in the

other there are seven or eight flattened teeth of gradually diminishing dimensions (cotype). *Underside*: the claw-joint hardly projecting beyond the bilobed joint.

Length, 7 mm.; breadth, 4½ mm.

BURMA: Karen Hills (*W. Doherty*, type); Maymyo, v. 1910 (*H. L. Andrewes*).

Type in the British Museum; cotype in Mr. H. E. Andrewes' collection.

Described from two examples.

157. Dactylispa platyacantha, *Gestro*.

Hispa platyacantha, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 126.

Body broad, black, almost opaque; the head in the middle and the antennæ ferruginous, the latter with the first two joints slightly darker; the prothorax also slightly ferruginous in the middle and at the base of the lateral spines; the elytra with the posterior two-thirds of the lateral margin ferruginous, and with some indefinite ferruginous markings on the disc; the underside and legs yellow-ferruginous, with the exception of the sternum which is black.

Head very finely rugose in the middle. The antennæ are a little less than half the body, the five apical joints being slightly thickened and more hairy than the six basal joints; the first is thicker but shorter than the third, the second very small, the third slender and the longest, the fourth to sixth subequal, the seventh longer but thicker, and the succeeding joints shorter than the seventh. *Prothorax* broader than long, thickly punctate, with three longitudinal impunctate areas. The spines of the two pairs on the anterior margin are stout, wide and laterally compressed at the base, each pair united for a good distance and enclosing a very acute angle; the three lateral spines are short, stout and horizontal, being joined together at the dilated base (or it may be said that they arise singly from the edge of a dilated base), the middle one being slightly longer than the others. *Scutellum* triangular, with the apex obtuse; granulate, black, opaque and with a round ferruginous spot. *Elytra* broad, the sides at the base slightly dilated, the expansion recalling that of the genus *Platypria*, giving the appearance of a slight constriction in the middle. The expansion supports four short broad spines which are almost triangular and flattened, alternating with very minute spinules, there being a few similar distant spines along the lateral margin; on the apical margin, instead of spines, there are very small teeth; the discal spines are replaced by large conical tubercles.

Length, 5¾ mm.

BURMA: Ruby Mines, 4000–4300 ft. (*W. Doherty*).

Type in M. Oberthür's collection; cotype in the Genoa Museum.

I have before me four examples from the Ruby Mines collected by Doherty. They show a certain amount of variation:—the first two joints of the antennæ may not be darker; the three longitudinal impunctate areas on the prothorax in some specimens are not very prominent; of the lateral spines of the prothorax, the middle one in some specimens is appreciably longer, in others the three spines are almost equal in length.

158. **Dactylispa xanthopus**, *Gestro*.

Hispa xanthopus, Gestro, Termés. Füzetek, 1898, p. 262.
Dactylispa xanthopus, Gestro, Ann. Mus. Hung. 1907, p. 72; Maulik, Ann. Mag. N. H. (9) i, 1918, p. 70.

Body oblong; the upper side, especially the elytra, black, shining; the mouth-parts, abdomen and legs yellow; the third to sixth joints of the antennæ ferruginous.

Head: the length of the antennæ is about two-thirds of that of the body; the first joint is stout and almost as long as the second and the third together; the seventh to eleventh joints are somewhat larger than the others. *Prothorax* broader than long, the sides being parallel behind the insertion of the lateral spines; the upper surface is almost flat and traversed transversely by two impressions, one anterior and the other ante-basal, the latter being deeper and wider; the disc is punctate, except along a longitudinal median line, and clothed with rather long and whitish hairs. The two pairs of anterior spines are inserted at a considerable distance from each other, each pair having a short stout common base, and directed obliquely forwards and slightly outwards, the anterior one being a little longer than the posterior; the three lateral spines are all implanted on a short broad common base, and almost horizontal; the two anterior ones are almost equal to each other in length, being about as long as half the disc at its greatest breadth, and present a slight double curvature; the posterior one is slightly shorter and turned obliquely backward. *Scutellum* broad and triangular, rounded at the apex and coriaceous. *Elytra* much broader at the base than the prothorax, coriaceous, punctate-striate, the punctures being large, deep and crowded together and separated from the transverse folds; some of the interstices between the rows in the apical region are raised. The spines which surround the humeral margin are short, stout and almost horizontal; the discal spines and especially those near the apex have a very thick and conical base; the marginal spines are a little longer than the discal ones, slightly flattened and alternating with other spines which are very short and more slender; the apicals are very minute.

Length, $3\frac{3}{4}$ mm.

SIKKIM: Darjiling.

Type in the Budapest Museum.

159. Dactylispa sadonensis, sp. nov.

Body oblong, black; the mouth-parts, abdomen and legs yellow-brown.

Head with a row of silvery hairs round each eye. The specimen before me is without antennæ. *Prothorax* slightly narrowed anteriorly, the sides divergent behind the spines. The spines of each pair on the front border enclose a narrow acute angle and are almost equal to each other in length, having a common base and pointing more or less vertically; the three lateral spines are almost horizontal and arise singly from a broad common base, the middle one being very slightly longer than the other two. The disc is coarsely and roughly punctate, with a few hairs, and a fine longitudinal line down the middle. *Scutellum* granulate, broad, triangular, with the apex broadly rounded.

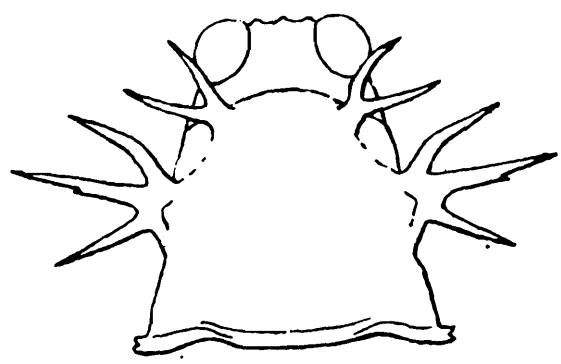


Fig. 62.—Head and prothorax of *Dactylispa sadonensis*, Maulik.

Elytra more shining than the head, prothorax and scutellum, punctate-striate, the punctures being large, quadrate and close to each other. On the scutellar ridge there are four spines, on the humerus four larger spines; besides these there are on each elytron eight large spines and other smaller spines; on each lateral margin there are nine large spines, those on the apical margin being much smaller. *Underside*: the legs are slender; the claw-joint projects well beyond the bilobed joint.

Length, 5 mm.

BURMA: Sadon, 2500–3500 ft., Myitkyina district, v. 1911 (*E. Colenso*).

Type in the Indian Museum.

Described from one example.

In the shape and coloration of the body it is very similar to *D. xanthopus*, Gestro, but differs as follows:—the head bears a central depression; the two pairs of spines on the front border of the prothorax are much closer together; and the marginal spines on the elytra are more numerous and not flattened at the base.

160. Dactylispa bindusara, sp. nov.

Body oblong, broad, subnitid. The ground-colour brown, sometimes red-brown; the upper side of the head, a large patch on the

prothorax, the elytral spines, the two basal joints of the antennæ, the sternum, and the underside of the head, black or brownish black; the rest of the antennæ yellow-brown; the abdominal segments and the legs yellow.

Head with the interocular space rough and without any median sulcation. As compared with the length of the body the antennæ are fairly long; the five apical joints are more hairy and thicker than the basal joints, except the first joint, which is large, thick and club-shaped; the second is small and rounded, the third to sixth slender and subequal, the remaining joints being more or less subequal to each other. *Prothorax* broader than long, the disc compressed, with a slight transverse elevation in the middle, roughly punctate and hairy; there is an indistinct longitudinal stria in the middle. On the front border there are two pairs of spines, each pair having a common base and enclosing an open acute angle, the posterior spine, which is slightly longer than the front one, almost vertical and the front one slightly curved; the three lateral spines arise singly from a common broad base and point obliquely outwards, the middle one being slightly longer than the other two. All the spines are brown with black tips. *Scutellum* triangular, with the apex rounded; the surface is granulate, the edges blackish, the centre being red-brown. *Elytra* more shining than the prothorax, punctate-striate, the punctures being large, quadrate and close to each other. On the ridge on each side of the scutellum there are four or five stumpy spines, on the humerus four to six large spines; besides these there are about seven large spines on each elytron, and also a number of small tubercles; each lateral margin has nine or ten more or less flattened spines; the apical margin is without spines, but bears very minute spinules. The claw-joint projects beyond the bilobed joint.

Length, 4½ mm.

UNITED PROVINCES: W Almora, Kumaon (*H. G. Champion*). SIKKIM: Phubsering, Lebong, 5000 ft., x. 1910 (*Partridge*), vi. 1909 (*H. M. Lefroy*—Pusa coll.). ASSAM: Khasi Hills, vii. 1907 (*D. Naoroji*—Pusa coll.).

Type in the British Museum; cotypes in the Indian Museum and the Pusa collection.

Described from six specimens.

The specimens from Assam are more red than brown; only the first joint of the antennæ is darker.

161. **Dactylispa divarna**, sp. nov.

Body oblong, broad. The elytra and upper side of the prothorax brownish black, the lateral and apical margins slightly more brown than black; the underside, legs, head, antennæ, the margins of the prothorax, together with the spines, yellow-brown; the two basal joints of the antennæ darker; the sternum may be slightly darker; the tips of the thoracic spines blackish, all the elytral spines except the apical ones pitch-black.

Head with a longitudinal impression in the middle. The antennæ are comparatively long and sparsely covered with hair; the first joint is long and thickened at the apex, the second small and rounded, the third longer than the fourth, the fourth to sixth almost equal, the seventh may be slightly longer, the eighth to eleventh each shorter than the seventh and equal. *Prothorax* broader than long, roughly punctate, with a narrow longitudinal slightly raised area in the middle, which is brownish. On the front border there are two pairs of spines, each pair enclosing a narrow acute angle and the posterior spine being longer than the anterior one; each side has a group of three rather long spines arising singly from a broad base, the anterior two being equal and the hind one a little shorter. *Scutellum* brown, broad, triangular, with the apex broadly rounded; the surface granulate. *Elytra* punctate-striate, the punctures being deep and close, and the interstices raised. On each side of the scutellum the ridge has five short spines, and there are four spines of varying length on the humerus; besides these there are on each elytron ten large spines and four minute spines, generally situated on the apical area; each margin from the humeral angle to the apical external angle has nine large spines, which alternate with much smaller ones; on the apical margin there are five small spines of gradually diminishing size. *Underside*: the claw-joint projects a little beyond the bilobed joint, the claws dark brown.

Length, 5½ mm.

BURMA: Karen Hills (*Doherty*).

Type in the British Museum.

Described from one example.

162. Dactylispa jiva, sp. nov.

Body oblong; yellow-brown; the eyes, the discal and a few of the marginal spines of the elytra and the sides of the sternum black; six basal joints of the antennæ brownish black.

Head slightly depressed in the middle; the collar is brownish black, smooth and impunctate. The antennæ are slender, very finely pubescent, with the five apical joints slightly thicker, lighter and more pubescent; the first joint is thick and slightly curved outwards, the second small and more or less rounded, the third very long, the fourth, fifth and sixth almost equal, the seventh slightly thicker and shorter, the eighth to last equal. *Prothorax* almost as broad as long. On the front border there are two pairs of spines very close to each other, each pair enclosing an open acute angle, the anterior spine being smaller than the posterior one, which bears one or two spinules; each side has a group of three spines arising from a common base, the anterior two being stalked, the middle one with one or two spinules, the third spine as long as the middle one, if not longer, the front one being a little shorter than either; all the spines are long and sharply pointed. The upper surface is roughly punctate, slightly hairy,

with a darker brown broad ring, and with a shallow transverse depression at the base. *Scutellum* broadly triangular, with the apex rounded, and the surface granulate, having a circular cavity in the middle. *Elytra* punctate-striate, the punctures being large and quadrate, each with an erect whitish hair at the centre. On the disc of each elytron there are thirteen or fourteen large black spines and eight to ten smaller ones, which are generally black, one or two being yellow; the black colour spreads round the base of each spine, and below the humeral ridge it extends to the margin. Each lateral margin has about eight long spines, of which the basal three and apical two are black; these alternate with much thinner and yellow spines, as well as much smaller ones; the apicals are yellow and much shorter; all the yellow spines have black tips. *Underside*: the tarsi are narrower at the base than at the apex, the claw-joint projecting beyond the bilobed joint.

BURMA: Tavoy (*Doherty*).

Type in the British Museum.

Described from one example.

Judging from allied species, it is probable that the dark brown ring-like patch on the pronotum may be quite black, and also the extent of the black colour at the bases of the spines may vary.

163. Dactylispa corpulenta, *Ws.*

Dactylispa corpulenta, Weise, Deut. Ent. Zeits. 1897, p. 132, and 1905, p. 120.

Body oblong, more or less stout. Colour brownish yellow; the antennæ testaceous, the first two joints darker; almost all the large dorsal spines on the elytra are black, the small ones and the marginal ones (except three) yellow; these three spines are situated at the external angles of the elytra where they bend towards the suture and are black; the elytra with several disconnected discal black patches and a large patch at each external angle.

Head more or less smooth, with a deep longitudinal impression in the middle. The third joint of the antennæ is somewhat shorter than the first and longer than the fourth, the following joints gradually becoming shorter. *Prothorax* almost as broad as long, the anterior border cylindrical; each side has a group of three spines having a common base, the hind one arising from the base and longer than the other two, which stand on a short stalk and are equal in length; on the front border there are two pairs of spines. The disc is transverse and rough, there being three smooth prominences in the middle. *Scutellum* triangular and granulate. *Elytra* punctate-striate, the punctures being large, quadrate and close to each other. Each elytron has several black patches which are formed by the extension of the blackness round the base of the black spines.

Length, 4 mm.

BOMBAY: N. Kanara (*T. R. D. Bell*). MADRAS: Quilon, Travancore, v. 1915 (*G. P. Pillai*--Ind. Mus.).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

164. Dactylispa haeckeli, *Gestro.*

Dactylispa haeckeli, Gestro, Bull. Soc. Ent. Ital. 1902, p. 56.

Body oblong, shining. The head and prothorax black, the posterior border of the latter ferruginous; the first two joints of the antennæ are black, the rest ferruginous; the elytra are flavo-testaceous, the suture, the lateral margin and spines, a basal elevated area and the discal spines, black; the black at the base of the humeral spines extends to the margin, and the small spines by the scutellum are yellowish; the underside black and shining; the legs pale yellow, the articulations between the tibiæ and femora, and the tarsi light ferruginous.

Head slightly striated between the eyes, the rest smooth. The antennæ are longer than half the body, the five apical joints being slightly thicker; the first joint is longer than the second and third together, the second very short, the third almost double the length of the second. *Prothorax* broader than long; behind the front pair of spines runs a transverse furrow, and another larger one parallel to the basal margin; the upper surface is punctate, the punctures being large, and is covered with fine white hairs. The two pairs of spines at the front margin are rather near to one another, the posterior one of each pair being slightly longer than the other and almost vertical, and the front one turned obliquely forward, so that it forms with its companion a very open angle. Each side has three spines arising from the same stem, which is strongly directed forwards, so that the internal spine of one side is parallel to that of the opposite side; after a short distance, which does not surpass the level of the front margin of the prothorax, the stem bifurcates, forming the two front spines, whilst the third originates from the base of the same in an outward and somewhat upward direction; of the two front spines the outer one is longer than the other, the third being rather long. *Scutellum* black, shining, hollow in the middle. *Elytra* shining, covered with fine white hairs, punctate-striate, the punctures being large. The marginal spines are long, the apicals being a little shorter, especially the sutural one.

Length, 3 mm.

CEYLON: Nalanda (*Dr. W Horn*).

Type (single specimen) in the Deutsche Entomologische National Museum.

165. Dactylispa lohita, sp. nov.

Body oblong, subnitid. The general colour red; the antennæ, the discal and alternate marginal spines of the elytra, and the underside black.

Head with a deep longitudinal sulcation in the middle, and a row of hairs round each eye; the collar is partly black and shining. The antennæ are comparatively long, sparsely covered with hair, the five basal joints more shining than the six apical ones, which are slightly thicker; the first joint is long and thick, the second small and rounded, the third longer than the fourth, the third to sixth subequal in length, the seventh slightly longer than either the sixth or the eighth, the eighth to eleventh almost equal, the last joint pointed. *Prothorax* roughly punctate, each puncture having an erect hair, and with a transverse depression at the base. In one specimen before me on the red background there are two very faint roundish black patches, one on each side of the longitudinal middle line. On the front border there are two pairs of spines, each pair enclosing an acute angle; the three lateral spines arise singly from a broad base, all pointing obliquely forwards and almost equal in length; all the spines are long,

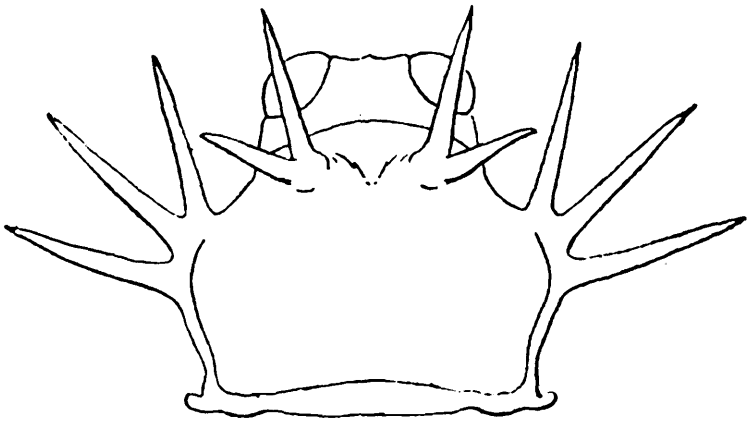


Fig. 63.—Head and prothorax of *Dactylispa lohita*, Maulik.

pointed and red, with the tips black. *Scutellum* small, quadrate, with the apex broadly rounded; the surface is granulate, with a round depression near the apex. *Elytra* punctate-striate, thinly covered with fine erect hairs, the punctures round, deep and close to each other, the interstices raised. The marginal spines are longer than the discal ones; on the front margin there are five small spines, on the humerus five more; besides these there are on the disc of each elytron ten black spines; the margin from the humeral angle to the sutural angle has nineteen spines, alternately long and short, the longer ones being black, the shorter brown with black tips; the alternation is not quite regular; on the apical margin the spines become gradually shorter. *Underside* black, the metasternum shining; the abdominal segments are subnitid, finely punctate, thinly covered with erect hairs and edged with red-brown. The claw-joint hardly projects beyond the bilobed joint.

Length, $5\frac{1}{4}$ mm.

United Provinces: W. Almora, Kumaon, v. 1917 (*H. G.*

Champion). ASSAM: The Peak, Shillong, 5000–6400 ft., x. 1914, viii–ix. 1915 (*S. W Kemp*—Ind. Mus.); Manipur (*Doherty*).

Type in the Indian Museum; cotype in the British Museum.

Described from two examples.

The Almora specimens are paler.

166. Dactylispa filiola, *Ws.*

Dactylispa filiola, Weise, Deut. Ent. Zeits. 1897, p. 135, and 1905, p. 20.

Body oblong. Colour testaceous; the antennæ and sternum black; the prothorax opaque and black, the anterior spines reddish testaceous tipped with black, the lateral ones black; the elytra with all the spines black, that colour extending for some distance around their bases; the abdomen yellowish brown, the legs yellowish.

Head with a deep longitudinal cleft in the middle, and a row of silvery hairs round each eye. The antennæ are lightly covered with stiff hairs; the first joint is the longest and thickest and a little curved outwards, the second small and round, the third to sixth more slender and gradually becoming shorter, the seventh to eleventh thicker and more rounded. *Prothorax* with two pairs of spines in front; of the three lateral spines, that arising from the base is as long as the middle one and a little curved, the middle and anterior ones on a common stalk, the latter being the smaller. The disc is transverse, rugosely punctate and hairy, with a transverse depression in front of the base. *Scutellum* with a circular cavity in the centre which gives it a rounded shape, but at base it is broadened. *Elytra* shining and with scattered erect hairs, punctate-striate, the punctures being rounded. On each elytron there are about twenty-six long and short spines, the marginal ones very long, those at the apex shorter.

Length, 3–3¼ mm.

BOMBAY: Bassein, x. 1909. MADRAS: Tavjori, Manganalbur, i–ii. 1914; Kasergode, S. Kanara dist., x. 1918; Quilon, Travancore, v. 1915 (*G. P. Pillai*—Ind. Mus.); Nilgiri Hills; Chalakudi, Cochin State, xi. 1914. CEYLON: Kandy, vii. 1908 (*G. E. Bryant*); Peradeniya, vi. 1910 (*F. H. Gravely*—Ind. Mus.).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

Normally the colour of the spines on the anterior border of the prothorax is yellow-brown with the apical portion black, but they may be entirely black. The black colour of the base of the spines may spread considerably on the elytra. In some of the Ceylon specimens the body is almost black. The antennæ are usually black, which is more or less diluted with brown on the joints; in some of the Ceylon and Nilgiri specimens the three or four apical joints may be brown.

167. Dactylispa xanthospila, *Gestro.*

Hispa xanthospila, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 261; Weise, Deut. Ent. Zeits. 1897, p. 131.

Body oblong, shining. Black; the five apical joints of the antennæ brown; the apex and margins of the prothorax, and variable patches on the elytra, fulvous; the underside nigro-piceous, the abdomen paler, the legs pale fulvous.

Head with the interocular space rough. *Prothorax* almost as long as broad, roughly punctate and scattered with fine hairs, and with a shallow transverse depression at the base. On the cylindrical anterior margin there are two pairs of spines; on each side there is a group of three spines having a common base, the hind one arising from the base and long, the other two standing on a short stalk, the front one being shorter than the second. The colour of the thoracic spines varies, being either black or yellow. *Scutellum* triangular, with the apex rounded, and bearing a circular depression. *Elytra* strongly punctate-striate, the punctures being round, small and separated. On each elytron there are about twenty-six spines, the longer and robust spines being generally black, the others yellow with the tips black; the marginal spines are black and alternate with thin and short spines, those on the apical margins being shorter. *Underside*: in some specimens the tarsi are blackish.

Length, 4 mm.

Burma: Prome; Karen Hills (*L. Fea*). Indo-China: Tonkin. Sumatra.

Type in the Genoa Museum.

Gestro has already remarked that the distribution of the black and yellow-brown in this species is variable. I have before me five examples from Burma and another from the Patkai Hills, Assam. At first they would appear to be different species owing to their more brown colour, but on closer examination and from the analogy of allied species like *D. filiola*, Ws., it may be inferred that they are merely colour varieties.

Variety A. Yellow-brown; the head, eyes, six basal joints of the antennæ, the pronotum and underside pitch-black; the legs pale yellow; the discal and alternate longer marginal spines of the elytra black. The black colour of the base of the discal spines does not spread much.

Burma: Tavoy (*Doherty*).

Five examples in the British Museum.

Variety B. Yellow-brown; the black colour is much diluted in this example. The underside is pitch-black, the legs pale yellow. The whole of the antennæ except the basal joints is yellow-brown.

The head, the pronotum and the discal and alternate longer marginal spines of the elytra much diluted with brown.

ASSAM: Patkai Hills (*Doherty*).

One example in the British Museum.

In another specimen from Burma there is more black on the insect.

168. Dactylispa severini, *Gestro*.

Hispa severini, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 129.

Dactylispa andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 129, and 1905, p. 119.

? *Hispa longicornis*, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 240; Weise, *op. cit.* 1897, p. 131.

Body oblong, elongate. Colour yellowish brown, with the long dorsal spines of the elytra and one or two marginal ones at the external apical angle black; the punctate area on the prothorax is black.

Head with a longitudinal cleft in the middle, in continuation of which there is a small projection between the antennæ, which is clearly seen when viewed dorsally. The antennæ are long, slender, and sparsely covered with hairs; the first joint is the longest and thickest, the second small and rounded, the third longer than each of the following joints, the fourth to eighth subequal, the ninth and tenth are equal to each other in length, the last a little longer than the two preceding joints; the six apical joints are more hairy than the rest. *Prothorax* almost as broad as long. In front there are two pairs of spines, the posterior one of each pair being vertical and the anterior one shorter, the angle between them being acute; on each side there are two large spines with a common base, the anterior one being a little shorter and the angle enclosed acute; posterior to them there is a much smaller separate spine. The disc is depressed along the base, at the sides, and in the middle, leaving a slightly raised horseshoe-shaped area which is microscopically granular and bears a short longitudinal stria in the middle; some of the depressed area has strong black punctures. *Scutellum* granulate, triangular, with the apex broadly rounded; the base and apex are black. *Elytra* punctate-striate, the punctures being large, quadrate, contiguous, and with a dark ring round the top. On the disc of each elytron there are about seventeen spines, most of them large, and only a few small ones at the base; the former black and curved, the latter yellowish brown; the margin has about eighteen spines, large and small ones generally alternating near the base, with much smaller ones between them; on the apical margin the spines are smaller.

Length, 7 mm.; breadth, 3½ mm.

BOMBAY: Belgaum (*H. E. Andrewes*). MADRAS: Parambikulam, Cochin State, ix. 1914 (*F. H. Gravely*—Ind. Mus.). SIAM.

Type in the Genoa Museum; type of *andrewesi* in Weise's collection; cotype of *andrewesi* in Mr. H. E. Andrewes' collection.

169. **Dactylispa nandana**, sp. nov.

Body oblong. Colour ferruginous; two patches on the prothorax, the bases of the discal spines of the elytra, the sternum, and the coxæ, black; the pronotum opaque, the elytra shining.

Head with the interocular space prominent, elevated above the level of the eyes, and with a longitudinal median sulcation; the interantennal ridge is prominent, and the bases of the antennæ are in depressions. The antennæ are long and ferruginous; the first joint is long and curved outwardly, the second very short, the third more slender but very long and almost equal to the next three joints together, the fourth, fifth, and sixth subequal, the seventh to eleventh slightly stouter, and more hairy, the eighth to tenth almost equal in length, the seventh and eleventh each longer, the latter bluntly pointed. *Prothorax* with a slight transverse depression at the base, coarsely punctate, and slightly elevated in the middle, this elevation being minutely granulate and with a short longitudinal impression, on each side of which there is an ill-defined blackish patch; each puncture has a silvery hair. On the front border there are two pairs of spines, each pair on a common stem, the front spine being smaller than the posterior one. Each side has a group of three spines having a common base, of which the two anterior ones are long and have a common short stem, the front one being slightly shorter; the third spine is very short and arises from the base. *Scutellum* triangular, with the apex broadly rounded, blackish, and granulate. *Elytra* punctate-striate, the punctures being deep, quadrate, and close to each other, the interstices prominent. On each elytron there are two rows of long spines, five in each row, so arranged that a spine of one row stands between two spines of the next; all these spines are long and black at the base and a little distance up the spine. Each lateral margin commences with three or four very short spines; then they become extremely long, alternating with slightly shorter ones, then they gradually diminish in length; in between these longer and shorter spines there are minute ones; the apical spines are very small. *Underside*: the legs are slender and ferruginous; the claw-joint projects slightly beyond the bilobed joint. The abdominal segments are very sparsely hairy and ferruginous.

Length, 5 mm.

ASSAM: Manipur (*Doherty*).

Type in the British Museum.

Described from one example.

170. **Dactylispa dohertyi**, *Gestro*.

Hispa dohertyi, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 133.

Body oblong, shining. Colour ferruginous; the prothorax

sometimes blackish at the base; the interstices on the elytra closest to the suture subelevated and pale yellow; the discal, humeral, and posterior marginal spines on the elytra black, the anterior marginal and the apical yellow; from the underside of the humeral projection a more or less well-marked black band runs obliquely backwards and stops towards the centre; the underside is darker than the upper side, the sternum black, the legs pale yellow.

Head: interocular space with a deep longitudinal impression; the collar is constricted just behind the eyes. The antennæ are ferruginous, sparsely hairy, the five apical joints, which are slightly thicker, more so; the basal joint is thick, slightly bent outwards, the second much smaller and rounded, the third the longest, the fourth to sixth subequal in length. *Prothorax* broader than long, the disc almost flat, punctate, and with two transverse impressions, the space between them being nearly smooth. There are two pairs of spines on the anterior margin, each pair consisting of two spines partly fused together at the base, of which the anterior one is the shorter; of the three lateral spines the two anterior ones are longer and joined together at the base, the posterior one being free. *Scutellum* broad, rounded at the apex, and impressed in the centre. *Elytra* punctate-striate, with the interstices closest to the suture elevated and pale yellow, particularly the second, which is also thickened between two spines of the basal area, this is characteristic; here the surface is a little depressed.

Length, 4½ mm.

BURMA: Ruby Mines, 4000–4600 ft. (*W Doherty*).

Type in M. Oberthür's collection.

171. Dactylispa mendica, *Ws.*

Dactylispa mendica, Weise, Deut. Ent. Zeits. 1897, p. 131.

Body oblong. Colour yellow-brown; a few of the dorsal spines of the elytra black.

Head smooth, the median longitudinal line obsolete. The antennæ are long and slender; the first joint is long and thick, the second small and rounded, the third just a little longer than the second; from the fourth to the eleventh the joints are more covered with whitish hairs, and each joint is shorter than the preceding one, the last joint being long and pointed. *Prothorax* almost as long as broad; the anterior border bears two pairs of spines, the front one of each being a little shorter than the other; of the three lateral spines the anterior two are large, appendiculate, and have a common base with the the tips black, the third one being small, free, and appendiculate. The disc is depressed almost all round, there being two distinct smooth elevations in the middle; in the depressions there are a few large punctures. *Scutellum* granulate, triangular, with the apex rounded. *Elytra* punctate-striate, the

punctures being large, quadrate, and approximated. On each elytron there are four costæ and about sixteen large and small spines, almost all the large spines being brown with the base dark brown, and the small ones yellowish brown. The margin has twenty-two or twenty-three spines, large ones alternating with very small ones, and the large gradually diminishing in length from the base to the apex of the elytra; two spines at the base and three at the outer apical angle of the elytron are black. *Underside* pale yellow, smooth, and slightly covered with hairs.

Length, 5½ mm.

BURMA: Paungde (*G. C. Corbett*).

Type in the British Museum.

172. **Dactylispa longula**, sp. nov.

Body narrow, elongate, yellow-brown; the scutellum, two patches on the pronotum, and the discal spines on the elytra black.

Head convex, with a deep longitudinal impression in the middle; the collar is slightly constricted, smooth and shining. The antennæ compared with the length of the insect are short; the first joint is the longest and thickest, the second small and more or less rounded, the third to the sixth slender and of gradually diminishing lengths, the seventh to the last slightly thicker and more hairy. *Prothorax* almost as long as broad. On the front border there are two pairs of spines close together, the anterior spine of each pair being smaller and curved, and the posterior longer and vertical, with its apex slightly blackish; near the apex of the anterior spine in front there may be a very minute spinule. Each side has a group of three spines, the anterior two being stalked and the posterior one, which is smaller, free; of the anterior spines, the front one is smaller and the second may have a very minute spinule near its apex on the posterior side; these spines point upwards and outwards, and all the prothoracic spines are slender. The disc has a raised transverse smooth area in the middle, the sides of which are blackish; all round it the surface is coarsely punctate. *Scutellum* pitch-black, rugose, triangular, elongate, with the apex rounded. *Elytra* each with about nine rows of punctures, which are large, quadrate, and placed very close together, each puncture bearing an erect whitish hair. The discal spines are short and slender, and there are only about thirteen on each elytron; along the front edge and the scutellar ridge there are five or six minute spines; the lateral margin from the humeral to the sutural angle bears about twenty yellow, slender spines, which are of gradually diminishing lengths till that at the sutural angle has become very minute; all these yellow

spines have the extreme apex blackish, and two or three at the external apical angle are mostly black. *Underside* entirely yellow-brown and sparsely hairy.

Length, 5 mm.

BURMA: Momeit (*Doherty*).

Described from one example.

Type in the British Museum.

173. **Dactylispa paronæ**, *Gestro.*

Hispa paronæ, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 260.

Body oblong. Light testaceo-ferruginous, subnitid; the sternum fusco-testaceous, the abdomen and legs pale yellow; the pronotum with two median dark patches, generally faint, but sometimes well marked, and the tips of all the spines blackish.

Head and antennæ darker, the latter exceeding half the body in length. *Prothorax* broader than long, with two depressions, the basal one being larger, almost shagreened, with the pubescence barely visible and with a longitudinal median line that is slightly elevated and smooth. On the anterior margin there are two pairs of spines fairly widely separated from one another, each pair united at the base, the posterior one, which is almost half as long again as the anterior, being directed obliquely upwards and backwards. Each side has a group of three spines joined together at the base into one short, depressed common stem, the middle one being the longest and the hind one the shortest. *Elytra* strongly punctate-striate, with a slight dark triangular depression behind the scutellum. The spines on the disc are long, not very thick at the base, and more or less dark according to the specimen; the marginal spines are very slightly longer than the discal ones, and alternate with very short ones; these are also testaceous, with the apex of a darker tint.

Length, 5–5$\frac{2}{5}$ mm.

BURMA: Karen Hills, 3000–3700 ft. (*L. Fea*).

Type in the Genoa Museum.

A few specimens were collected during the rainy season.

174. **Dactylispa atkinsoni**, *Gestro.*

Hispa atkinsoni, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 132.

Body narrow, oblong, shining. Yellow to red-brown; the antennæ piceous; the prothorax with two black vittæ; the elytra with the discal spines and the suture for a short distance at the base black; the underside pale yellow with the sternum blackish.

Head with very fine scattered punctures between the eyes. The antennæ are slender and long, about two-thirds the length of the body; the first joint is thick and with a reddish tint, the

second is much smaller, the third the longest, the fourth to sixth subequal, the seventh a little longer than the sixth, the eighth to the last a little thickened. *Prothorax* transverse, slightly bi-impressed transversely at the base and densely rugose-punctate, except on a longitudinal median line that is slightly elevated, and covered with short whitish hairs. The two pairs of spines on the anterior border are situated at a good distance from each other, each pair joined together at the base and not appendiculate, the anterior spine being a little shorter than the posterior; each side has three spines, of which the anterior two (almost equal to each other) have a common stem, the third being shorter and free. *Scutellum* smooth, with the apex rounded. *Elytra* with large and almost square punctures arranged more or less regularly in longitudinal series and very close together. The spines on the disc are black, three or four of these situated longitudinally behind the humerus and three almost parallel to the apical margin being longer than others; the short spines on the basal margin are yellow with the apex dark, the marginal and apical spines entirely yellow. Sometimes the discal spines have round the base a black patch, which extending and coalescing with similar neighbouring patches forms a band; thus in some examples there is a black band which commencing at the base, across the humerus, covers a space almost parallel to the lateral margins, and then curves inwardly, finishing at the spine near the suture, nearly at the posterior third of the elytra. *Underside*: the legs are long and slender.

Length, 4½ mm.

PUNJAB: Bhim Tal, 4500 ft., ix. 1906 (*N. Annandale*). UNITED PROVINCES: Kumaon, Naini Tal Division, ix. 1917 (*H. G. Champion*). SIKKIM: Darjiling, vi. 1914 (*F. H. Gravely*); Mungphu.

Type in the Genoa Museum.

175. **Dactylispa montivaga**, *Gestro.*

Hispa montivaga, Gestro, Termés. Füzetek, 1898, p. 261.

Body very elongate. Testaceo-ferruginous, shining; the abdomen and legs paler, the sides of the sternum black.

Head: the length of the antennæ is more than two-thirds that of the body; the first joint is greatly elongated and longer than the third. *Prothorax* broader than long, the sides behind the lateral spines markedly sinuous. The disc is transversely impressed in front and behind, with a slightly raised oval area in the middle and on each side of it another smaller area, all three being impunctate, but all round them are irregular punctures which are larger further back. Along the longitudinal median line there are six black spots, one pair of which are almost joined together and situated between the spines of the anterior margin, a pair in the centre and a pair towards the base and slightly nearer the sides; all these spots are small and not very apparent,

especially those of the first and third pair. The spines of the prothorax are fairly stout; of those on the anterior margin, the posterior one is almost vertical and the other shorter and curved forwards and upwards. Of the three lateral spines, the two anterior ones are joined together at the base and almost equal, being directed somewhat obliquely upwards and forwards; the hind one, which is inserted very close to the point of origin of the others, is shorter almost by one-half and turned slightly backwards. *Scutellum* opaque and edged with black at the base. *Elytra* punctate-striate, the punctures being close together, very large and deep. The spines which border the basal margin are minute, those which surround the humeral projection much stouter than the others, but still more stout and more dilated at the base are two which are situated at the posterior external angle; the marginals are longer than the discals, and alternate regularly with much shorter and more slender spines; the apicals are very minute. The colour of the discal spines is considerably darker than that of the base of the elytra; the marginal spines are much paler.

Length, 4 mm.

SIKKIM: Darjiling.

Type in the Budapest Museum.

176. **Dactylispa delicatula**, *Gestro*.

Hispa delicatula, Gestro, Ann. Mus. Civ. Genova, xxvi, 1888, p. 182, and xxx, 1890, p. 264.

Body oblong, subnitid. Colour very pale yellow; the antennæ testaceous, the three basal joints more ferruginous; the prothorax with two median black spots and all the spines dark at the tips; the scutellum black; the elytra with the discal spines black, the marginal ones dark at the extreme tips only.

Head: on the vertex there are two contiguous smooth white areas. *Prothorax* transverse, depressed and entirely rugose-punctate with the exception of two white, shining, transverse, oval and contiguous areas which are in a depression in the middle. On the anterior margin there are two widely separated pairs of spines, each pair being joined together at the base, the posterior longer and vertical, the anterior directed obliquely forwards and bent upwards like a hook; of the three lateral spines, the two anterior ones are joined together at the base forming a short stem, the second being longer than the first, and the third spine is much shorter and moderately distant from the point of insertion of the other two. *Elytra* somewhat elongate and parallel-sided, regularly punctate-striate, the punctures being neither very large nor very close together. The disc is armed with long and robust spines which are slightly curved backward; the spines on the lateral margins are numerous and longer than those on the disc, regularly decreasing in length from the middle towards both the

base and the apex; the spines near the scutellum and on the humerus are shorter, and especially those on the apical margin, of which the inmost ones are the shortest.

Length, 4 mm.

BURMA: Bhamo, viii. 1886 (*L. Fea*).

Type in the Genoa Museum.

177 **Dactylispa minuta**, *Gestro*.

Hispa minuta, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 259.

Body oblong, shining. Colour pale yellow; the antennæ brown, with the two basal joints darker; the head and thorax testaceo-ferruginous, the latter black on the disc and covered with whitish hairs, all the spines being piceous black; the scutellum fuscous; the elytra with whitish hairs, the scutellar margin black, the suture fuscous, a broad humeral patch and an ante-apical fascia black, the discal and marginal spines black, the apical ones pale yellow with dark tips; the sternum fusco-testaceous, the abdomen and legs pale yellow.

Prothorax traversed in the middle by a longitudinal ferruginous line which is only slightly apparent. The anterior margin bears two distant pairs of spines, the posterior spine of each pair being twice the length of the other; of the three lateral spines, the two anterior ones are joined at their base into a rather short stalk, the first being shorter than the second, and the third spine the shortest and free, but closely adjacent to the base of the other two. *Elytra* very pale yellow, punctate-striate, with rather long white hairs. The long discal spines are much thickened at their base; the marginal spines are as long as, or rather longer than, the discal ones and slightly irregular, those at the apex being very short.

Length, 3 mm.

BURMA: Palon; Pegu (*L. Fea*).

Type in the Genoa Museum.

178. **Dactylispa ferrugineo-nigra**, sp. nov.

Body oblong, broad. The upper side entirely black and subnitid; the antennæ, legs and underside entirely red-brown.

Head broad, dark red-brown, rough, with a faint median longitudinal ridge, which is a continuation of the inter-antennal ridge. The antennæ are more than half the length of the body, hairy, the five basal joints less so than the six apical joints, which are slightly thicker; the first joint is large and club-shaped, flattened at the base; the second is small and rounded, the third slightly longer than the fourth, the fourth and fifth almost equal, the sixth and seventh almost equal, the eighth to tenth shorter than the preceding joints and equal, the last slightly longer and blunt. *Prothorax* very coarsely punctate, the punctures large and rounded,

and each having a black hair in the centre; there is a median longitudinal sulcation on a more or less impunctate area. On the front border there are two pairs of spines, each pair with a common stem and enclosing a narrow acute angle, the front one being very slightly shorter; of the three stout lateral spines having a common base, the anterior two are equal, obliquely inclined and on a common stem, the hind one being the shortest and arising from the base. *Scutellum* granulate, broad, triangular, with the apex broadly rounded. *Elytra* punctate-striate, the punctures being large, deep, squarish and close to each other, each containing a hair. On the ridge on each side of the scutellum there are four stout spines, on the humerus three longer spines, and beginning from the base, each of these spines is shorter than the next; besides these there are on the disc of each elytron thirteen long stout spines, which are not all of equal length, and several minute ones. Each lateral margin has eleven long unequal spines, which are stout and slightly curved backwards, and between them there are minute spinules; on each apical margin there are about nine teeth-like spinules. *Underside*: the abdominal segments are opaque, granulate and very sparsely hairy. The rest of the underside and the legs are more shiny; the claw-joint projects well beyond the bilobed joint.

Length, $5\frac{3}{4}$ mm.

BURMA: Karen Hills (*Doherty*).

Type in the British Museum.

Described from one example.

179. **Dactylispa pugnax**, *Gestro*.

Hispa pugnax, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 134.

Dactylispa pugnax, Gestro, Ann. Mus. Hung. 1907, p. 74.

Body oblong, rather narrow. Black, shining; the antennæ (except the two basal joints), abdomen and legs fulvous.

Head: the length of the antennæ is greater than half the length of the body. *Prothorax* broader than long, with the sides almost parallel, covered with dense punctures, except one short narrow median longitudinal area which is smooth. The two pairs of spines on the anterior margin are separate, each pair being joined at the base; of the three lateral spines the first two are on a very short common stem and directed slightly obliquely upwards and forwards, the hind one being free, about half the length of the others and deflected outwards. *Scutellum* granulate, broad, triangular, with the apex obtuse. *Elytra* punctate-striate, the punctures being large and dense. The spines on the disc, except those at the base, are long, the marginal ones being still longer and not alternating with shorter ones; the apicals are a little shorter than the marginals, and gradually decrease.

Length, $4\frac{1}{3}$ mm.

SIKKIM: Darjiling (*Fruhstorfer*). BURMA: Ruby Mines, 4000–4400 ft. (*Doherty*).

Type in the Genoa Museum.

The Darjiling specimen (Budapest Museum) has the antennæ entirely black.

180. **Dactylispa balyi**, *Gestro*.

Hispa balyi, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 250, and 1897, p. 82.

Hispa discoidalis, Baly (nec Chapuis), Ann. Mus. Civ. Genova, xxvi, 1888, p. 664.

Body narrow, oblong. Black, shining; the antennæ tinged with pitch-black; the face and sternum rufo-piceous; the abdomen and legs rufo-fulvous.

Head: the antennæ are slender, nearly three-fourths the length of the body, and slightly thickened towards the apex. *Prothorax* transverse, subcylindrical at the apex, armed just behind the latter with two pairs of spines which are slightly inclined forwards. The upper surface is flattened, closely rugose-punctate, clothed with adpressed white hairs; in the middle there is a hairless area which is slightly raised, smooth, impunctate and transversely oblong. Each side has three spines, the anterior two being united for some distance above the base, the middle one armed with several short acute teeth. *Elytra* oblong, margined on the sides and apex with a row of long acute spines, the basal margin with a row of obsolete spines. The upper surface is strongly and coarsely punctate-striate; each elytron with three rows of strong erect spines, those in the middle row more distantly placed than the others. *Underside*: the femora have a small spine on the underside.

Length, 5 mm.

BURMA: Teinzo (*L. Fea*, type). SUMATRA: Forest of Si-Rambé and Pangherang-Pisang (*Dr. Modigliani*); Tanjong; Morawa; Liwa (*Doherty*); Svekaranda; Liangagas. JAVA.

Type in the Genoa Museum.

This species was described from two specimens from Burma, but has a wider distribution in the Indo-Malay region. Dr. Gestro states that one example from the Forest of Si-Rambé (Sumatra) differs from the type specimen in having the spine of the prothorax scarcely visibly appendiculate. Another specimen from the same place differs in having (1) the antennæ fulvous (including the two basal joints), (2) the prothorax black with the margin brown, or almost wholly brown, (3) the scutellum brown and not black, (4) the lateral spine of the prothorax a little shorter and with scarcely perceptible traces of appendices.

In four specimens from Pangherang-Pisang the prothorax is entirely light brown.

Dr. Gestro is of opinion that these differences are not specific

but merely variations. He adds that the variability of the form and dimensions of the prothoracic spines that is frequently met with in the individuals of the same species, constitutes a serious difficulty in the identification of these insects. In the present species, for example, some have the common base of the three lateral spines shorter and wider, while in others the anterior spine (of the lateral three) is shorter and nearer the apex of the common insertion. The spines also vary in length.

181. **Dactylispa cariana**, *Gestro.*

Hispa cariana, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 251.

Black or pitch-black; the head and antennæ brown, except the basal joints of the latter; the elytra with a longitudinal series of brownish-yellow patches near the suture from base to apex; the underside testaceo-ferruginous, the sides only of the sternum pitch-black, the legs yellowish brown.

This species is very like *D. balyi*. *Head*: the antennæ are slender, as in *balyi*, but the third joint is shorter. *Prothorax* with fine white hairs, punctate and rugose, and with a transverse central area which is somewhat raised, smooth and hairless. The spines are appendiculate: the anterior ones in *balyi* are slightly inclined forwards, in *cariana*, on the contrary, they are almost vertical; the lateral spines differ slightly, the two anterior ones being joined together, and the hind one shorter and free. *Elytra* irregularly punctate-striate and clothed with rather long whitish hairs; the marginal spines are less numerous than in the allied species.

Length, $4\frac{1}{3}$–$4\frac{2}{3}$ mm.

Burma: Karen Hills, 3000–3700 ft. (*L. Fea*).

Type in the Genoa Museum.

182. **Dactylispa variabilis**, sp. nov.

Body oblong. Black; the underside of the abdomen and the legs yellow-brown to red-brown.

Head: strongly convex, with a deep median longitudinal sulcation; the constriction behind the eyes deep. The antennæ are long, with the six apical joints more hairy than the rest; the first joint is long and thick and slightly bent outwards, the second very short, the third the longest, the fourth and fifth almost equal, the third to fifth slender, from the sixth to the last slightly thickened. *Prothorax* almost as long as broad. On the front border there are two pairs of spines, close to each other; the spines of each pair are almost vertical, enclosing a narrow angle, the front one being slightly shorter than the posterior one. Each side has a group of three spines, the anterior two being stalked, with the front one slightly shorter, the third free and small; these spines, as well as those on the front border, may bear one or two setæ, and all are robust. The disc is concave, with a

strongly raised, convex and transverse area in the middle, which has a fine longitudinal median line; the surface all round it is coarsely punctate and scattered with fine hairs. *Scutellum* triangular, with the apex rounded; the surface granular, with a hollow in the middle. *Elytra* punctate-striate, with scattered fine erect whitish hairs, the punctures being large, rounded and deeply indented. There are about thirteen long spines on the disc of each elytron; the scutellar ridge has about four or five small spines, and the elytral margin from the humeral to the sutural angle about thirteen long ones, those on the apical margin becoming very short; between these long spines there may be minute ones.

Length, $5\frac{1}{2}$ mm.

SIKKIM: Singla, 1500 ft., Darjiling, v. 1913 (*Lord Carmichael*—Ind. Mus.). ASSAM. BURMA: Ruby Mines (*Doherty*); Tenasserim; Karen Hills.

Type in the Indian Museum.

In several of the Ruby Mines examples the antennæ are brown except the two basal joints. In one of the Tennasserim specimens the apical margin of the elytra and a few spots on the disc of the elytra are brownish. The position of the third spine of the lateral group of the prothorax also varies a little.

In Mr. H. E. Andrewes' collection there are three specimens from Java identified by Weise as Chapuis' *H. discoidalis* (Celebes); but these are black on the upper side, while Chapuis' specimens are rufo-ferruginous. It is possible this new species may be only a variety of *discoidalis* (see remarks on *D. balyi*); but it is impossible to decide anything definitely from the material before me, and I consider it convenient to keep the Indian species separate at present.

183. **Dactylispa pitapada**, sp. nov.

Body oblong. Black; the antennæ pitch-black; the legs pale yellow, with the articulations and tarsi brownish.

Head convex, with a deep longitudinal sulcation in the middle, the collar being constricted behind the eyes, smooth and shining. The five basal joints of the antennæ are very sparsely hairy, the six apical ones being more hairy; the first joint is long, thick and slightly bent outwards, the second small and more or less rounded, the third to fifth subequal and slender, the third being the longest, the sixth to the last thickened. *Prothorax* cylindrical in front, almost as long as broad. On the anterior border there are two pairs of spines, each pair having a common stalk and the front spine being smaller than the posterior one, which is vertical. Each side has a group of three spines all on one stalk, the third, a very small sharp spine, arising from the base of the stalk; of the anterior two the first is slightly shorter than the second, on which one or two setæ may be found; all the prothoracic spines are more or less slender. The disc with a transverse convex area in the middle, with the surface all round it concave, coarsely punctate

and with scattered whitish hairs. *Scutellum* granulate, triangular, with the apex rounded. *Elytra* punctate-striate, the punctures being round and deeply indented. On each elytron there are about eleven large spines which are long and strong, and there may be one or two more smaller spines; the marginal spines are long and few in number, being four or five on each side, far apart from each other, not all equal in length, and with minute spines between them; on the apical margin each elytron has two or three long spines alternating with shorter ones, the apical spines being much shorter than the marginal ones and gradually diminishing in length.

Length, 4½ mm.

MADRAS: Nilgiri Hills.

Type in Mr. H. E. Andrewes' collection.

Described from two examples.

184. **Dactylispa gonospila**, *Gestro.*

Hispa gonospila, Gestro, Ann. Mus. Civ. Genova, xxxviii, 1897, p. 130, fig. 17.

Body oblong, broad. Ferruginous yellow; the pronotum with two rather ill-defined and closely approximated black patches; the elytra with the humeral region, the external apical region and the discal spines black, the marginal spines between the black areas being yellow; the underside ferruginous yellow, the abdomen paler, the sides of the metasternum black.

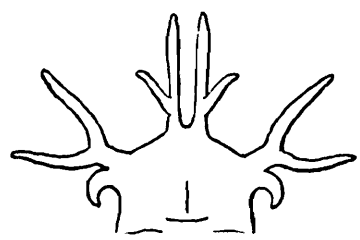


Fig. 64.—Prothorax of *Dactylispa gonospila*, Gestro. (After Gestro.)

Head: the antennæ are half as long again as the body. *Prothorax* broader than long, with its sides in front of the lateral spines strongly converging and behind the centre, almost parallel and slightly sinuous. The disc is slightly rugose and punctate, and sparsely covered with fine white hairs; there is in the middle a narrow longitudinal smooth area with a fine impressed line and on each side of it two rather ill-defined patches which are almost united. There are two pairs of spines on the anterior margin, each pair fused together at the base, the anterior one being almost double as long as the posterior and directed almost horizontally forwards, the posterior one being vertical; these two pairs of spines are very close to each other and the anterior ones are parallel. On each side there is a group of three spines having a common stem, the anterior two almost equal and directed obliquely

outwards and a little forwards, the third being rather short and turned backwards like a hook. All these spines are of a paler colour than the rest of the prothorax, with the extreme apex black. *Elytra* broad, lined very regularly with slightly marked costæ, between which runs a double set of broad separate subquadrate punctures, in pairs of transverse wrinkles. The few discal spines are black, short and very unequal. The marginal spines are longer than the discal ones, and are broad and slightly depressed at their bases, being black in the humeral region and at the external apical angle; the apical spines are short and entirely yellow.

Length, 6 mm.

BENGAL: Barway (*Father Cardon*).

Type in the Brussels Museum.

In its form and colouring this species strongly recalls the genus *Platypria*.

185. **Dactylispa vestita**, sp. nov.

Body oblong, broad. Colour red-brown, with two longitudinal bands on the prothorax, the extreme tips of the thoracic spines, all the discal spines on the elytra (except the smaller humeral ones), two large spines on the margin below the humerus and a few at the external apical angles, and the sides of the meso- and metasterna, black.

Head with the interocular space narrow owing to the great convexity and largeness of the eyes, and with a deep longitudinal median sulcation; the collar is shining brown with its sides blackish. The antennæ are fairly long, brown, covered with whitish brown hairs, the two or three basal joints being generally darker; the first joint is long and club-shaped, the second small and rounded, the third longer than the fourth, the fourth and fifth almost equal, the sixth shorter, the seventh longer, the eighth to tenth almost equal to each other, the eleventh slightly longer and pointed. *Prothorax* with two parallel transverse depressions, coarsely punctate, each puncture bearing a hair. On the front border there are two pairs of spines, each pair having a common base; the posterior spine is vertical, and the anterior one is curved inwardly, making a large acute angle with the other and generally bearing a minute spinule on its front border. Each side has a group of three spines having a common base, the hind one being small and pointed; the anterior two have a common stem, which is broad and more or less flattened, the spines being curved and each having a minute spinule. *Scutellum* granulate, triangular, with the apex rounded. *Elytra* punctate-striate, the punctures being large, subquadrate and close together, each bearing a hair. On each side of the scutellum the ridge has four spines, the ridge and a small space round it being black; the humerus is prominent, having three large black spines and three or four smaller red-brown ones; besides these spines on

the disc of each elytron there are eight large black ones, and two or three smaller ones, the spines being sharply pointed with broad bases. The lateral margin of each elytron is slightly expanded, and has from twenty-one to twenty-nine spines, including minute ones, from the humeral to the sutural angle, the spines being alternately large and small, the large ones more or less flattened; those on the apical margin are very minute and gradually diminish. All the spines of the elytra are slightly directed backwards. *Underside*: the abdominal segments, as well as other parts, may have a faint blackish tinge on them. The claw-joint projects beyond the bilobed joint.

Length, $5\frac{1}{4}$ mm.

United Provinces: Mussoori.

Type in the British Museum.

Described from one example.

It resembles *D. confluens* (p. 238) in general form, particularly in the characteristic curvature of the lateral group of spines, and the expansion of the elytral margin.

186. **Dactylispa mahendra**, sp. nov.

Body oblong, broad, with the margin of the elytra expanded. Yellow-brown; the eyes and two patches on the pronotum black; the disc of the elytra together with the discal spines darker.

Head broad, interocular space with a deep longitudinal sulcation in the middle; the collar is smooth, shining and blackish. The antennæ are not very slender; the first joint is the longest and stoutest and slightly bent outwards, the second small and rounded, the third to sixth slender and subequal, the seventh to the last slightly thicker and more hairy. *Prothorax* broadest in the middle and almost as long as broad; on the front border there are two pairs of spines, each pair with a common base, the posterior spine being vertical. Each side has a group of three spines, the anterior two, which are equal, having a common base and the third being free and smaller. These spines are strong and yellow, with the extreme tips black. The disc is depressed on each side, the depressed surface being coarsely punctate; longitudinally in the middle there is a smooth area, on each side of which is a large black patch. *Scutellum* granulate, triangular, with the apex rounded. *Elytra* punctate-striate, the punctures being large, subquadrate, and crowded together. On the disc of each elytron there are about ten large spines besides some smaller ones; the humeral ridge has two large and two small spines, the scutellar ridge about four small black ones; the large spines of the disc have very broadened bases, the spines themselves being slender, sharp, and slightly bent backwards. From the humeral to the apical angle on each lateral margin there are about eighteen larger spines, at least of three different lengths,

and in between them there may be minute spines; on the apical margin the spines are much shorter. All the marginal spines are yellow.

Length, 4½ mm.

ASSAM: Patkai Hills (*Doherty*).

Type in the British Museum.

Described from one example.

187 **Dactylispa bilasa**, sp. nov.

Body oblong. Colour yellowish brown, subnitid; two longitudinal bands on the prothorax, the suture at its commencement, the spines on the disc of the elytra, and one at the external apical angle of the lateral margin, an ill-defined patch below the shoulder, and the sides of the meso- and metasterna, black.

Head with the interocular space slightly elevated and bearing two or three strong punctures. The antennæ are only half a millimetre shorter than the length of the body, and hairy; the first joint is long and club-shaped, the second small and rounded, the third a little longer than the second, the fourth longer than the second and third put together, the fifth, sixth, and seventh almost equal, the eighth to eleventh almost equal to each other but shorter than each of the three preceding joints, the last joint pointed. *Prothorax* opaque. The surface on each side from the base of the lateral spines to some distance inwards is deeply excavated, so that there is a broad elevated area in the middle from the base to the foot of the frontal spines; longitudinally in the middle there is a fairly broad impunctate smooth brown area, on each side of which there is a blackish area which is strongly and coarsely punctate, each puncture bearing a hair; the depressed area on each side is not punctate or hairy; the base is transversely raised. On the front border there are two pairs of spines, each pair with a common stem, the front one being shorter than the posterior one, which is almost vertical; of the three lateral spines, the anterior two have a common stem and the hind one, which is the shortest, arises from the base, the middle spine being slightly longer than the front one. *Scutellum* triangular, with the apex broadly rounded; yellowish brown, with the apical edges black. *Elytra* more shining than the prothorax, punctate-striate, the punctures being large, subquadrate, and close to each other; the suture is depressed and black at its commencement. On each side of the scutellum the ridge is black and has four minute spines; on the disc of each elytron there are twelve long black spines and three or four minute brown spinules with black tips, and at the base of the humerus there is a yellow spine. Each lateral margin has seven or eight long spines which are rather widely separated, the intervals containing minute spines; all these spines are yellowish brown with black tips, except one at the external apical angle of the margin of the elytron which is

black; the apical margin bears extremely small spines. *Underside*: the abdominal segments are hairy. The legs are slender; the claw-joint projects beyond the bilobed joint.

Length, 4½ mm.

ASSAM: Sudiya (*Doherty*).

Type in the British Museum.

Described from one example.

188. **Dactylispa elegantula**, *Duv.*

Hispa elegantula, Duvivier, Ann. Soc. Ent. Belg. xxxvi, 1892, p. 447.

Body oblong, slightly broadened behind. Colour brownish yellow; the antennæ and head fawn-coloured, with two brown spots on the vertex; the prothorax with two blackish patches; the elytra brownish.

Head with a fine groove on the vertex behind the antennæ, smooth and shining. The antennæ are longer than half the length of the body, robust, slightly covered with golden pubescence; the first joint is large, thick, and slightly bent outwardly, the second short, the third twice as long as the second, the fourth hardly shorter than the third, the following ones subequal, the last joint pointed. *Prothorax* broader than long, narrowed in front, flattened, slightly impressed on either side, subrugose with a smooth shining area in the middle and slightly pubescent. The anterior border has two pairs of spines, each pair with a common base, the front spine being oblique and directed forwards, the posterior one longer, thicker and vertical; each side has anteriorly a small dilatation carrying three spines, the first two being oblique and subequal, and the hind one half as short and a little separated from the first two. *Scutellum* fairly large, fawn-coloured, with a black spot on each side at the base. *Elytra* broader at the base than the prothorax, very feebly sinuate under the shoulders, very slightly dilated behind, or truncate with the angles rounded; depressed, strongly punctate-striate and armed with numerous moderately long spines. On either side of the scutellum there are four short spines with brownish apices, and along the base there are very short and pale ones; there are four longer dark brown spines on the shoulders, the posterior two exceeding the other two in length; along the margin there is a series of longer and light spines, except the last which is black; the truncate apical margin is unarmed. On the disc there is a series of four spines on the second interspace, and between this and the margin another irregular series of four or five spines; behind the middle there are several spines arranged transversely, which are the thickest and the most highly coloured; all these discal spines are black or very dark brown. *Underside* and legs testaceous, with the sides of the metasternum brownish.

Length, 3½ mm.; breadth 2 mm.

SIKKIM: Kurseong (*P. Braet*).

Type in the Brussels Museum.

189. **Dactylispa monticola**, *Gestro.*

Hispa monticola, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 257.
H. monticola var. *anthracina*, Gestro, *l. c.*

Body oblong, subnitid. Head black, with the front, vertex and antennæ ferruginous, the last with the two basal joints black; the prothorax ferruginous, with its disc black; the elytra yellow or amber-yellow ferruginous; the underside and legs yellow-ferruginous, the sternum being black. Sometimes entirely black above (var. *anthracina*, Gestro).

Prothorax covered with very fine white hairs, coarsely punctate, and with three small longitudinal tubercles, parallel to each other and smooth. In front there are two pairs of spines, each pair united at the base, the anterior one being shorter than the posterior; of the three lateral spines the two anterior ones are on a short common stem and almost equal to one another, the hind one being much shorter and free. *Elytra* rather broad, yellow or yellowish ferruginous, the lateral margin largely brown or pitch-black and the spines also of that colour. The surface is irregularly punctate-striate, the interstices being slightly raised into costæ; the discal spines have broad bases and are shorter than the marginal ones, the latter alternating with much shorter and more slender spines.

Length, $3\frac{3}{4}$–$4\frac{1}{2}$ mm.

BURMA: Karen Hills, 4700–5000 ft., iii–iv. 1888 (*L. Fea*).

Type in the Genoa Museum.

190. **Dactylispa asoka**, sp. nov.

Body oblong, broad. Red-brown; the eyes, two patches on the pronotum, the discal spines on the elytra, and two or three marginals below the humerus and at the external apical angle of the elytra, black.

Head broad, the interocular space with a longitudinal median impression; the collar is constricted behind the eyes, smooth and shining. The antennæ are nearly as long as the body, of uniform thickness throughout and covered with stiff hairs; the first joint is the longest and thickest, the second small (these two joints are sometimes blackish), the third a little shorter than the fourth, the fourth to seventh equal, the eighth to the last shorter. *Prothorax* almost as broad as long; on the anterior border there are two pairs of spines not very close to each other, each pair stalked, the front spine being shorter than the posterior one, which is vertical; of the three lateral spines the anterior two are stalked, and the third free, the former being almost equal to each other. All the prothoracic spines are moderately strong, with the extreme tips black. The disc has three longitudinal tubercles in the middle with the sides depressed; the areas between the tubercles are coarsely punctate, with a few hairs,

the areas round the two outer tubercles being black; there is also a transverse depression in front of the basal margin. *Scutellum* triangular, with the apex rounded, and the surface rough and impressed near the apex. *Elytra* punctate-striate, the punctures being large, subquadrate, and close to each other. On the disc of each elytron there are thirteen large black spines, as well as several small ones, and three or four minute ones on the sutural ridge; on the lateral margin there are ten or eleven long spines, on the apical margin a few minute teeth. *Underside* red-brown with the sides of the sterna black; the legs sometimes a little lighter.

Length, $4\frac{1}{4}$ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection.

Described from four examples.

191. Dactylispa tissa, sp. nov.

Body oblong. Yellow-brown; the eyes, collar, eight or nine basal joints of the antennæ, pronotum, most of the elytral spines, and underside black; the legs yellow; two or three apical joints of the antennæ bright red-brown.

Head black; generally the interocular space is dark brown, with a deep longitudinal median sulcation; a row of white hairs along the dorsal margin of each eye. The antennæ are robust and covered with stiff bristly hairs; the third to seventh joints are gradually thickened and attenuated to the end; the first joint granulate, the remaining black joints strigose; the first joint is long and thick and slightly bent outwardly, the third and sixth subequal in length, the third being the longest, the seventh thicker; then the joints become smaller. *Prothorax* almost as long as broad; on the front border there are two pairs of spines not very close to each other, each pair stalked, the front spine being a little curved and shorter than the posterior one; the three lateral spines are all on one stalk, the first two, which are almost equal, parting at a higher point, and the third, a very small spine, issuing from the base of the stalk. The whole surface is coarsely punctate and with scattered whitish hairs; across the middle of the disc is a transverse raised area, with a depression in front and behind. The colour may be wholly black or it may be reduced to two patches on the pronotum; the two pairs of spines on the front border and the third spine of the lateral group are always yellow-brown with the apices black. *Scutellum* pitch-black, triangular, with the apex rounded and the surface granulate. *Elytra* punctate-striate, the punctures being large, subquadrate, and close to each other, and with scattered fine whitish erect hairs. On each elytron there are nine or ten larger spines, also four or five smaller ones on the basal area and elsewhere, and four or five minute ones on the scutellar ridge; the lateral margin from the humeral to the sutural angle has from

nine to twelve spines, and on the apical margin there are two or three large ones and two or three smaller ones alternating. In specimens in which the black colour predominates only one or two small apical spines are yellow with black tips; in lighter specimens there are more yellow spines. *Underside*: in lighter specimens may be pitch-black. The legs are always yellow.

Length, $3\frac{1}{2}$–$4\frac{1}{2}$ mm.

CEYLON: Dikoya, 2800–4200 ft., xii. 1881–i. 1882; Kandy, ii. 1882 (*G. Lewis*).

Type in the British Museum.

Described from sixteen examples.

192. **Dactylispa præfica**, *Ws.*

Dactylispa præfica, Weise, Deut. Ent. Zeits. 1897, p. 135.

Body oblong and elongate. Colour reddish brown; the legs yellowish; the antennæ, the disc of the prothorax, the long spines, and the sternum very dark.

Head with a row of silvery hairs round the eyes and a deep longitudinal cleft in the interocular space. The antennæ are sparsely covered with whitish hairs; the first joint is the thickest and a little flattened on the outer side, the second small and more or less rounded, the following joints more slender. *Prothorax* with the anterior part cylindrical and armed with two pairs of spines; on each side there is a group of three spines, the basal one being very minute. The disc is transverse, opaque, black and rugose-punctate, each puncture containing a single silvery hair; there are two transverse shallow depressions extending from one side to the other, and a raised smooth area in the centre. *Scutellum* smooth, triangular, with the apex rounded. *Elytra* punctate-striate, shining, and with scattered whitish erect hairs, the punctures being large, subquadrate and close together. On each elytron there are about twenty-six spines, including the small ones; the marginal spines are long, but at the apex they become very small. *Underside*: the femora denticulate beneath.

Length, $3\frac{1}{2}$–$3\frac{4}{5}$ mm.

BOMBAY: N. Kanara (*T. R. D. Bell*); Belgaum (*H. E. Andrewes*).

Type in Weise's collection, Berlin; cotype in Mr. H. E. Andrewes' collection.

193. **Dactylispa nalika**, sp. nov.

Body oblong and testaceous, the eyes, collar, pronotum, elytral spines, and sternum black; the abdominal sternites, first, second, seventh, eighth and ninth joints of the antennæ pitch-black; the legs yellow.

Head broad, with the constricted collar smooth and shining; the interocular space is covered with white hairs and has a deep longitudinal median sulcation. The antennæ are comparatively short about half the length of the body and hairy; the first joint

is long and thick and slightly bent outwards, the second small, the third to sixth subequal, the former being the longest, red-brown, and more slender; the seventh to last form a slightly thickened tapering club. *Prothorax* almost as long as broad; on the front border there are two pairs of spines not very close to each other, each pair having a common stalk and the front spine being smaller than the posterior one; each side has a group of three spines, the anterior two being stalked and almost equal, the third much smaller and quite free. The disc is black, coarsely punctate, slightly elevated in the middle, without any smooth space, and with scattered white hairs. All the prothoracic spines and a border all round brownish yellow, the extreme tips of the spines being blackish. *Scutellum* brown, triangular with the apex rounded, and the surface granulate. *Elytra* punctate-striate, the punctures being subquadrate and close to each other, the costæ slightly elevated, and the whole surface scattered with fine whitish erect hairs. On the disc of each elytron there are about eleven larger spines, which are black and sharply pointed, and three or four much smaller yellow spinules; the lateral margin from the humeral to the sutural angle has nine longer black spines; towards the apical margin they gradually diminish, and here also they alternate with smaller yellow spines.

Length, $4\frac{1}{4}$ mm.

BOMBAY: Matheran, 2500 ft., iv. 1908 (Pusa coll.). MADRAS: Nilgiri Hills.

Type in the British Museum.

Described from one example.

The specimen from the Nilgiri Hills has the antennæ a little longer, otherwise there is no difference.

194. Dactylispa albopilosa, *Gestro*.

Hispa albopilosa, Gestro, Ann. Mus. Civ. Genova, xxvi, 1888, p. 181.

Dactylispa albopilosa, Weise, Deut. Ent. Zeits. 1907, p. 131.

Body oblong, elongate. Colour testaceous; the antennæ, the elevated smooth area on the disc of the prothorax, and the elytral spines black; the prothorax, the elytra, and other parts of the body generally are thinly covered with silvery white hairs, which on the elytra are erect.

Head with a row of silvery hairs round each eye, the interocular space smooth with a deep longitudinal furrow along the middle. *Prothorax* almost as long as broad; the anterior part is cylindrical and bears two pairs of spines, the anterior one of each pair being the smaller; the disc is transverse, with three spines on each side, the first and second on a common stalk, the latter being the longer and both appendiculate; the third spine is free, small and sharp; the apices of all the spines are black. The disc has a depression all round the middle, which has two raised and smooth areas with a longitudinal impression between them; in the depression are

coarse punctures and silvery white hairs. *Scutellum* triangular, with the apex rounded, blackish towards the apex and granulate. *Elytra* dark brown, punctate-striate, the punctures being round and close together. Along the scutellar edge of each elytron there are four spines, of which the first and the last are the longest, on the disc about fourteen large and small spines, including those on the humerus; along each margin there are about fourteen spines, large and small alternating, those on the apical margin greatly reduced. All the spines except the minute ones are black, together with a small area round their bases. *Underside* testaceous, the sternum darker; the legs are lighter.

Length, 5 mm.

BURMA: Thagata, iv. 1887 (*L. Fea*); Prome (Brit. Mus.).

Type in the Genoa Museum.

195. **Dactylispa maculata**, *Gestro.*

Hispa maculata, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 252.

Body oblong. The head and prothorax testaceo-ferruginous, the disc of the prothorax black, the anterior and lateral spines dark ferruginous with the apex black; the elytra ferruginous, with the sides, base, and marginal spines black.

Head: the antennæ are testaceo-ferruginous, the first two joints being darker. *Prothorax* covered with white hairs, with a transverse area in the middle, which is slightly convex, smooth and hairless, and crossed longitudinally by a ferruginous line. In front there are two pairs of spines, each pair united at the base, the posterior spine being almost double the length of the anterior; of the three lateral spines, the two anterior ones are on a short stout stem, and the hind one is much shorter and distant from the base of the anterior ones; all the thoracic spines are setiferous. *Elytra* irregularly punctate-striate; the discal spines are long and stout, the black colour at their bases coalescing with that of adjacent spines, so that the black on the elytra greatly predominates; the marginal spines are much longer than the discal ones and alternate very irregularly with shorter spines; the apical spines are very short and ferruginous, with dark tips.

Length, $4\frac{2}{3}$–$5\frac{1}{4}$ mm.

BURMA: Palon, Pegu; Karen Hills (*L. Fea*).

Type in the Genoa Museum.

196. **Dactylispa discicollis**, *Gestro.*

Hispa discicollis, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 254.

Body oblong, subnitid. Light cinnamon colour, covered with whitish pubescence; the antennæ brown, with the basal joint lighter; the prothorax with two black patches, and the spines tipped with black; all the discal and the longer marginal spines on the elytra black, the shorter marginals yellow with black tips.

Head: the antennæ exceed half the body in length. *Prothorax* broader than long, with two transverse depressions, of which the basal one is deeper, and also a large, transverse, slightly elevated and smooth area, laterally stained with black; the rest of the surface is punctate and rugose, and covered with a short fine white pubescence. The two anterior pairs of spines are appreciably distant from each other, each pair joined at the base, the anterior spine being the shorter; of the three lateral spines, the two anterior ones are longer, joined at the base, and almost equal, the third being shorter and at a good distance from the other two; all the anterior and lateral spines are setiferous. *Elytra* strongly and irregularly punctate-striate and covered with whitish, sparse, delicate, and rather long hairs. The discal spines are rather short and slightly thicker at the base, some of the marginal ones being a little longer, but alternating with shorter spines; the apical spines are the shortest.

Length, 5–6 mm.

BURMA: Palon, Pegu (*L. Fea*).

Type in the Genoa Museum.

Irregular formation of the spines is often observed in the species of this genus. One specimen, for instance, among the individuals of this species, has the marginal spines of one side almost all equally long and black, whilst on the opposite side there are long black spines alternating with shorter yellow ones.

197. **Dactylispa kamarupa**, sp. nov.

Body oblong. Head, antennæ, thorax and underside bright red-brown; the eyes, the elytral spines and a good deal of the elytral surface, and two faint patches on the pronotum, black; the legs yellow.

Head with a deep longitudinal median sulcation, the collar smooth and shining. The antennæ are a little shorter than the length of the body; the first joint is long, thick, and slightly bent outwardly, the second small, the third and sixth more slender and subequal in length, the third being the longest, the seventh and last a little thicker and slightly pubescent. *Prothorax* almost as broad as long; on the front border there are two pairs of spines not very close to each other, each pair being stalked and the front spine smaller than the posterior one, which is vertical; of the three lateral spines, the anterior two are on a common stem, and the third (a small one) quite free. Of the anterior two the front one is the smaller, and may be slightly bent in some examples. All the prothoracic spines are yellow with the apices black and with one or two setæ. The disc has a raised smooth area in the middle, with a black patch on each side, the depressed area all round being coarsely punctate and sparsely hairy. *Scutellum* finely granulate, triangular, yellow-brown, with the apex rounded. *Elytra* with the yellow-brown ground-colour almost obliterated by the spreading of the black colour of the spines round their bases,

the apical area being always yellow-brown, punctate-striate, and sparsely covered with fine erect whitish hairs, the punctures being coarse and deep. On the disc of each elytron there are about eleven or twelve large spines, besides some smaller ones on the front edge; on each margin from the humeral to the sutural angle there are about nine or ten spines; on the apical margin the three or four spines become gradually shorter, and are yellow with black tips, the lateral spines being black and much longer.

Length, $5\frac{1}{4}$ mm.

ASSAM: Mazbat, Mangaldai, 8.i.1911 (*Kemp*); Gomri farm, on plum tree, 2.iv.1907 (*Lefroy*).

Type in the Indian Museum.

Described from ten examples.

It is possible that this species may prove to be a local variety of *D. soror*, Ws.

The coloration of the ten specimens before me is quite constant.

198. **Dactylispa soror**, *Ws.*

Dactylispa soror, Weise, Deut. Ent. Zeits. 1897, p. 134, and 1905, p. 120.

Body elongate, parallel-sided. Testaceous; the antennæ piceous; two longitudinal patches on the upper surface of the prothorax, the tips of the thoracic spines, the elytral spines, together with a small area round their bases, black.

Head smooth, with a longitudinal impression down the middle, the continuation of which forms a fine ridge between the antennæ, and with a row of silvery hairs round each eye. The antennæ are long, slightly thickened towards the apex and sparsely covered with hairs; the first joint is thick, slightly bent outwardly, and longer than the third joint; the second joint small and rounded, the third more slender and longer than the fourth, the fourth and fifth equal, the sixth a little shorter, the seventh to the last slightly thickened, the seventh longer than each of the following joints. *Prothorax* almost as long as broad, roughly punctate, with a few scattered hairs, a faint median longitudinal impression and a transverse raised impunctate area across the middle. On the anterior border there are two pairs of spines, each pair standing on a common stalk, the anterior spine being small and slightly curved, the posterior much longer and straight; on each side there is a similar pair of stalked spines and a small one situated posterior to them; generally there are a few setæ on the spines. *Scutellum* granulate, subpentagonal, with a shallow depression at the apex, the apical border piceous. *Elytra* punctate-striate, with long and erect hairs. There are about fourteen irregular short and long sharp spines on the disc of each elytron; on the lateral margins the long spines alternate with minute and short ones; on the apical margin the spines are short. All the short spines on the margin have the same colour as that of the body. *Underside*: the legs are always yellow, or yellow-brown, the abdominal sternites being generally of the same colour, and the sternum darker;

but the underside may be entirely dark. The claw-joint projects a little beyond the lobes of the third joint; on the underside of the femora there are three to five small teeth.

Length, 4 mm.

SIKKIM: Mungphu (*Atkinson*); Singla, 1500 ft. (*Lord Carmichael*). BENGAL: Calcutta. BOMBAY: Belgaum (*H. E. Andrewes*). MADRAS: Parambikulam, Cochin State, 1700–3200 ft., ix. 1914 (*F. H. Gravely*); Taliparamba, Malabar, ix. 4. 1913; Kasergode, South Kanara, x. 1913; Pollibetta, South Coorg, v. 1914, x–xi. 1915 (*T. B. Fletcher*); Nilgiri Hills (*H. L. Andrewes*). CEYLON: Kandy, vi. 1908 (*G. E. Bryant*); Dikoya, i–ii. 1882 (*G. Lewis*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

This species occurs in the hills as well as on the plains, and varies a good deal in coloration. The ground-colour varies from light yellow-brown to red-brown. The two longitudinal black spots on the pronotum may be obsolescent, or, on the other hand, they may spread over the whole pronotum except the centre; in these cases the spines are almost wholly black. On the elytra the black colour at the base of the spines sometimes spreads and coalesces with that of the neighbouring spines; thus in many examples the humeral area is wholly black. But in the forty-four specimens before me the apical marginal area of the elytra is never black. The antennæ may be wholly pitch-black, and in some cases the third to sixth joints are lighter.

SECTION IV.

Key to the Species.

1.	Red-brown, with the tubercles and small flattened spines on the elytra black	*daipa*, sp. n., p. 225.
1′	Entirely blue-black ..	2.
2.	Lateral spines of the prothorax appendiculate	*andrewesiella*, Ws., p. 226.
2′.	Lateral spines not appendiculate	*gairi*, sp. n., p. 227.

199. **Dactylispa daipa**, sp. nov.

Body broad, oblong, sides of the elytra slightly expanded. Colour red-brown, the tubercles or small flattened spines on the elytra being black; the prothorax with three ill-defined patches and the tips of the spines black.

Head: the clypeus has a longitudinal median ridge; the interocular space with a median longitudinal impression, the surface on either side of which is rough. The antennæ are comparatively short and sparsely pubescent; the first joint is large and dilated in the middle, the second small and rounded, the third longer than each of the following joints, the fourth to seventh almost equal, the following joints gradually becoming shorter and slightly more

pubescent. *Prothorax* broader than long, coarsely and closely punctate, with two transverse shallow depressions, and with a granulate space in the middle free from punctures and bearing a faint longitudinal impression; almost every puncture has an adpressed silvery hair. On the front margin there are two not very distant pairs of spines, the space between them being transversely striate and with an ill-defined black patch; the anterior spine of each pair is shorter and a little curved, the posterior one being erect, the angle enclosed between them acute; each side is expanded, and arising from the edge of the expansion there are four spines. *Scutellum* granulate, triangular, with apex rounded. *Elytra* as broad at the base as at the apex, punctate-striate, the punctures being deep, coarse, and crowded together, and each having a little silvery hair in it; the interstices are raised, and the suture is depressed at the base. The humerus is raised, sharp, and bears four or five short spines; on the disc of the elytra there are sharp-pointed tubercles, the larger ones having very broad bases, and the smaller ones being very minute; each side has a narrow expansion, from the edge of which arise several flattened spines alternating with minute ones; the colour of the lateral expansion and its spines is comparatively lighter. *Underside*: the claw-joint projects beyond the bilobed joint.

Length, 5 mm.; breadth, 3 mm.

ANDAMAN ISLANDS (*Captain Wimberley*).

Type in the British Museum.

Described from one example.

200. **Dactylispa andrewesiella**, *Ws.*

Dactylispa andrewesiella, Weise, Deut. Ent. Zeits. 1905, p. 118.

Body oblong, slightly broadened behind. Colour entirely black, shining; the labrum and claws brown.

Head deeply and longitudinally channelled in the middle, with a slight elevation between the antennæ and a row of silvery hairs round each eye. The mouth-parts are pubescent. The antennæ are long and slender and generally pubescent, the apical joints more so than the basal ones; the first joint is the thickest but attenuated at base, the second small and rounded, the third slender and the longest, the following joints gradually becoming shorter, the seventh to eleventh being slightly thicker. *Prothorax* almost as long as broad, armed in front with two pairs of spines, the anterior spine of each pair being appendiculate and shorter than the posterior one. On each side there are four spines having a common base: the hind one is short, simple, and pointed; the next (third) is larger and appendiculate on either side, one of these minute spinules sometimes growing into a fairly long spine; the first and second have a common stalk, the first being shorter than the second, which is appendiculate. The disc is roughly punctate and slightly hairy, with a transverse depression in front of the base and an elevated impunctate area in the centre.

Scutellum broadly triangular, the apex widely rounded; the surface has a slight depression in the middle and is granulate. *Elytra* slightly broadened behind, punctate-striate, the punctures being subquadrate and approximated, and each bearing a small hair. On each elytron there are about twenty-seven spines, some of the dorsal ones near the base being curved; the marginal spines are close to one another and are alternately shorter and longer, being shortest at the apex. *Underside* slightly covered with hair; the legs are long and more or less thin.

Length, 5–5½ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

201. **Dactylispa gairi**, sp. nov.

Body oblong, blue-black, shining.

Head with a longitudinal median sulcation in the interocular space. The antennæ are long, the six basal joints being more shining and less hairy than the others; the first joint is long and club-shaped, the second very small, the third very long, longer than the fourth, the fourth to sixth subequal, the seventh long and slightly thicker, the remaining joints of equal thickness but shorter and almost equal to each other in length. *Prothorax* with a transverse depression in front of the base and also a slight depression behind the two front pair of spines, very coarsely and roughly punctate, each puncture having a silvery hair; there is a median longitudinal raised area which is broader in the centre. On the front border there are two pairs of spines, each pair having a common stem and enclosing an acute angle, the posterior spine being almost vertical and the front one shorter and a little curved. Each side has a group of four spines, the front three having a common stem, and of these the front two again are stalked; the first spine is shorter than the following two, the third is the longest, and the fourth spine is the smallest and separate, but very close to the group. *Scutellum* broad, triangular, with the apex broadly rounded; the surface is not smooth and has a slight depression near the apex. *Elytra* punctate-striate, the punctures being large, subquadrate, and close together. The spines are strong and large; on the humerus there are three strong curved spines, two on the ridge by the scutellum, and on the disc of each elytron ten large spines and five or six small ones; from the humeral to the sutural angle there are thirteen or fourteen strong spines close to each other, not all of equal length, one or two being quite small, and on the apical margin they are shorter. *Underside*: the abdominal segments are sparsely hairy and edged with brown. The claw-joint projects beyond the bilobed joint, the claws being strong and red-brown.

MADRAS: Nilgiri Hills (*A. K. Weld Downing*).

Type in Mr. H. E. Andrewes' collection.

Described from one example.

Section V.

Key to the Species.

1.	Entirely of one colour, dull brown..	*opaca*, sp. n., p. 228.
1′.	Of more than one colour	2.
2.	Colour very pale yellow, antennæ darker; apices of the discal spines of the elytra brown, marginal spines numerous and longer than the discal ones	[p. 229. *pallidissima*, Gestro,
2′.	No such combination of characters. .	3. [p. 229.
3.	Pronotum immaculate ..	*andamanensis*, sp. n.,
3′	Pronotum maculate	4.
4.	Pronotal spots small and rounded; humeral area and that at the external apical angle of the elytra with dark brown patches	[p. 230. *platyprioides*, Gestro,
4′	Pronotum with two wide pitch-black patches connected at the base; humeral area and that at the external apical angles without patches .	*horni*, Gestro, p. 231.

202. **Dactylispa opaca**, sp. nov.

Body oblong, broad, opaque, entirely pale brown.

Head with a deep median longitudinal sulcation. The antennæ are not very long, and sparsely covered with hair; the first joint is long, the second small and rounded, the third shorter than the first, the third and fourth almost equal, the fifth slightly longer, the sixth shorter, the seventh slightly longer than either the eighth or sixth, the eighth to eleventh equal in length and breadth. *Prothorax* depressed in front of the base and again in front of the middle, coarsely punctate, with a median longitudinal impunctate area which does not reach the base and has a microscopically granulate surface with an impressed longitudinal line in the middle. The first spine of each group of triple spines on the front border is small and arises as an appendix from the front side of the next spine; the two anterior spines of each lateral group are equal. *Scutellum* triangular. *Elytra* punctate-striate, the punctures being rounded, deep and close together; the interstices are raised. On the humerus there are four spines, and on the disc of each elytron nine or ten spines, one or two of which are small; each lateral margin has nine or ten large spines which are close to each other and slightly curved backward; on the apical margin the spines are very short and about five in number. *Underside*: the claw-joint projects a little beyond the bilobed joint.

Length, 4½ mm.

Andaman Islands (*Captain Wimberley*).

Type in the British Museum.

Described from one example.

203. Dactylispa pallidissima, *Gestro.*

Dactylispa (*Triplispa*) *pallidissima,* Gestro, Ann. Mus. Civ. Genova, 1910, p. 6.

Body oblong, wide. Colour very pale yellow, the antennæ darker, and the discal spines of the elytra with their apices brown.

Head with a slight median longitudinal furrow. The antennæ are long; the first joint is the longest and stoutest, the second the shortest, the third somewhat shorter than the first, the fourth and the following each slightly shorter than the third and almost equal to each other in length. *Prothorax* transverse, narrowed towards the front, with its sides sinuate behind the lateral spines; the disc is somewhat flattened and depressed transversely in front of the base, with broad and shallow punctures, except on the median line and on the anterior margin. The two pairs of spines on the front margin are inserted at no great distance from each other and are parallel; each pair is composed of a stout short stem which carries two spines, the posterior one being longer and pointing vertically upwards, the anterior one bent obliquely forwards and upwards with a slight curvature, and bifurcating close to its insertion. The three lateral spines are somewhat stout; the two anterior ones are joined at the base into a short common stem and point obliquely outwards and forwards, the hind one, which is appreciably shorter, points outwards and slightly backwards. *Elytra* broad, and a little wider at the apex than at the base, with irregular costæ, between which are double rows of almost square, broad punctures. The discal spines are rather short and unequal, the longest and stoutest of them being those which form the humeral crest, as well as some in the middle of the disc and three at the top of the apical declivity; the marginal spines are longer than the discal ones and very numerous, alternating rather irregularly with shorter spines (in the type specimen there are twenty-one on each side); the spines of the apical margin are slightly shorter than the lateral ones.

Length, 5 mm.

BURMA: Pegu.

Type in the Genoa Museum.

204. Dactylispa andamanensis, sp. nov.

Body oblong elongate, subnitid. Colour yellow; the thoracic spines tipped with brownish black; the discal spines of the elytra black, the marginal ones all yellow.

Head broad, the interocular space shining and with a deep longitudinal sulcation in the middle. The antennæ are comparatively long, the three basal joints having a few scattered hairs, and the rest pubescent; the first joint is large, the second small and rounded, the third slightly longer than the second, the

fourth almost twice the length of the third, the fourth and fifth equal, the sixth slightly shorter, the seventh much longer, the rest of the joints almost equal to each other in length, the last being blunt. *Prothorax* with a narrow transverse raised shining area across the middle, all round which the surface is depressed and coarsely punctate, the narrow area being longitudinally sulcate in the middle; each puncture containing a hair. On the front border there are two pairs of spines, each pair with a common base and enclosing a narrow acute angle; the posterior one is the longer and almost vertical, and from the front border of the anterior spine arises a small spinule which is broken in the specimen before me. (If it is not a well developed spine then this species will be included in Section III.) Each side has a group of three spines arising singly, the middle one being longer than the other two. *Scutellum* broad, triangular, with the apex rounded and brownish, and the surface finely granulate. *Elytra* punctate-striate, the punctures being large, subquadrate, closely placed, and each containing a hair; the interstices are raised. On the basal margin and on the ridge on each side of the scutellum there are only two or three spines, three on the humerus, and eleven on the disc of each elytron; on each lateral margin there are ten to twelve larger spines, closely placed and slightly curved backwards, the middle ones being the longest; on the apical margin there are ten to twelve very minute spines. *Underside*: the abdominal segments are sparsely covered with hair. The claw-joint projects beyond the bilobed joint.

Length, 5 mm.

ANDAMAN ISLANDS (*Roepstorff*).

Type in the British Museum.

Described from one example.

205. **Dactylispa platyprioides**, *Gestro*.

Hispa platyprioides, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 262.

Body oblong, broad, subnitid. Pale testaceous; the posterior part of the head and the antennæ fuscous; the pronotum with two wide pitch-black spots connected at the base, the margins pale, and all the spines whitish with the apex of a brown tint; the elytra testaceous, with the discal spines pitch-black, and a dark brown patch on the humerus and at the external apical angle.

Prothorax strongly punctate, with very fine hairs which are visible with difficulty. Each group of three spines on the anterior margin is formed of a short horizontal front spine, an intermediate one, and a posterior vertical one which is the longest. On each side there are also three spines joined at the base on a short stem, which is wide and slightly depressed, the hind one being appreciably shorter than the other two. *Elytra* wide and irregularly punctate-striate. The spines on the disc are short, stout and

closely grouped at the base, being pitch-black, but those at the base and near the scutellum lighter; the marginal spines are less stout and appreciably longer, alternating with very small spinules; those of the humeral region and of the external apical angles are pitch-black, the others being whitish with a dark apex; the apical spines are very short.

Length, 4⅓ mm.

BURMA: Karen Hills, 3000–3700 ft. (*L. Fea*).

Type in the Genoa Museum.

206. **Dactylispa horni**, *Gestro.*

Dactylispa (*Triplispa*) *horni*, Gestro, Bull. Soc. Ent. Ital. 1902, p. 58.

Body broad, shining. The head and prothorax yellow-brown, the latter with two black patches in the middle and the margins paler, the spines pale yellow with the tips black; the antennæ ferruginous; the elytra yellowish red, with the discal spines black and the marginal ones pale yellow with black tips; the underside yellow-brown and shining, the abdomen opaque; the legs pale yellow.

Head yellow-brown, lighter in front and between the eyes, the interocular space with a fine median longitudinal impression. The antennæ are rather short, with the first joint equal in length to the next two joints. *Prothorax* a little broader than long, much narrower in front than at the base, the sides produced almost into an angle, and on this projection are situated the lateral spines; the disc is almost plane and with large and more or less deep punctures; there is a short impressed median longitudinal line; the basal margin is slightly elevated and there is a shallow transverse basal depression. The two pairs of spines on the anterior margin are widely separated, robust and not very long; the posterior spine of each pair is almost vertical, the anterior one directed forwards and a little upwards and deeply bifurcate. Each side has three spines, the anterior two of which have a short and slightly dilated common stem and are almost equal, being directed slightly forwards and almost in the same plane as the disc, but a little curved upwards; the third is shorter than the other two and is inserted behind them and in the same plane. *Scutellum* triangular, with the apex obtuse, alutaceous, deep yellow-brown. *Elytra* broad, with large subquadrate punctures crowded together and arranged in longitudinal series. The spines of the lateral margin are pale yellow at the base and reddish at the apex with the extreme tip black; they are not very long, but robust, dilated at the base, flattened, and slightly curved backward, and alternate with very minute spines; the apical spines are reddish like the elytra, much shorter than the lateral ones, very close to each other, depressed, triangular, and almost like teeth; the discal spines are short, robust and conical and slightly curved backward, with the base having the colour of the disc and the rest black;

two basal spines by the side of the scutellum are entirely black, and the first of the humeral spines is black to the extreme apex.

Length, 4¾ mm.

CEYLON: Naianda (*Dr. W Horn*).

Type in the Genoa Museum (one example).

SECTION VI.

Key to the Species.

1.	The ground-colour of the upper surface is shining black	2.
1′	The ground-colour of the upper surface is yellow, yellow-brown, or red-brown.	3.
2.	Antennæ dark ferruginous, with the two basal joints black; each group of triple spines on the front border of the prothorax arises from a common base; the spines ferruginous with black tips.	*multifida*, Gestro, p. 233.
2′.	Antennæ entirely yellow; in each group of triple spines on the front border of the prothorax the first always arises from the front side of the second as an appendix; all the spines black .	*parbatya*, nom. nov., [p. 234.
3.	The humerus is prominent with a series of six or seven strong black spines slightly curved backwards.... ..	*humeralis*, Ws., p. 236.
3′.	Humerus not prominent, with less than six strong spines	4.
4.	Prothoracic spines not appendiculate	5.
4′.	Prothoracic spines appendiculate .	6.
5.	Pronotal surface not excavated at the sides; fourth spine of the lateral prothoracic group not minute and not distant from the front ones	*chaturanga*, sp. n., p. 237.
5′.	Pronotal surface excavated at the sides; fourth spine of the lateral prothoracic group minute and distant	*confluens*, Baly, p. 238.
6.	Principal spines of the lateral prothoracic group nearly of the same length, slightly curved back; discal spines of the elytra short, black; marginal spines yellow, slightly curved back	*kantakita*, sp. n., p. 239.
6′.	No such combination of characters ..	7.
7.	Of the group of spines on the front border of the prothorax the foremost not arising as an appendix from near the apex of the following spine.	*tarusama*, sp. n., p. 240.
7′.	The foremost spine arising as an appendix from near the apex of the next spine	8.
8.	The posterior long spine of those on the front border and the anterior two of the lateral group of the prothorax, each bidenticulate; colour yellow-cinnamon; size small, 3½ mm. ..	*insignita*, Chap., p. 242.

8′.	No such combination of characters	9.
9.	Pronotum usually black, except the margins; a broad humeral area and a narrow common patch at the apex of the elytra pitch-black; from the middle of the posterior spine of the group on the front border of the prothorax issues a small spinule; elytral spines short	*brevicuspis*, Gestro, p. 242.
9′.	No such combination of characters	10.
10.	The width of the interocular space at the narrowest part nearly half the distance between the two groups of spines on the front border of the prothorax	*anula*, sp. n., p. 243.
10′.	The width of the interocular space about equal to the distance between the two groups of spines on the front border .	11.
11.	Insect larger ($6\frac{1}{2}$ mm.); upper side red-brown; discal spines of the elytra with wide bases, marginal spines more numerous	*pradhana*, sp. n., p. 244.
11′.	Insect smaller (5 mm.); upper side yellow-brown; discal spines with ordinary bases, marginal spines not numerous	*kunala*, sp. n., p. 245.

In this section are included (1) insects with two groups of triple spines on the front border of the prothorax and a group of four on each side, (2) insects with appendiculate spines both on the front border and on each side. Appendiculate spines are those which have small spines arising out of them. In the latter case, if all the small spines are reckoned in, more than three spines in each group can be counted on the front border and more than four on each side. It is convenient to consider these insects as belonging to this section.

207. Dactylispa multifida, *Gestro.*

Hispa multifida, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 263.

Body oblong, shining, black; the head with the front ferruginous yellow; the antennæ fusco-ferruginous, with the two basal joints black; all the thoracic spines ferruginous with the apices blackish; the underside shining and pitch-black, the legs and abdomen yellow.

Prothorax strongly and closely punctate and with very fine white hairs; in some specimens there is a small longitudinal ferruginous line in the middle or a trace of such a line. The anterior margin is armed with two sets of three spines joined at their base in one short stem, the two anterior spines being bent obliquely forwards, and the hind one longer and almost vertical; each lateral margin is furnished with four spines, of which the three anterior ones are almost equal in length and united at their base in one short stem, which is wide and depressed, while the

fourth spine is shorter and free. *Elytra* irregularly punctate-striate, with the inner interstices slightly raised; the spines on the disc are short, and thickly crowded at the base; the marginal spines are longer and alternate with others which are very minute, in fact, hardly visible with a lens.

Length, $3\frac{3}{4}$–$4\frac{1}{4}$ mm.

BURMA: Palon, Pegu, ix. 1887; Karen Hills (*L. Fea*).

Type in the Genoa Museum.

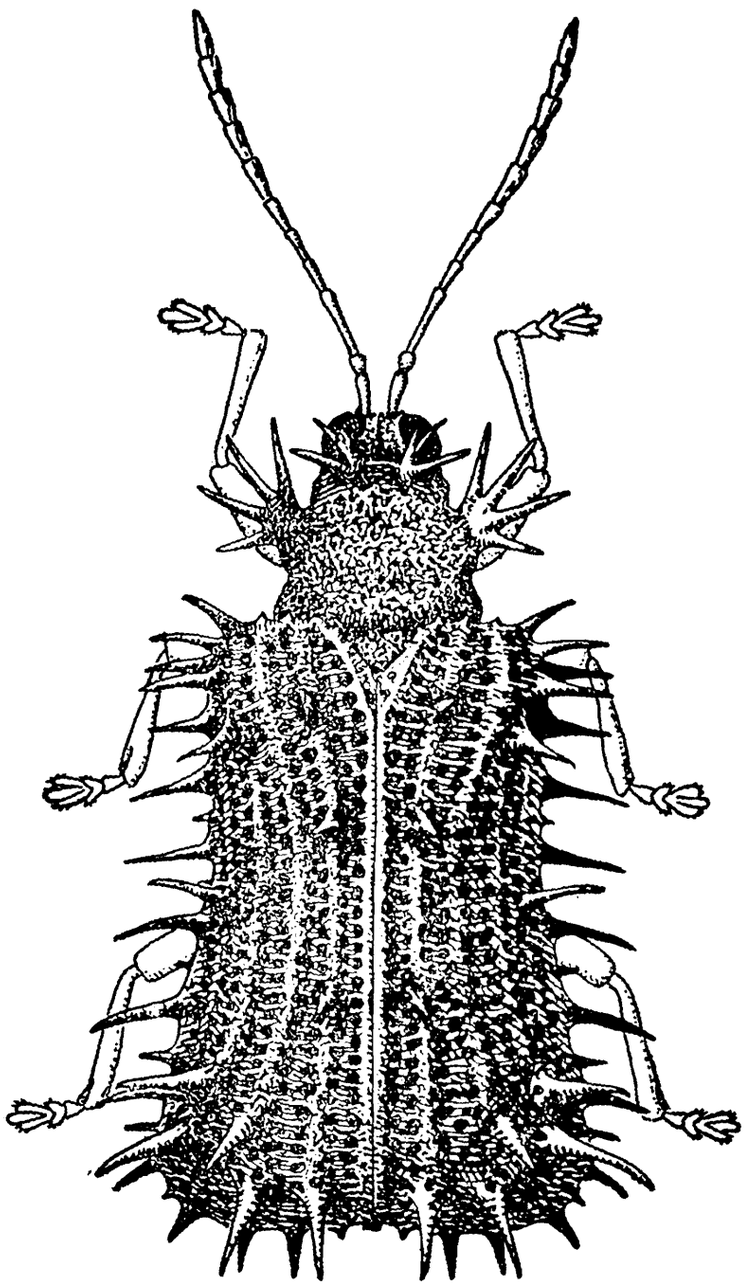


Fig. 65.—*Dactylispa parbatya*, Maulik.

208. **Dactylispa parbatya**, nom. nov.

Dactylispa xanthopus, Maulik (*nec* Gestro), Ann. Mag. Nat. Hist. (9) i, Jan. 1918, p. 70.

Body elongate, with a slight constriction in the middle. Colour

shining black, especially on the elytra; the mouth-parts, antennæ, abdominal segments and legs yellow.

Head rugose, with a longitudinal cleft in the middle; the mouth-parts are yellow; viewed from below there is a ridge along the middle of the interocular space. The antennæ are slender, their length being about two-thirds that of the body; the first joint is almost as long as the third, the second much smaller, the fourth, fifth and sixth equal, the seventh to eleventh slightly thicker, more hairy and darker. *Prothorax* quadrate, with two transverse shallow depressions, coarsely and roughly punctate, often with whitish hairs, and sometimes with a longitudinal impression along the middle. The arrangement of the spines and their variation have been discussed below; in the accompanying figure the spines of the front margin are shown diagrammatically and not in their precise positions. *Scutellum* triangular, with the apex rounded; the surface is subnitid and granulate. *Elytra* constricted in the middle, punctate-striate, the punctures being large, deep, and crowded together; owing to the spines on the elytra the number of rows of punctures cannot be accurately counted. On each side of the scutellum there is a short row of three or four minute spines; the humerus is raised, and along the raised portion there are four long spines; besides these, on the disc of each elytron there are about nine or ten moderately long spines. The margin of each elytron has about eleven long spines, and very small ones at the apex, there being very minute spines between the long ones. *Underside* smooth, shining, impunctate. The claw-joint projects beyond the third joint of the tarsus.

Length, $3\frac{3}{4}$–$4\frac{1}{2}$ mm.

UNITED PROVINCES: W Almora (*H. G. Champion*). SIKKIM: Jalapahar, Darjiling (*Atkinson*).

Type in the Indian Museum; cotypes in the British and Genoa Museums.

Variation in the Spines on the Front Margin (fig. 66, *1-4*).—Normally there is a pair of triple spines, the distance between them being as usual in the genus. The spines are erect; the first (commencing from the front) is always an appendix to the second, arising from its front side either near the base (fig. *2*), or a little above (fig. *3*), and it may be quite small or may attain the length of a normally developed spine (fig. *4*), but it is always smaller than the second spine. The latter, together with the first, is slightly inclined forward. The third is almost vertical and the longest. The first spine may be entirely absent in some cases (fig. *1*). Occasionally in the same individual I have observed that of the pair of frontal spines one consists of two spines and the other three. There is no correspondence between the number of the frontal spines and the lateral ones. Each of the frontal pair may consist of two (fig. *1*) or three, while the lateral group may be composed of four, three, or even five.

Variation in the Lateral Group of Spines (fig. 66, *5–7*).—The usual number is four; but they may be three or five, or even two, as Dr. Gestro has already pointed out. The spines are slightly inclined outwardly to the vertical line; the front one is smaller than the second, which is inclined to be the longest and is sometimes a little curved. The third is slightly shorter than the second. The fourth is always shorter than the others; it is sometimes quite close to the third, but occasionally it may be considered as standing apart (fig. *7*). For purposes of classification I should consider this group as consisting of four spines having a common broad base.

In 1918 (*l. c.*) I published a note in which I attempted to establish that the type specimen of *D. xanthopus*, Gestro, was not typical of the species but only an aberration, by showing the variation in the prothoracic spines. Having now obtained more material from the same locality, I find that *D. xanthopus* normally

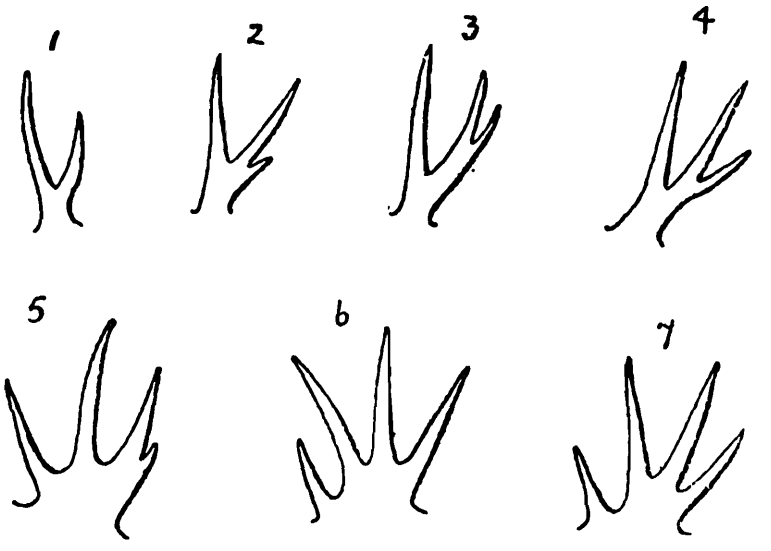


Fig. 66.—Variations in the prothoracic spines of *Dactylispa parbatya*: *1–4*, spines on the front margin; *5–7*, lateral spines.

possesses two pairs of spines on the front margin and a group of three on each side of the prothorax. The description then published is consequently that of the insect which I now call *D. parbatya*. The variations described, nevertheless, hold good; but instead of being those of *D. xanthopus*, they are of *D. parbatya*.

209. **Dactylispa humeralis**, *Ws.*

Dactylispa humeralis, Weise, Deut. Ent. Zeits. 1905, p. 120.

Body oblong, slightly constricted in the middle. Colour fulvous; the base and apex of the antennæ ferruginous, the third to sixth joints fulvous; the disc of prothorax fuscous, all the spines yellow; the elytra ferruginous, the dorsal spines black, the marginal ones yellow, except a few black ones at the external apical angles; the sternum black, the abdomen blackish, the legs yellowish brown.

Head with a deep longitudinal groove in the middle of the interocular space. The antennæ are long and slender and covered with scattered hairs; the third to sixth joints are slender, the seventh to eleventh a little thicker than the preceding joints, the third the longest, the first the thickest, and the second small and rounded. *Prothorax* as long as broad, with two groups of triple spines on the front border, the hind one in each group being single and the anterior two short and standing on a common stalk, which is rather long. On each side of the prothorax there is a group of four spines having a common base; the hind one is single, the next longer, also single and sometimes appendiculate, and the two anterior spines stand on a common long stalk. The disc has two transverse shallow depressions and is rugosely punctate and with scattered hairs; in the middle there is a faint longitudinal impression. *Scutellum* triangular, granulate. *Elytra* with scattered erect hairs, punctate-striate, the punctures being rounded and close together, the alternate interstices (*i. e.*, those on which the discal spines stand) raised and lighter in colour; behind the scutellum the suture is depressed for a little distance, and then raised, and on each side of the scutellum a short interstice is also raised. The humerus is elevated and armed with about six strong black spines, the basal one being the smallest and the following ones of gradually increasing lengths; the marginal spines are long, the apical ones shorter.

Length, 4 mm.

MADRAS: Nilgiri Hills (*Sir G. F. Hampson*, *H. L. Andrewes*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

The colour of the elytra varies from almost black to a light brown, but the raised interstices are always light. The dorsal spines are always black; the humerus and the external apical margins are black in the lighter specimens.

210. **Dactylispa chaturanga**, sp. nov.

Body oblong. Colour yellow-brown, a little darker on the elytra; the antennæ reddish brown with the two basal joints darker; the pronotum with two ill-defined black patches, and all the spines yellow with the extreme tips black; the discal spines on the elytra all black.

Head with a deep longitudinal sulcation. The antennæ are comparatively short; the basal joint is large and thick, the second small and rounded, the third to sixth joints subequal in length, the remaining joints almost equal, the seventh may be a little longer; the five apical joints are more pubescent. *Prothorax* transversely depressed along the basal margin, coarsely and closely punctate, with a very small smooth area in the middle. On the front border there are two groups of triple spines, the first inclined forwards and having a common stem with the second; the third being the longest and almost vertical; of the

four lateral spines, the first three are almost equal and arise singly from a common broad base, the fourth spine being smaller and standing singly but very close to the first three. *Scutellum* broad, triangular, with the apex very broadly rounded; the surface is red-brown and granulate. *Elytra* punctate-striate, the punctures being large, coarse and close together; the interstices are raised. The humerus is also raised and bears four spines; on the disc of each elytron there are about seventeen spines, including those of the humerus, and besides these there may be three or four very small ones; on the front margin and the scutellar interstice there are about five small spines. From the humeral to the sutural

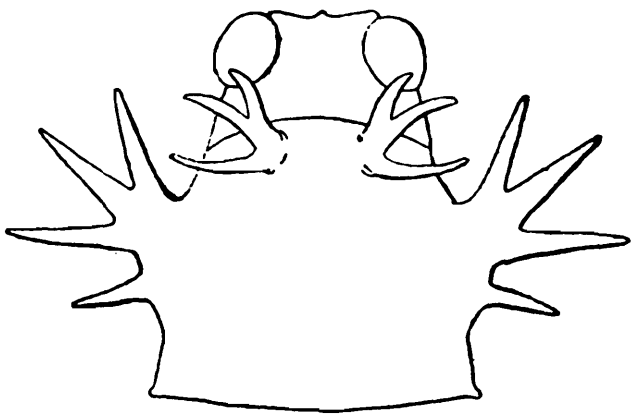


Fig. 67.—Head and prothorax of *Dactylispa chaturanga*, Maulik.

angle there are eighteen spines, including the minute ones also, all of them being yellow with the extreme tips black, except four at the external apical angle which are black; the apicals are extremely reduced. In between the marginal spines there occur minute spinules which are not included in the number given for the marginal spines. *Underside*: the claw-joint projects beyond the bilobed joint; the claws are strong.

Length, about 5 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection; cotype in British Museum.

Described from two examples.

Two specimens from Moneit, Burma (*Doherty*) are much darker in colour, almost black, the comparatively lighter parts being dark red-brown. The disc of the prothorax and the spines are black or dark red-brown, and there is also a little variation in the coarse punctures of the surface. The spines appear to be slightly longer. The legs and the abdominal segments are yellowish brown.

211. **Dactylispa confluens**, *Baly*.

Hispa confluens, Baly, Ann. Soc. Ent. France, 1889 (1890), p. 490.
Triplispa confluens, Weise, Deut. Ent. Zeits. 1897, p. 136.

Body oblong. Colour pale fulvous, shining; the pronotum usually with two black patches; the elytra with variable confluent

black patches, and the spines either black or brown; the underside yellowish brown, the legs paler.

Head with a longitudinal groove down the middle. The antennæ have the same thickness throughout, and are slightly covered with hairs; the first joint is the longest and thickest, the third joint almost equal to the fourth, and the other joints are almost equal to each other. *Prothorax* almost as long as broad, with the cylindrical front portion armed with two groups of triple spines; on each side there is a group of three flattish spines having a common base, the front two being large and the third much smaller; in the specimen before me there is a minute spine behind the group of triple spines. The surface is rough and punctate, with a transverse basal impression, and a small circular depression on each side of the impressed middle line, these depressions being usually black; viewed laterally the sides are excavated. *Scutellum* quadrate, with the base broader than the apex, and with a circular depressed area on the apical half; the surface is granulate. *Elytra* punctate-striate, the punctures being small, round and quite separate from each other. On each elytron there are about twenty-two large and small spines, the latter being very minute; the lateral margin is slightly expanded and has about twelve large flattish spines, with some minute ones between them, on the apical margin the spines are extremely minute; in the above numbers the minute spines have not been included.

Length, 5 mm.

BURMA: Shwegyin. INDO-CHINA: Mytho.

Type in M. Fleutiaux' collection.

The shape of the lateral spines of the prothorax, the expanded lateral margins of the elytra, and the flattish appearance of the marginal spines recall *D. vestita*, Maulik.

212. **Dactylispa kantakita**, sp. nov.

Body oblong, the sides parallel. Colour yellow; the prothorax with two ill-defined longitudinal black patches, and the spines with brownish tips. The marginal spines of the elytra yellow with brown tips, except one at the apical external angle of the elytra, which is black; the discal spines black.

Head with a dorsal row of silvery hairs round each eye; the interocular space is somewhat depressed, rough, slightly hairy and with a longitudinal groove in the middle. The specimen before me is without antennæ, except the first joint, which is large and thick and very dark brown. *Prothorax* broader than long, with a transverse basal depression and a fainter one near the front border, the middle portion being transversely convex; the surface is coarsely and closely punctate and sparsely covered with hair, with a faint longitudinal impression down the middle. On the front border there are two groups of triple spines; the first and second spine have a common stem which is directed forwards,

the first being much smaller than the second, and the third is almost vertical and may be appendiculate. Each side has a group of four spines (or five if the appendix of the middle spine is counted), the first and second have a common long stem, the former being the smaller and forming an appendix to the latter, the third is slightly longer than others and appendiculate, and the hind one may also be appendiculate; in the specimen before me the fourth spine on the right side is appendiculate, while that on the left is not. *Scutellum* triangular, with the apex rounded and the surface granular. *Elytra* punctate-striate, the punctures being large, subquadrate and contiguous, and each bearing an erect hair; the interstices are raised. The suture is raised

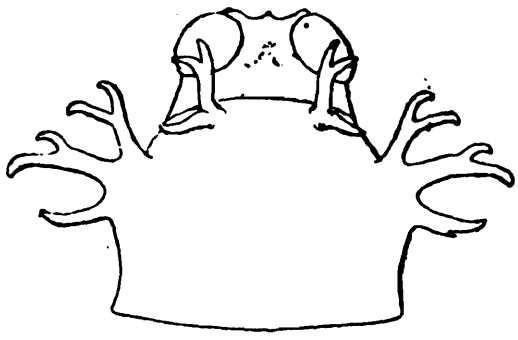


Fig. 68.—Head and prothorax of *Dactylispa kantakita*, Maulik.

as usual and with a series of very minute spinules, except two or three near the base, which are longer; the humerus is raised and bears four strong spines curved backwards; on the disc of each elytron there are about fifteen spines including the humeral ones, all of which are black and comparatively small, some of those at the base being bent backwards; there are also two or three very small yellow spinules on the disc and four on the scutellar interstice, two of which are black; the marginal spines are longer, flattish, and curved backwards; on the apical margin the spines gradually become smaller. *Underside* entirely yellow. The claws are strong; the claw-joint projects beyond the bilobed joint.

Length, 5 mm.

MADRAS: Karkurghat, Nilgiri Hills, 2000 ft. (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection.

Described from one specimen.

213. **Dactylispa tarusama**, sp. nov.

Body oblong, with the sides parallel. Colour yellow-brown, except the dorsal spines of the elytra and the sternum, which are black; the prothoracic spines with the tips black.

Head not quite smooth and with a deep longitudinal sulcation. The antennæ are yellow-brown, with the basal joint slightly darker; the latter joint is long and the stoutest, the second small and rounded, the third to sixth slender, the third very long and a little shorter than fourth and fifth put together, the fourth to sixth subequal, the seventh slightly thicker and longer than each of the following joints, the last joint bluntly pointed; the

whole antenna is hairy, more thickly so on the apical joints. *Prothorax* yellow-brown, with the disc darker; the basal margin is raised, and the disc is very coarsely punctate with a deep longitudinal sulcation in middle, each puncture having an erect hair. On the front border there are two groups of three spines on a common stem, the first and third spines forming a rather open acute angle; from near the base of the first spine rises the middle one, in other words, the first and second spines may be said to have a common stem. Each side has a group of four spines; the first and second have a common stem, and the third, which is very small, branches off the posterior side of the second at a higher point, the first and second being appendiculate; the fourth spine is smaller and separate. *Scutellum* broad, triangular, with the apex broadly rounded, dark brown, and granulate. *Elytra* punctate-striate, the punctures being large, subquadrate and contiguous, with an erect hair in each; the interstices are raised. The suture is raised and bears a series of minute spinules; the humerus is also raised and has three strong black spines and one small yellow one, there being four or five small spinules on the front margin

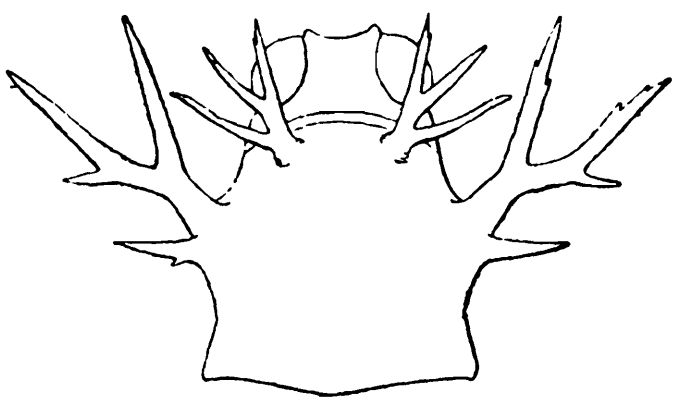


Fig. 69.—Head and prothorax of *Dactylispa tarusama*, Maulik.

and scutellar interstice. On the disc of each elytron there are about fourteen rather long and pointed black spines, including the humerals, the bases of these spines being also black. The marginal spines of each elytron are, on an average, of the same length as the dorsals; from the humeral to the sutural angle there are about fifteen spines of varying lengths; two at the humeral angle are black, the following five yellow with black tips, four large ones at the external apical angle black, and the apicals, which are much reduced in size, are yellow with black tips. *Underside* yellow, except the sternum, which is black. The claw-joint projects beyond the bilobed joint.

Length, 5 mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection.

Described from one example.

214. **Dactylispa insignita**, *Chap.*

Hispa insignita, Chapuis, Ann. Soc. Ent. Belg. xx, 1877, p. 54.

Body oblong, subnitid. Colour yellow-cinnamon; the pronotum with two black patches and the tips and teeth of the spines fuscous; the elytra with the discal spines blackish, the marginals yellow, except three or four; the sides of the sternum with black stripes.

Head: the antennæ are fine, scarcely shorter than the body; the two basal and five apical joints are fuscous. *Prothorax* almost twice as broad as long, with two transverse depressions; the two black patches are densely punctate, and there is a longitudinal median impressed line. The anterior margin has two pairs of spines, the front spine being bifurcate near the apex, the posterior one bidenticulate; of the three lateral spines the anterior two are longer and bidenticulate, the third being small and without any teeth. *Elytra* oblong, moderately punctate-striate, sparsely hairy, and with long spines.

Length, 3½ mm.

CEYLON.

Type in the Brussels Museum.

215. **Dactylispa brevicuspis**, *Gestro.*

Hispa brevicuspis, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 253.

Body oblong. Colour yellowish brown; the disc of the prothorax black, except the margins, this black area sometimes greatly reduced; a broad humeral area and a narrow ill-defined one at the apex of the elytra pitch-black; the underside and legs pale yellow, the sides of the sternum pitch-black, and most of the dorsal spines black.

Head with the interocular space depressed, and a row of silvery hairs on the dorsal side of each eye. The antennæ are about two-thirds the length of the body and have the first two joints rather darker. *Prothorax* more or less cylindrical in front, and there armed with two pairs of spines which are very close to each other; each of the spines is bifurcate near the apex, the anterior spine being obliquely directed forwards, and the posterior one almost vertical, with a small spinule at about its middle; of the three lateral spines the anterior two have a common base and are appendiculate at the apex and unequal in length, the front one being the smaller; the third spine is small and stands free of the other two. The disc is transverse, rugosely punctate, and with scattered silvery hairs, and two shallow, transverse depressions. *Scutellum* granulate, yellow-brown, with the apex slightly darker, triangular, with apex rounded. *Elytra* punctate-striate, the punctures being large, more or less rounded and contiguous, and containing silvery erect hairs. There are about thirty-eight spines on each elytron; the marginal spines are close

to one another and are yellow, except a few below the humerus and one or two situated at the external angle, which are black; at the apex the spines are shorter. *Underside*: the abdominal sternites slightly punctate in the middle and with short silvery hairs.

Length, 6 mm.

BURMA: Karen Hills (*L. Fea*); Paungde (*G. C. Corbett*).

Type in the Genoa Museum.

216. **Dactylispa anula**, sp. nov.

Body elongate-oblong; yellow; the eyes, two broad longitudinal bands on the pronotum, the discal spines of the elytra and two marginal spines on each side at the external apical angle, black; the mesosternal and metasternal episterna also black.

Head broad. The eyes are strongly convex so that the space between them is narrow, being narrowest in the middle, the width of this portion being nearly half the distance between the two groups of spines on the front border of the prothorax; behind the eyes the collar is constricted. The antennæ are slender and not thickened apically, a little over half the length of the body, and covered with fine hairs, the first two joints being less so; the first joint is the longest and thickest, the second small and rounded, the third longer than the fourth, the fourth to seventh almost equal, each of the following three joints shorter than the preceding ones, the last a little longer. *Prothorax* with the front part cylindrical, almost as broad as long; on the front border there are two groups of spines, not very close to each other; the two principal spines of each group enclose an acute angle, the front one being directed upwards and forwards and bifurcated at its apex, the posterior spine being vertical, with a small spinule issuing from its upper part on the front side. Each side has a group of three principal spines, the front two having a common base, the third, a much smaller one, being free; the foremost spine is bidenticulate, and the second has one larger spinule and one smaller arising from its sides; all these spines are pale yellow with the extreme tips black. The pronotum is coarsely punctate, more deeply coloured than the rest of the body, and sparsely covered with whitish hairs; in front of the raised base is a transverse depression; longitudinally along the middle is a raised impunctate ridge, on each side of which is a broad black band which covers a good deal of the disc. *Scutellum* yellow, with the lateral corners at the base black, triangular, with the apex rounded, and the surface finely granulate. *Elytra* punctate-striate, the punctures being large, round, and deeply indented; the whole surface is sparsely covered with erect whitish hairs; on each elytron, on the front edge, there are three or four minute spines, just behind which and staining one or two of them is a pitch-black longitudinal patch; besides these there are fifteen more spines, which are black, except two on the humeral ridge; from the

humeral to the sutural angle each margin has about twenty or twenty-one yellow spines with black tips, except two at the external apical angle which are completely black; of these eight or nine on the apical margin are much shorter than the marginals and gradually diminish in length. *Underside* uniformly pale yellow except the two pieces mentioned above, impunctate; the abdominal segments sparsely hairy.

Length, 5 mm.

ASSAM: Patkai Hills (*Doherty*).

Type in the British Museum.

Described from one example.

217 **Dactylispa pradhana**, sp. nov.

Body broad, large, oblong. Upper side red-brown; the eyes, two rather oblique patches on the pronotum, the discal spines of the elytra and three marginal ones at the external apical angle, black; the underside yellow, the mesosternal and metasternal episterna black.

Head broad, the space between the eyes almost as broad as the distance between the two groups of spines on the front border of the prothorax; just behind the eyes the collar is constricted. The antennæ are about half the length of the body, covered with whitish hairs, the first two joints being less so; the first joint is the longest and thickest, the second small and rounded, the third to fifth almost equal in length; the following joints are of similar lengths, more pubescent and not thicker. *Prothorax* cylindrical in front, almost as long as broad. On the front border there are two pairs of principal spines, more or less distant from each other; the spines of each pair have a common base, the front one, which is a little curved inwardly, is bifurcate near the apex, the posterior one being almost vertical, equal to the front one, and having a spinule near the apex on the front side. Each side has a group of three principal spines, the first two of which have a common base, the third, a much smaller one, being free but contiguous to the base of the other two; the foremost spine has a small spinule near its apex, the middle one bearing a larger spinule at a lower point. The disc has two transverse depressions, one in front and the other behind the middle, being coarsely punctate and sparsely hairy. *Scutellum* reddish with a suffusion of black, large, triangular, with the apex rounded and the surface granular. *Elytra* punctate-striate, the punctures being round, deeply indented, and close to each other; the whole surface is sparsely covered with erect whitish hairs. On the disc of each elytron there are about thirteen large black spines, two smaller yellow ones on the humeral ridge, and about six minute ones on the front and scutellar ridges; the discal spines have broad bases, particularly two in the middle; the base of one of these is laterally compressed and formed of several ridges radiating from the spine, the spaces between them being white and transparent. The humeral ridge and an area

below it is black. From the humeral to the sutural angle the margin bears about eighteen spines, the lateral ones being long and yellow, three below the humerus dark red-brown, and three at the external apical angle black; the apical spines, about eight in number, are minute and gradually diminish in length. *Underside* uniformly yellow, except the two pieces noted above, and sparsely covered with whitish hairs.

Length, 6½ mm.

SIKKIM: Gopaldhara, Rungbong Valley (*W. K. Webb*).

Type in Mr. H. E. Andrewes' collection.

Described from one example.

218. **Dactylispa kunala**, sp. nov.

Body oblong; yellow-brown; the eyes, part of the collar, the discal spines of the elytra, two small round patches on the pronotum, three marginal spines at the external apical angle of the elytron, and the meso- and metasterna (middle excepted), black.

Head broad, the interocular space as broad as the distance between the two groups of spines on the front border of the prothorax, and sparsely covered with silvery hairs. The antennæ are as long as half the body, and covered with hairs, especially on the apical joints; the first joint is the thickest, the second small and rounded, the third the longest, the fourth to sixth subequal in length; from the seventh the joints are slightly thickened and darker, the seventh being equal to the sixth and longer than each of the following joints. *Prothorax* cylindrical and blackish in front, as long as broad. On the front border there are two pairs of spines, distant from each other; the spines of each pair have a common short stem, the front spine, which is directed obliquely fowards, being bifurcated at the apex. Each side has a group of three spines, the front two having a common stem, the third (a very small one) being free; the middle spine has a small spinule issuing from its posterior edge. All the prothoracic spines are more or less slender, not long, and yellow with black tips. The disc is coarsely punctate, with a longitudinal median channel, and with two transverse shallow depressions from side to side, one in front and the other behind the middle, the whole surface being sparsely covered with whitish hairs. *Scutellum* yellow with the two lateral corners at the base black, triangular, with the apex rounded and the surface finely granulate. *Elytra* punctate-striate, the punctures being large, round, and deeply indented. On each elytron there are about fifteen or sixteen black spines which are not very long, besides a few minute ones on the disc, as well as along the front and scutellar edge, one or two of those on the latter being black; the bases of the larger black spines on the disc are of the ordinary type; from the humeral to the sutural angle each lateral margin has about eleven or twelve spines, three at the external apical angle being black, the rest yellow with black tips;

the three or four spines on the apical margin are much smaller than the lateral ones and diminish in length. *Underside* yellow, with the sides of the sternum black.

BOMBAY: Castle Rock, North Kanara, x. 1916 (*S. Kemp*).

Type in the Indian Museum.

Described from one example.

219. **Dactylispa nigripennis**, *Mots.*

Hispa nigripennis, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 239.

Larger than *H. inermis*. Colour reddish testaceous, with the elytra shining greyish black. The base of the antennæ, posterior part of the head, two oblique patches on the middle of the pronotum and the extremity of the spines behind are of a more or less blackish colour. The extremity of the elytra and three longitudinal patches placed on each side of the suture are red. The spines are long. The antennæ are slender, the joints elongate and without spines, the first joint as long as the third, the second half as long and oval.

INDIA.

The above is a translation from Motshulsky's description in French. I have not seen the species. Weise places it in *Dactylispa*. Zoubkoff's species, *H. inermis*, is included at present in the genus *Acmenychus* (see p. 156).

220. **Dactylispa nigromaculata**, *Mots.*

Hispa nigromaculata, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 239.

A little smaller than *H. testacea*. Colour reddish testaceous, with black patches on the elytra, which are shining. The base of the antennæ, the posterior part of the head, the middle of the prothorax, the scutellum, and the underside of the body are more or less blackish brown. The spines are long, those of the prothorax and of the lateral border of the elytra on the underside being testaceous, and the posterior elytral spines black on the upper side. The antennæ are slender, the joints elongate, the third of the same length as the first in the male (?), and a little shorter in the female. The intermediate tibiæ are nearly straight and not dilated.

BURMA.

The above is a translation from Motshulsky's description in French. I have not seen the species, which is placed in *Dactylispa* by Weise. *Hispa testacea* is a South European species.

221. **Dactylispa pallidipennis**, *Mots.*

Hispa pallidipennis, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 240.

A little larger than *H. testacea* and more elongate than *H. nigro-*

maculata, to which it is similar in coloration, but the elytra are pale testaceous, and the black patches are smaller. The spines are long, the prothoracic ones pale brown. The prothorax is opaque, punctate, and pubescent on the borders; in the middle there is a shining and convex quadranglar area. The eyes are black. The antennæ are slender, with the joints elongate; the first joint is longer than the third, the second half as long, oval. The intermediate legs are moderately dilated and a little curved. It is remarkable for a series of spines on each side of the scutellum.

INDIA OR.

The above is a translation from Motshulsky's description in French. I have not seen the species, which Weise includes in *Dactylispa*.

222. Dactylispa fulvipes, *Mots.*

Hispa fulvipes, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 238; Gestro, Bull. Soc. Ent. Ital. 1902, p. 56.

In form and size it is similar to *H. ceylonica*. It is black, the tarsi, the prothoracic spines, and some ill-defined patches on the elytra being reddish testaceous. The first joint of the antennæ is elongate and without a spine; the other joints are missing in the example I possess.

CEYLON: Nuwara Eliya (*Nietner*).

The above is a translation of Motshulsky's description in French. I have not seen the species, which Weise places in *Dactylispa*. The species *ceylonica* belongs to the genus *Hispella* (see p. 156).

Genus **HISPA**, *L.*

Hispa, Linnæus, Syst. Nat. ed. xii, 1767, p. 603; Chapuis, Gen. Col. xi, 1875, p. 334; Weise, Ins. Deutschl. vi, 1893, p. 1061; id., Deut. Ent. Zeits. 1897, p. 137.

Dicladispa, Gestro, Ann. Mus. Civ. Genova, 1897, p. 81; id., op. cit. 1899, p. 329.

GENOTYPE, *Hispa testacea*, L. (South Europe, North Africa, Asia Minor).

The insects of this genus are differentiated from those of *Dactylispa* by the absence of any spine on the front border of the prothorax. Two characters, namely, the absence of a dorsal spine on any joint of the antennæ and the two equal claws of each tarsus, separate this genus from all other Indian genera.

Head constricted behind the eyes, the collar being cylindrical, smooth, shining and impunctate. The eyes are strongly convex, the interocular space being also convex with a deep longitudinal sulcation in the middle. The antennæ are 11-jointed; the first joint is large and thickened, the second small and rather oblong,

the third to sixth more slender and subequal in length, the third being the longest, the seventh to eleventh thicker and more pubescent forming a very elongate club. *Prothorax* quadrate, with the front part cylindrical; the upper surface is punctate and rough, sometimes having smooth areas and sometimes also hairy. The sides are always spiny, the spines being generally grouped together; in some cases there may be a small spine posterior to the group. *Scutellum* small, quadrate, and generally rough and depressed. *Elytra* always broader at the base than the prothorax, punctate-striate, sparsely hairy or glabrous. On each elytron there are about nine irregular rows of punctures, the punctures generally being large, subquadrate, and close together; there are spines both on the disc and along the margin. *Underside* often of the same colour as the upper side. The legs are generally long and slender, the femora being a little thickened in the middle, and the tibiæ at the apical end; the tarsi are long, and the lobes of the claw-joint are long and slender.

Range. Europe, Africa, India, Burma, Indo-China, and the Indo-Malay region.

Key to the Species.

1.	Each side of the prothorax normally with ten spines standing on a common stem	*dama*, Chap., p. 253.
1′.	Each side of the prothorax with less than ten spines	2.
2.	Each side of the prothorax with seven spines having a common stem. Colour brown; body more hairy than in other species	*pallescens*, Guérin, [p. 254.
2′	Each side of the prothorax with five spines, the anterior four of which have a common base, the fifth being smaller and separate	3.
3.	Upper surface of the prothorax with an almost circular flattened area in the middle	*ærea*, Gestro, p. 253.
3′.	Upper surface of the prothorax with no such well-defined area	4.
4.	Each of the four anterior prothoracic spines with a common base is longer than that in front of it ..	*megacantha*, Gestro,
5.	The four anterior spines not so arranged.	6. [p. 252.
6.	These spines are straight and short, hardly longer than the two basal joints of the antennæ.	*armigera*, Oliv., p. 249.
6′	These spines are curved and long, much longer than the two basal joints of the antennæ. .	*birendra*, sp. n., p. 250.

Owing to the insufficiency of Motshulsky's description of *H. cyanipennis*, I have not included it in this key.

223. Hispa armigera, *Oliv.*

Hispa armigera, Olivier, Ent. vi, 1808, p. 763, pl. i, f. 8; Weise, Deut. Ent. Zeits. 1904, p. 457; Maulik, Rec. Ind. Mus. 1915, p. 379.

Hispa œnescens, Baly, Journ. Asiat. Soc. Bengal, 1887, p. 415; Gestro, Ann. Mus. Civ. Genova, 1890, p. 248; id., op. cit. 1897, p. 82; Cotes, Ind. Mus. Notes, 1889, p. 37.

Body oblong, shining, blue-black; antennæ and legs dark brown to almost black; the colour of the legs varies somewhat.

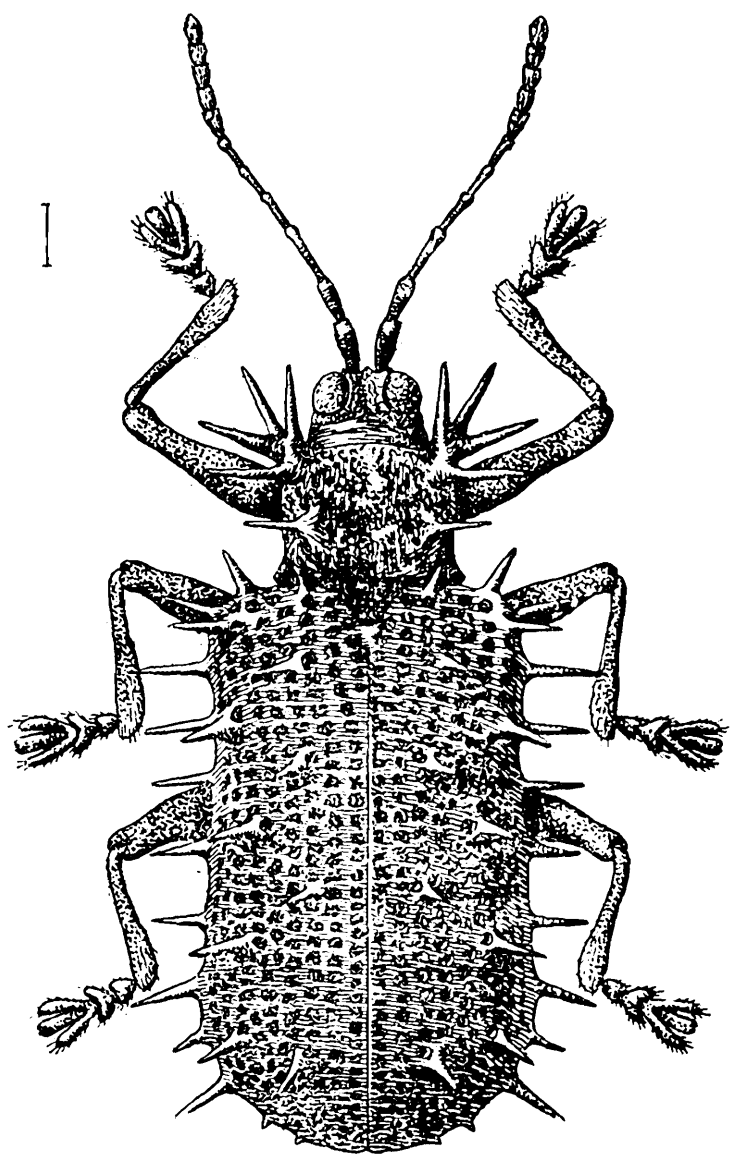


Fig. 70.—*Hispa armigera*, Oliv.

Head deeply sulcate longitudinally, the area on either side raised and rugose. The antennæ slender, slightly thickened towards the apex; the first joint armed at its apex beneath with a short tooth, the third slender and the longest. *Prothorax* rather broader than long, subcylindrical, flattened on the disc, the surface of which is coarsely rugose-punctate, a

longitudinal vitta and a slightly concave space on either side behind the middle nearly free from punctures; in details the surface structure varies a good deal. The sides armed before the middle with four stout spines united into a single stem at their base; behind the middle is a small single spine. *Scutellum* quadrate, slightly narrowed towards the apex, smooth, shining, and finely granulose. *Elytra* oblong, strongly punctate-striate, armed with a number of strong erect spines, those on the disc being smaller than the marginal ones, which are more or less alternately long and short; on the whole, the number of spines is comparatively less than in other species of the genus, the elytra appearing to be sparsely set with them. *Underside* smooth, shining, impunctate. Legs longish, sparsely scattered with white hairs; the femora thickened in the middle; the tarsi more thickly covered with hairs, broader at the apex than at the base, the claw-joint projecting beyond the third joint.

Length, 4½ mm.

MADRAS: Malabar district. BENGAL: Calcutta; Howrah; Midnapur; 24 Parganas; Goalbathan; Sarashat; Khulna; Darbhanga; Backergunge; Balighai, near Puri. NEPAL: Katamundu. ASSAM: Sibsagar. BURMA: Mandalay. SUMATRA: Siboga, Baligha, Pangherang-pisang, and Pedang (*teste Dr. Modigliani*).

Nothing is mentioned about the food-plant of this insect in Sumatra; in India it is a pest of the rice-plant.

224. **Hispa birendra**, sp. nov.

Body oblong; black, shining, with bronzy reflections on the elytra.

Head rough, with a faint longitudinal line in the middle. The eyes are convex, more so than in the other species. The first joint of the antennæ is pointed at the apex on the underside, the second joint much smaller and slightly rounded, the third the longest, the fourth, fifth, and sixth gradually becoming shorter successively. *Prothorax* on each side with a group of four long curved spines on a common base, posterior to which there is a short sharp spine. The anterior border is smooth and has a suggestion of being transversely striated; the upper surface is rough, with large pits, each of which contains a small hair. *Scutellum* triangular, granulate, with the apex rounded. *Elytra* with large spines, the lateral ones and the upright dorsal ones being equally long, those at the base and apical margin smaller; altogether there are about 25 or 26 spines on each elytron. The punctures are small and distant (a character not found in other species of the genus), each bearing a fine, erect hair. *Underside*: the claws are strong and the claw-joint projects beyond the third joint.

Length, 3½–4 mm.

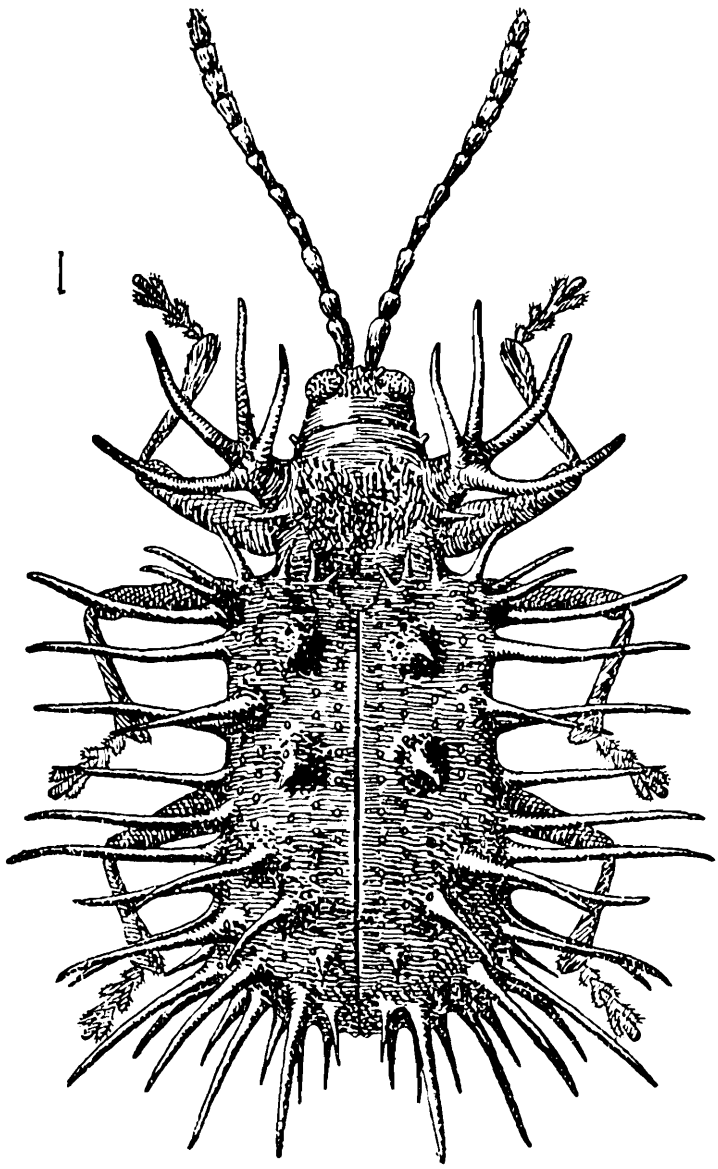


Fig. 71.—*Hispa birendra*, Maulik.

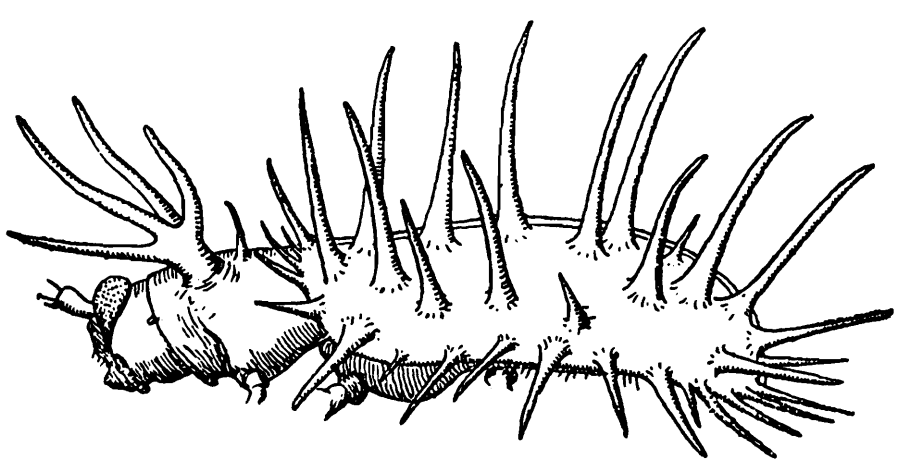


Fig. 72.—*Hispa birendra* (side view).

SIKKIM: Mungphu (*Atkinson*). ASSAM: Shillong (*F. W. Champion*—type).

Type in the British Museum.

Described from three examples.

225. **Hispa megacantha**, *Gestro*.

Hispa megacantha, Gestro, Ann. Mus. Civ. Genova, 1890, p. 249.

Body oblong, shining, black; elytra with a bronzy sheen.

Head with a deep longitudinal sulcation in the middle, on each side of which the surface is raised and rugose. Antennæ long,

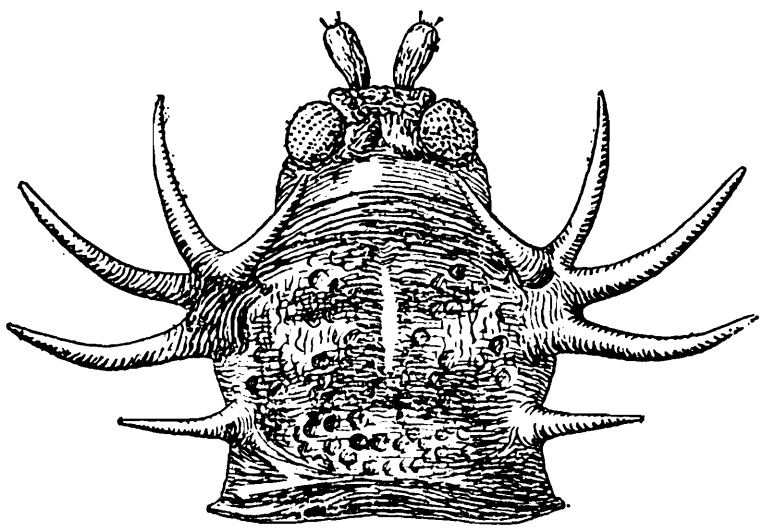


Fig. 73.—Head and prothorax of *Hispa megacantha*, Gestro.

slender; the first joint stout, slightly produced into an acute point on the underside; the second shorter but stouter than the third, which is the longest; the fourth to sixth subequal in length, the seventh to eleventh smaller and more pubescent. *Prothorax* as long as broad, the front margin rounded. On each side there are five spines, the anterior four being large and standing on a common base; each of these spines is longer than that in front of it; the fifth spine is small, sharp, and situated in front of the base. The upper surface is rugose, with a transverse shallow depression and a longitudinal one down the middle. *Scutellum* triangular, finely granulate, with apex rounded. *Elytra* shining, punctate-striate, and with numerous spines both along the margin and on the disc. *Underside* black, not so shiny as the elytra. The legs long, the femora thickened in the middle; the tarsi elongate, but much broader at the apex than at the base; the claw-joint does not project beyond the third joint.

Length, $3\frac{2}{3}$–4 mm.

BURMA: Keba district, Karen Hills, 3000–3700 ft. (*L. Fea*). JAVA.

Type in the Genoa Museum.

226. Hispa ærea, *Gestro.*

Hispa ærea, Gestro, Ann. Mus. Civ. Genova, 1897, p. 125.
Hispa lulli, Weise, Deut. Ent. Zeits. 1897, p. 127, and 1905, p. 117.

Body small, oblong, black, shining; the antennæ, spines, and legs dark brown to black.

Head small, transverse, finely rugose, with a deep longitudinal sulcation in the middle. Antennæ nearly half the length of the body; the first joint large, produced into a sharp spine on the underside; the second small and rounded, the third the longest, the fourth to sixth gradually diminishing in length. *Prothorax* quadrate, more or less rounded in front and at the sides. Each side has five spines, the anterior four being large and standing on a common base, the fifth small and situated behind them. The upper surface is flattened in the middle, forming a more or less circular area which is finely granulose and impressed here and there with large shallow punctures. *Scutellum* much broader than long, semicircular in shape, opaque and finely granulose. *Elytra* covered with long brown spines, punctate-striate, but the

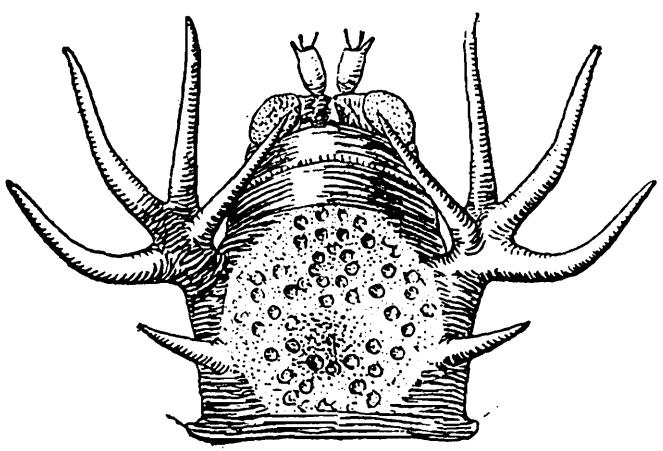


Fig. 74.—Head and prothorax of *Hispa ærea*, Gestro.

punctures are small and deep and do not form regular striæ. *Underside* black, shining. The legs long as compared with the size of the insect, the femora thickened in the middle; the tarsi elongate, the claw-joint projecting a little beyond the third joint.

Length, 3–3¼ mm.

BENGAL: Barway (*P. Cardon*). BOMBAY: N. Kanara (*T. R. D. Bell*); Belgaum, 2000 ft., iv. 1908 (Pusa coll.).

Type in the Brussels Museum; type of *lulli* in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

227. Hispa dama, *Chap.*

Hispa dama, Chapuis, Ann. Soc. Ent. Belg. xx, 1877, p. 52.
Hispa abdominalis, Baly, Ann. Mus. Civ. Genova, 1888, p. 664.

Body oblong, opaque, blue-black; abdomen red.

Head: front broad, opaque. The antennæ are more than half the length of the body, slender, slightly thickened towards the apex; the first joint is thick, the second much shorter, the third to sixth subequal in length, the seventh slightly longer than the third, if not equal in length. *Prothorax* near the middle of each lateral margin with a narrow plate or process, the edges of which are armed with nine long spines; in addition there is a tenth spine, which rises almost directly upwards from the inner part of the dorsal surface of the plate. The upper surface is opaque, finely granulose-rugose, impressed here and there with large shallow punctures and sparingly clothed with short adpressed scale-like white hairs; just in front of the basal margin is a faint transverse depression; a second, still less defined, runs across the middle disc. *Elytra* oblong, margined on the sides and strongly and coarsely punctured, the punctures arranged in longitudinal rows which are less regularly placed on the hinder

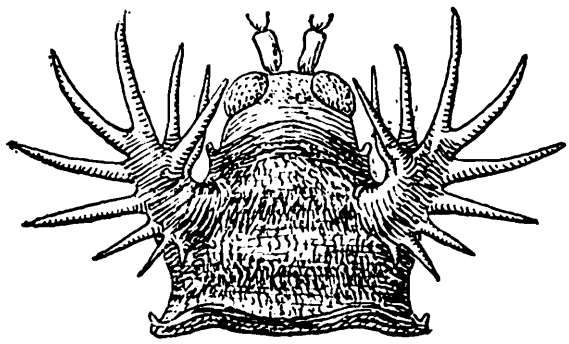


Fig. 75.—Head and prothorax of *Hispa dama*, Chapuis.

half of the outer disc. The disc of each elytron with three longitudinal rows of strong, acute spines (five in each); the marginal spines are alternately long and short.

INDIA. BURMA: Bhamo.

Type in the Brussels Museum; type of *abdominalis* in the Genoa Museum.

228. Hispa pallescens, *Guér.*

Hispa pallescens, Guérin, Rev. Zool. 1841, p. 13; ? Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 239.

Body oblong-oval, brown, subnitid, covered with long yellowish hairs; the apices of the thoracic spines and nearly the whole of the elytral spines black.

Head rugose, with a deep longitudinal sulcation down the middle, heavily clothed with long yellowish hairs. Antennæ shorter and more robust than is generally found in other species of the genus; the first joint the largest, the third longer than

the second, the six basal joints with scattered long erect yellowish hairs. *Prothorax* quadrate, slightly narrowed in front. Each side has a bunch of seven spines standing on the same base, the two posterior ones being generally smaller than others; sometimes these spines are malformed, two coalescing, or one missing, and so on. The upper surface is densely covered with long yellowish hairs, and with a shallow transverse depression in front of the base. *Scutellum* triangular, opaque and granulose, the edges bordered with black. *Elytra* subnitid, clothed with long erect yellowish hairs, punctate-striate, the punctures large and touching each other. Each elytron has on its upper surface about 22 to 25 spines, which are long at the sides and shorter at the apex. *Underside*: prosternum shining black; abdomen blackish in the middle, pale at the sides. The claw-joint of

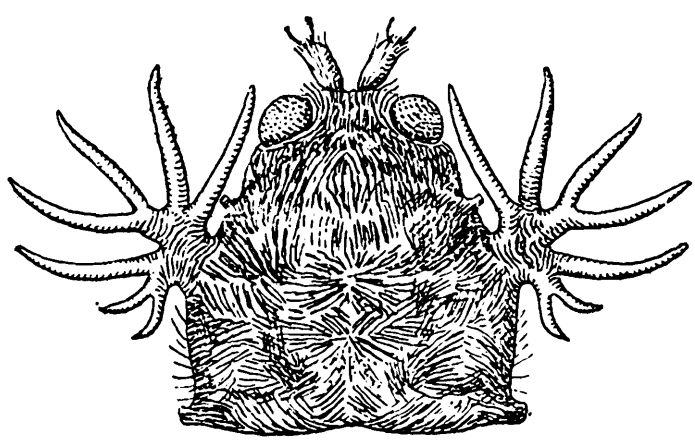


Fig. 76.—Head and prothorax of *Hispa pallescens*, Guérin.

the tarsi is the largest, its apex a little thickened and blackish, projecting much beyond the third, which is much smaller; the claws are strong and prominent.

Length, 4 mm.; breadth, 2 mm.

MADRAS: Pondicherry. CENTRAL PROVINCES: Nagpur, 5. viii. 1917 (*E. A. D'Abreu*).

Type not traced.

229. Hispa cyanipennis, *Mots.*

Hispa cyanipennis, Motshulsky, Schrenck's Reise Amur. ii, 1861, p. 238; Maulik, Rec. Ind. Mus. 1915, p. 380.

The following is translated from Motshulsky's original French description:—

"A little shorter than our *H. atra* and more compressed at the middle of the elytra, shining, black. Elytra dark steel-blue; legs red, more or less brown; antennæ slender, the joints

very elongate, without spines, the first and second a little thicker and oval; the third, fourth, and fifth very narrow and longer; the sixth narrow and little shorter than the second; prothorax rather smooth, without dorsal spines; elytra strongly punctate, with four spines in the middle; legs a little curved."

BURMA.

Type destroyed.

From the description this appears to me to be a distinct species, although Weise considers it to be the same as *armigera*, Oliv.; in my note given in the above reference I have shown that this view cannot be upheld.

Genus **PLATYPRIA**, *Guér.*

Platypria, Guérin, Rev. Zool. 1840, p. 139; Chapuis, Gen. Col. xi, 1875, p. 336; Gestro, Ann. Mus. Civ. Genova, 1890, p. 229, and 1897, p. 110, and 1905, p. 515.

GENOTYPE, *Platypria echidna*, Guér.

This is a natural genus, insects belonging to it being easily recognisable. They are generally oblong, but owing to the fact that each side of the prothorax is expanded into a lobe bearing spines and the lateral margin of the elytra is similarly expanded into two lobes, the insects have a quadrate appearance. The prothoracic and the elytral lobes are characteristic. Another important and distinguishing character of this genus is that there are nine joints to the antennæ, the last joint being formed by the fusion of three. In several species the fusion not being perfect the joints are more or less distinct.

Head: the clypeus is generally convex, hairy and long. The eyes are strongly convex. The first joint of the antennæ is long, the second much shorter, the third very long and sometimes the longest; each of the next five joints is shorter than the joint preceding it, or they are more or less equal to each other; the ninth or last joint, as has been said, is made up of three joints, and is therefore longer than others; the antenna is always of the same thickness throughout. *Prothorax* generally broader than long. The upper surface may be almost flat, or may have a transverse depression at the base; generally it is opaque and clothed with fine and longish hairs. Each side is expanded into a lobe bearing spines, the number of which varies, the front and hindmost spines being usually very short; the lobes bear several depressions with more or less hyaline centres. *Scutellum* generally triangular with the apex rounded, and the surface rough or with a depression. *Elytra* generally broader at the base than the prothorax, the humerus being prominent and bearing strong short spines. Generally the sculpturing of the elytra consists of a short scutellar row and about nine rows of punctures, the latter being as a rule

squarish and close together. The alternate interspaces are raised into costæ, there being two principal costæ, which are tuberculate; there is a series of minute spinules along the suture. Each side of the elytra is expanded into two lobes bearing spines; the first is at the base of the lateral margin, then follows an interval which is generally concave and has a spine in the middle; after this comes the second lobe, and finally the apical margin generally has spines that gradually diminish in length. The expanded portions of the lateral margin have on the surface depressions of various forms and sizes, which have hyaline centres.

Range. Indo-Malay Region and Africa.

Asymmetry in the arrangement of the spines has been frequently observed in this genus.

Key to the Species.

1.	The antennæ robust, hardly reaching beyond the scutellum.	2.
1′.	The antennæ fine, reaching much beyond the scutellum .. .	3.
2.	Antennæ nearly as long as the prothorax; the lateral lobe on each side of the prothorax uniformly rounded; the spines and tubercles on the elytra much lower.	*andrewesi*, Ws., p. 260.
2′	Antennæ a little longer than the prothorax; the lateral lobe on each side of the prothorax drawn forwards; the spines and tubercles of the elytra higher	*erinaceus*, F., p. 259.
3.	The anterior lateral lobe on each side of the elytra has six spines ..	4.
3′.	The anterior lateral lobe has five spines.	5.
4.	Some spines of the lateral lobe of the prothorax are appendiculate; the prothorax with two oblique fasciæ . .	*acanthion*, Gestro, p. 262.
4′.	The spines of the lateral lobe of the prothorax are not appendiculate; the fasciæ on the prothorax are not oblique.	6.
5.	The head is black .	*ericulus*, Gestro, p. 265.
5′.	The head is not black ..	*hystrix*, F., p. 264.
6.	Elytra not hairy, the punctures round and separated by broad intervals, the spines and tubercles few and black .	*chiroptera*, Gestro, [p. 263.
6′.	Elytra covered with whitish hairs; the punctures large, subquadrate, and contiguous; the spines and tubercles numerous, strong, and reddish	*echidna*, Guér., p. 261.

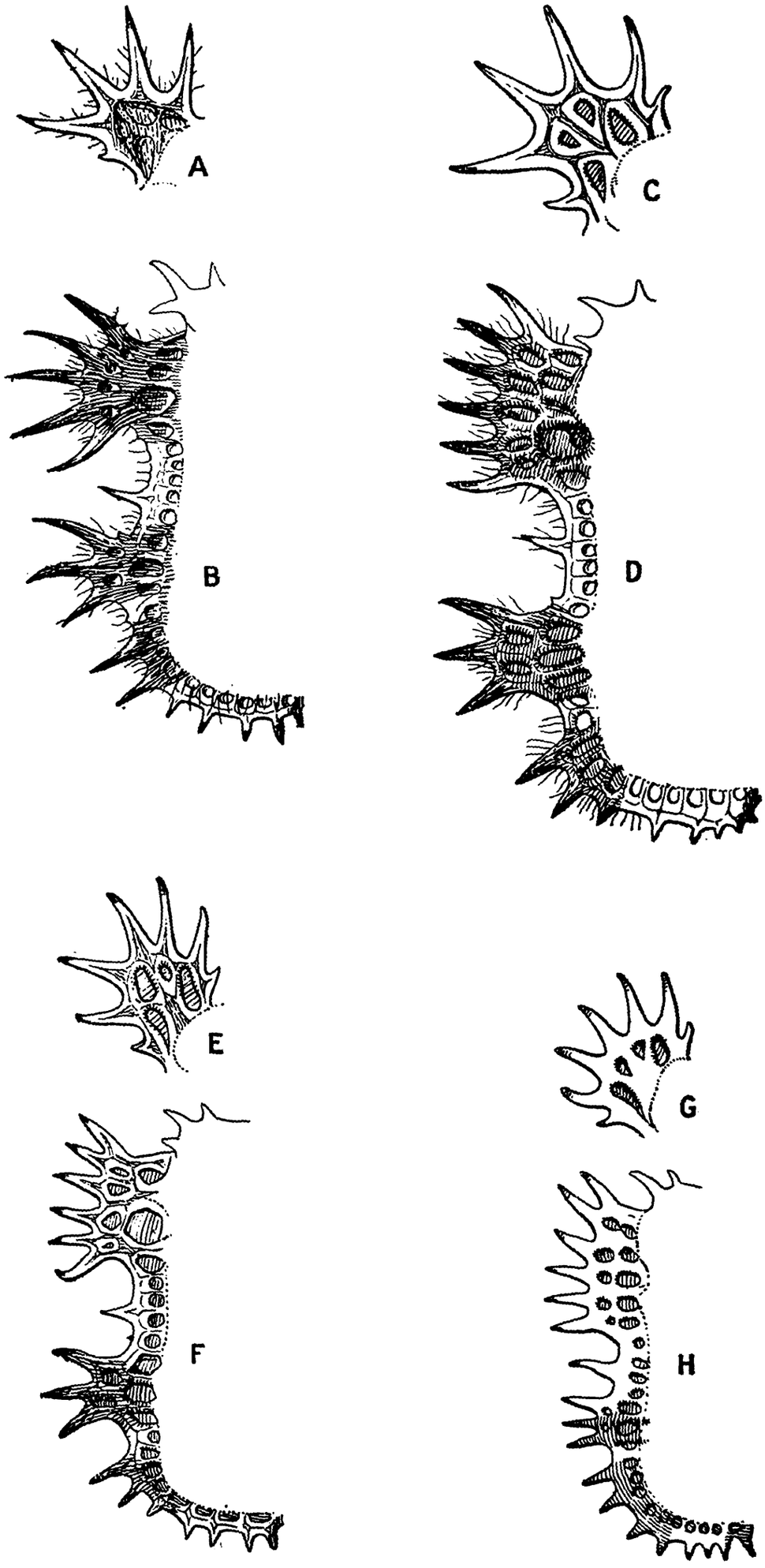


Fig. 77.—Lateral lobes on the prothorax and elytra of:—(A, B) *Platypria hystrix*, F.; (C, D) *P. echidna*, Guér.; (E, F) *P. erinaceus*, F.; (G, H) *P. andrewesi*, Ws.

230. Platypria erinaceus, *F.*

Hispa erinaceus, Fabricius, Syst. El. ii, 1801, p. 59; Illig. Mag. iii, 1804, p. 169.
Platypria erinaceus, Guérin, Rev. Zool. 1840, p. 141; Gestro, Ann. Mus. Civ. Genova, 1897, p. 111.
P. erinaceus var. *bengalensis*, Gestro, l. c., p. 112.

Colour red-brown; the basal margin and sides of the elytra black (this may be absent in some individuals); the prothorax with two dark red parallel longitudinal bands, with two diffused black patches on each band.

Head with a projection in the interantennal space and an impressed longitudinal line down the middle, on either side of which the surface is rough. The antennæ are red-brown, stout and short, and slightly pubescent; the first joint is stout, the second very small, the third longer than the fourth and also longer but more slender than the first; from the fifth to the eighth the joints are more or less equal. *Prothorax* almost as long as broad, transversely depressed in front of the base and rough, the sculpture being coarsest on the two red-brown bands. The front margin is more or less convex, much smoother and with a diffused black patch on each side; the whole lobe is yellow and directed forward, having five long spines and a shorter one posterior to them; on the anterior side there is a minute spine; the lobe is indented with four depressions with transparent centres. *Scutellum* triangular, with the apex rounded, the surface rough, with a circular cavity in the middle. *Elytra* broader at the base than the prothorax, pubescent, punctate-striate, the punctures being round and deep, and the interspaces not pronouncedly raised into costæ. There are four short spinules on the humerus; at the middle and behind it there are four large sharp conical tubercles (two on each elytron), which are red in colour with the extreme apex black, and several other very minute black tubercles. The anterior lateral lobe is yellow, with six spines and five depressions with transparent centres, the extreme tips of the spines being black; the concave interval has a small yellow spine; the posterior lateral lobe has three spines and two depressions, the lower half of the lobe including the two posterior spines being red and the apex of the spines black; following the posterior lobe there are two more spines, which are red with the tips black; then follow several small spines (about five on each elytron), which are yellow with the tips black, except the sutural spines, which are red with their tips black (fig. 77, F). *Underside* lighter in colour. The claw-joint hardly projects beyond the bilobed joint.

Length, 5 mm.

BOMBAY: Belgaum (*H. E. Andrewes*). MADRAS: on *Zizyphus*, Coimbatore, ix–x. 1913 (Ind. Mus. & Coimbatore Coll.); Salem; Varagambady, i–ii. 1915 (Ind. Mus. & Coimbatore Coll.).

Type in the Copenhagen University Museum.

The coloration varies. Asymmetry in the arrangement of the spines is a common occurrence.

Platypria erinaceus var. bengalensis, *Gestro.*

The coloration is darker. The tubercles on the elytra are more pronounced and surrounded by black at the base; the humeral spines are black; the sculpture of the elytra is stronger. The spines on the posterior margin of the elytra in one example are nine in number, two of those on the right elytron being joined at the base and free at the apex. In another example the left elytron has nine spines and the right eight.

BENGAL: Barway (*P. Cardon*).

Type in the Brussels Museum.

231. **Platypria andrewesi,** *Ws.*

Platypria andrewesi, Weise, Deut. Ent. Zeits. 1906, p. 404.

Colour pale yellow to reddish brown; the antennæ, the posterior three spines of the posterior lateral lobe of each elytron, and the three following marginal spines are red-brown in darker specimens and at least darker in the paler specimens; the tubercles and spines on the elytra are black, or darker, and always tipped with black; the prothorax with two longitudinal red-brown stripes, each of which bears two black patches.

Head with a fine impressed line longitudinally down the middle. The antennæ are shorter and thicker than those of *P. erinaceus,* and very sparsely covered with white hairs; the second joint is small, the third the longest; from the fourth to the eighth, each becomes a little shorter than the preceding joint; the fusion of the joints in the last is more or less complete. *Prothorax* as in *P. erinaceus* except that the lateral lobes are uniformly rounded, whereas in *P. erinaceus* the whole lobe is drawn forwards (fig. 77, E, G); but there are specimens in which it is difficult to decide whether it is distinctly drawn forwards or not, the existence of these intermediate forms making it doubtful whether *P. andrewesi* is specifically distinct. The colour of the lobes in the pale specimens is whitish, in the darker specimens yellow. *Scutellum* triangular, with the apex rounded, its surface rough and with a deep depression. *Elytra* broader at the base than the prothorax; at the middle and behind there are two sharp-pointed conical tubercles on each elytron; the sutural spinules are more prominent and the conical tubercles lower than those of *P. erinaceus.* Here again, in some specimens before me they are more reduced than on those from which Weise drew up his description. The anterior lateral lobe in paler specimens is whitish and in darker ones yellow; it has six spines, and the posterior lobe three; the concave interval between the two lobes is very short and has a spine which is almost equal in length to the lobal spines. In *P. erinaceus* the interval is not so short and the spine it contains is shorter than the lobal spines; but once more we find intermediate forms as regards this distinguishing character. The marginal spines that follow those of the posterior lobe are of the usual gradually diminishing size. The surface is

punctate-striate and moderately costate, the punctures being round and deep, and the whole surface is covered with whitish hairs.

Length, 4–5 mm.

PUNJAB: Kangra Valley, 4500 ft., vii. 1899 (*G. C. Dudgeon*). CENTRAL PROVINCES: on *Zizyphus jujuba*, Nagpur, 30. iv. 1915 (*E. A. D'Abreu*). BOMBAY: Surat; on sugar-cane leaves, Jalalpur, 24. i. 1904. MADRAS: on *Zizyphus*, Hajari, 16. vi. 1908 (Coimbatore Coll. & Ind. Mus.).

Type in Weise's collection; cotype in Mr. Andrewes' collection.

232. Platypria echidna, *Guér.*

Platypria echidna, Guérin, Rev. Zool. 1840, p. 139; Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 246, fig., and 1897, p. 112; Maulik, Rec. Ind. Mus. 1915, p. 380.

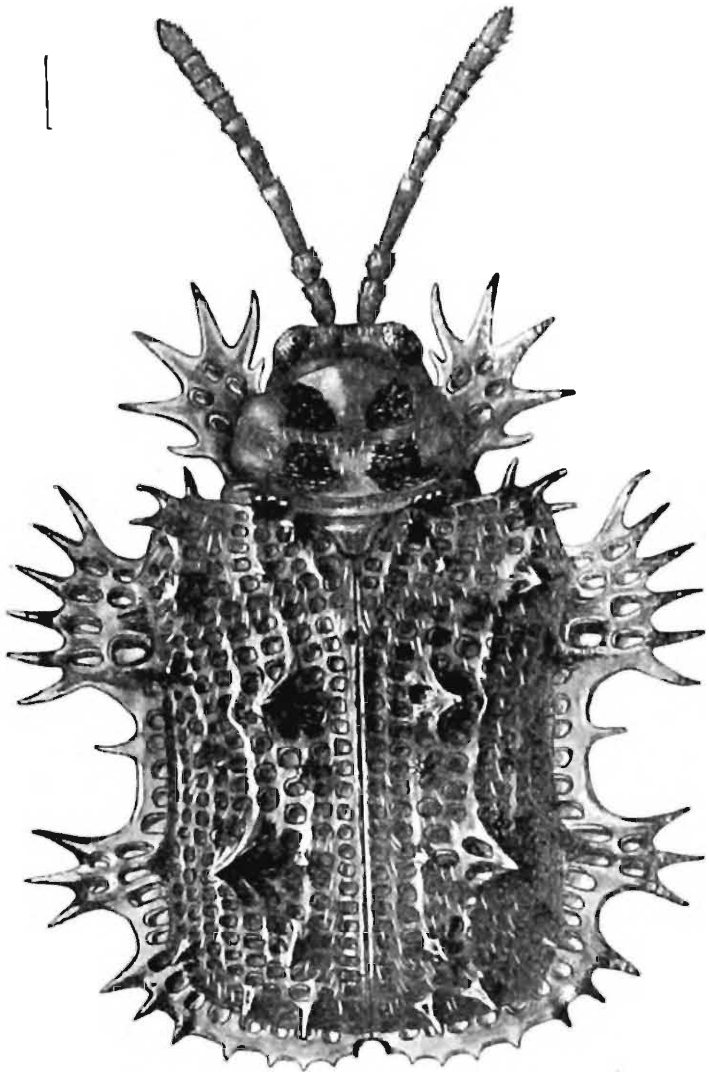


Fig. 78.—*Platypria echidna*, Guérin

Colour varying from dark red to yellow, the spines black, or yellow tipped with black; four black patches on the pronotum, the two front ones sometimes obsolescent; body shining and thinly covered with light and longish hairs; the lobes of the elytra sometimes suffused with black.

Head pubescent and with a deep longitudinal sulcation in the middle, the collar, *i. e.* the space posterior to the eyes, constricted. The antennæ sparsely covered with light hair; the first joint long, the second very small and rounded, the third the longest, the following joints becoming successively shorter. *Prothorax* on each side with a large expansion projecting almost at an angle of 45° and bearing six spines, the first and last of which are much smaller than the others, the disc of the expansion with four elongate depressions with more or less hyaline centres, the two basal ones being larger; the upper surface is more or less flat, with a shallow transverse depression at the base and a longitudinal impression down the middle. *Scutellum* triangular, hairy, generally with a depression in the middle, the apex rounded. *Elytra* punctate-striate, the punctures being large, quadrate and approximated; the costæ bear a number of irregular black spines, which are unequal and vary in size. The side of each elytron has two well-developed expansions bearing spines, the concave bay between them generally provided with a minute spine; the front lobe has seven elongate depressions and six equal spines equidistant from each other, and there may be a minute spine near the base; the posterior lobe is smaller, having four depressions and three spines; the apical margin has very small spines near the suture and towards the second lobe there are three larger spines, which together give an impression of a third lobe. *Underside* smooth, lighter in colour. The claw-joint of the tarsus hardly projects beyond the third joint.

Length, 7 mm.; breadth, 4 mm.

CEYLON: Kandy. vi. 1908 (*G. E. Bryant*); Balangoda, 1776 ft., iii. 1882, and Galle, xi–xii. 1881 (*G. Lewis*); Trincomali, iii. 1915 (*C. F. S. Baker*). PORTUGUESE INDIA: Mormugao, ix. 1916 (*S. Kemp*). MADRAS: Travancore (*Mrs. G. S. Imray*); Parambikulam, Cochin State, 1700–3200 ft., ix. 1914 (*F. H. Gravely*); Kasergode, x. 1913; Sanivarsandai, 4000 ft., Coorg, iii. 1913; Anamalai Hills (*H. L. Andrewes*); Nilgiri Hills (*Sir G. F. Hampson*); Visapur (type). BOMBAY: Castle Rock, N. Kanara, x. 1916 (*S. Kemp*); Belgaum (*H. E. Andrewes*); Matheran. BENGAL: Chota Nagpur (*Cardon*). SIKKIM. BURMA: Bhamo; Teinzo, v. 1887; Tikeki, Pegu, vi. 1887; Karen Hills, 4700–5000 ft., iii. 1888 (*L. Fea*); Tavoy (*W. Doherty*). INDO-CHINA: Tonkin.

I have examined about fifty examples of this species, which is common in South India and Ceylon, occurring in the plains as well as on the hills. The adults are found generally in the months of March–October, but in Ceylon it has been found even in December.

233. **Platypria acanthion**, *Gestro*.

Platypria acanthion, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 245.

Body almost quadrate. Testaceo-ferruginous; the antennæ

flavo-testaceous; the prothorax with the lateral lobes pale fulvous, and two oblique black vittæ on the disc, which meet at the base.

Head with a longitudinal stria in the middle. The antennæ are thin and long. *Prothorax* much broader than long, each side having a large pale yellow lobe bearing six spines, each of which again has a small appendix, the anterior two being a little longer and slightly curved outwards. The disc is almost flat, with a shallow median longitudinal stria, and a large transverse depression at the base; outside the oblique black bands there are fine punctures and a narrow black stripe; the basal depression is strongly punctate, and there are finer punctures on the two black bands. *Elytra* punctate-striate, with the spines on the upper surface black and short. The anterior lateral lobe has six spines

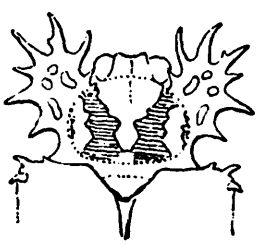


Fig. 79.—Prothorax and base of elytra of *Platypria acanthion*. (After Gestro.)

and the posterior four; then follow two other spines which, owing to their proximity, may be said to form a part of the lobe; the interval between the two lobes is pale yellow and has a small spine, and that between the posterior lobe and the sutural angle is of the same colour and is armed alternately with small and still smaller spinules.

Burma: Karen Hills (*L. Fea*).

Type in the Genoa Museum.

This species differs from *P. echidna*, Guér., in having (1) the antennæ longer, (2) the prothorax shorter and more transverse, with the spines of the lateral lobe different and appendiculate, (3) the two oblique black bands on the surface of the prothorax, (4) a strong transverse basal depression and differently punctate surface, (5) the humeral and discal spines shorter, and finally (6) in having four spines to the posterior elytral lobe.

234. Platypria chiroptera, *Gestro*.

Platypria chiroptera, Gestro, Ann. Mus. Civ. Genova, 1899, p. 172.

Yellow-ferruginous, opaque; the disc of the prothorax with two parallel longitudinal black stripes; the elytral spines and tubercles black, except the apical ones which are yellow with the apex blackish; the basal margin of the elytra and the posterior lateral lobes black.

Head: the antennæ are long and fine, of a light yellow-ferruginous colour with the first and last joints rather darker: in the ultimate joint the fusion of the three joints is not complete.

Prothorax transverse, opaque and clothed with extremely fine white hairs, but shiny along the anterior margin; sparsely and slightly punctate at the sides, but punctate-rugose on the black median stripes. The lateral lobes are paler than the disc and have each six spines; the first (anterior) and the sixth are short, the second the longest, and the others subequal. *Elytra* regularly sculptured with round punctures separated by broad intervals, and the interval between every two longitudinal rows of punctures raised into costæ which are not very prominent. The tubercles and spines on the disc are few; the anterior lobe has six black spines; in one example the posterior lobe of the left elytron has four spines, while the right has three with a fourth at a little distance; the anterior and posterior lobes are narrow, and therefore the interval between them is large and it has a yellow spine in the middle; the spines of the posterior margin are of decreasing length towards the suture. *Underside* yellow-brown and more shining than the upper side.

Length, 5½ mm.

MADRAS: Ghats, vii–ix. 1898 (*R. P. F. Tabourel*—type); Nilgiri Hills (*A. K. Weld Downing*).

Type in M. R. Oberthür's collection.

In the Nilgiri specimens there is some variation in the coloration:—(1) The black patches composing the bands on the surface of the prothorax may be more or less separated; (2) the basal margin of the elytra is not always uniformly black; (3) the anterior lateral lobe of the elytra may have a good deal of black on it.

235. **Platypria hystrix**, *F.*

Hispa hystrix, Fabricius, Ent. Syst. Suppl. 1798, p. 166; id., Syst. El. ii, 1801, p. 59.
Platypria hystrix, Guérin, Rev. Zool. 1840, p. 141; Gestro, Ann. Mus. Civ. Genova, 1897, p. 113.
Hispa erinacea, Olivier, Ent. vi, 1808, p. 762, pl. i, f. 6.
Platypria digitata, Gestro, Ann. Mus. Civ. Genova, xxvi, 1888, p. 178.

Subnitid, yellow-brown; in some specimens the spines and small elevations on the elytra and the lateral lobes are suffused with black; in the dark form the pronotum has the following black markings: the basal area, a central patch and a smaller one in front; in the lighter form the black on the pronotum is reduced to a triangular median patch and a spot on each side; body thinly covered with light and longish hairs.

Head pubescent and with a deep longitudinal sulcation in the middle. The first two joints of the antennæ are generally darker than the other joints; the first joint thick and long, the second small and rounded, the third the longest and more slender, the following joints becoming successively shorter. *Prothorax* broader than long, the lateral lobes inclined forwards at about 45°; they are more or less concave on the dorsal side and bear four large spines, in front

of which there is a minute one, which may be sometimes absent, and a small spine behind; the upper surface is more or less flat, with a transverse shallow depression along the base. *Scutellum* black in the dark variety and red-brown in the lighter; it is rugose, with a circular depression in the middle. *Elytra* punctate-striate and costate, with the punctures large and quadrate, and several spines on each costa. The anterior lobe is armed with five spines, and bears two larger basal and four other smaller depressions with more or less hyaline centres; the posterior lobe has three spines and four similar depressions, the basal two being larger; posterior to the latter lobe there are two spines which are longer than the few spines on the apical margin (fig. 77, B). *Underside* yellow, smooth, hairy, subnitid, impunctate. The joints of the tarsi gradually increase in size, the basal being the smallest; the claw-joint projects beyond the third joint.

Length, 5–5½ mm.; breadth, 4 mm.

CEYLON: Kandy (*G. Lewis*); on dadap, Madulsima, 17. viii. 1908 (*T. B. Fletcher*). MADRAS: Nilgiri Hills; Bangalore, iii. 1915; Tanjore, iii. 1908; Calicut, Malabar, ix. 1913, vi. 1915. NEPAL: Katmandu; Soondrijal. UNITED PROVINCES: Nainital (*H. G. Champion*). BURMA: Sadon, 5000 ft., iii. 1911 (*E. Colenso*).

Dadap (*Erythrina indica*) is a tree of some economic importance, being used locally as a dye, and also for some medicinal purposes. It is largely used as a shade tree for various crops.

236. **Platypria ericulus**, *Gestro*.

Platypria ericulus, Gestro, Ann. Mus. Civ. Genova, xxx, 1890, p. 247, and 1897, p. 114.

Colour pale yellow or pale yellow-brown, shining; the head black; the antennæ pale yellow, with the two basal joints flavo-ferruginous; the prothorax opaque, with the disc and the apical half of the spines black; the elytra with the lateral lobes and the rows of punctures black, the spines also black, the colour extending from the base of one to the next; the underside and legs pale yellow, the sternum black.

Prothorax finely rugose, with white pubescence, and with a short transverse, slightly elevated line in the middle; the lateral lobe is armed with six spines, the front one being very minute and the hind one small. *Elytra* punctate-striate, the disc armed with robust spines, the humerus prominent and bearing four or five spines; the anterior lobe has five spines, the posterior three; after a short interval there are other robust black spines proceeding towards the sutural angle in a diminishing series; the pale marginal space between the lobes carries a single spine, which is sufficiently long and black at the apex.

Length, 5–5½ mm.

BURMA: Keba district, Karen Hills (*L. Fea*).

Type in the Genoa Museum.

Subfamily CASSIDINÆ.

Historical.

The CASSIDINÆ comprise a group of insects which are popularly called "tortoise beetles." In 1758 Linnæus first applied the name *Cassida*, a Latin word meaning helmet, to several species which are characterised by having a rotundate form with the dorsal side convex and the central area drawn to a point. Fabricius founded in 1801 the genus *Himatidium*. Hope (1839–40) erected fifteen genera, of which three, namely, *Hoplionota*, *Calopepla*, and *Aspidomorpha*, occur within our faunistic limits. Then followed three genera, *Platyauchenia*, Sturm (1843), *Delocrania*, Guér. (1844), and *Canistra*, Er. (1847), all of which are mainly South American, the first two being interesting because of their intermediate position between the HISPINÆ and the true CASSIDINÆ. In 1850–55 appeared Boheman's important Monograph of the group in four volumes, in which he founded eighteen new genera.

In Lacordaire's 'Genera Coleopterorum' Chapuis created two genera, of which one (*Chirida*) occurs within our faunistic limits. Then followed Fairmaire (1882–1899) with four genera, Desbrochers (1884 and 1892) with two, and Champion with two genera.

From time to time Weise has published several papers dealing with material from India; he founded altogether fourteen genera. From 1899 Spaeth commenced to publish his papers on this group, his critical study having resulted in the creation of seventy-six new genera. In 1916 I founded two genera. Thus at present 140 genera have been proposed, the number of species being approximately 2880, of which genera 16 and 152 species are found within our faunistic limits.

Differences between Hispinæ and Cassidinæ.

According to the developmental characters there is a marked difference between the two subfamilies. The larvæ of the HISPINÆ are generally leaf-miners with the structure of the body accordingly modified, while the larvæ of the CASSIDINÆ are free-living, with a characteristic habit of carrying excrementitious matter on a fleshy prolongation at the posterior end of the body. Although the two subfamilies are thus sufficiently differentiated, there are no corresponding characters which may be applied to the mature beetles, because some species which are put among the HISPINÆ according to adult characters, have larvæ with habits like those of CASSIDINÆ (see page 13). In spite of this difficulty in deciding with certainty to which subfamily an insect belongs without a knowledge of its larval habits, the large majority of the CASSIDINÆ are easily recognisable by their rotundate or oval form.

with an explanate margin all round, that in front of the prothorax completely concealing the head when the insect is viewed from above, and in repose the antennæ and legs are not at all visible from above.

The insects belonging to the genera *Platyauchenia*, Sturm, *Delocrania*, Guér., *Hoplionota*, Hope, etc., which are placed at the beginning of the subfamily, have elongate bodies with the elytral margin very little explanate. The front margin of the prothorax is explanate but has a deep emargination in the middle which exposes the dorsal side of the head. With the exception of these forms, which may be regarded as transitional, the general shape and structure indicated above will sufficiently differentiate a Cassid, at least from our regions, for all practical purposes.

External Structure.

Figure 80 shows the different regions of the upper side of a Cassid. The antennæ (fig. 81) are 11-jointed and are carried in repose under and pressed against the explanate margin of the prothorax. In some genera on each side there is a channel in which at least the few basal joints, if not the whole antennæ, lie. This character has taxonomic value, and advantage has been taken of it to separate several genera. The eyes are always convex and

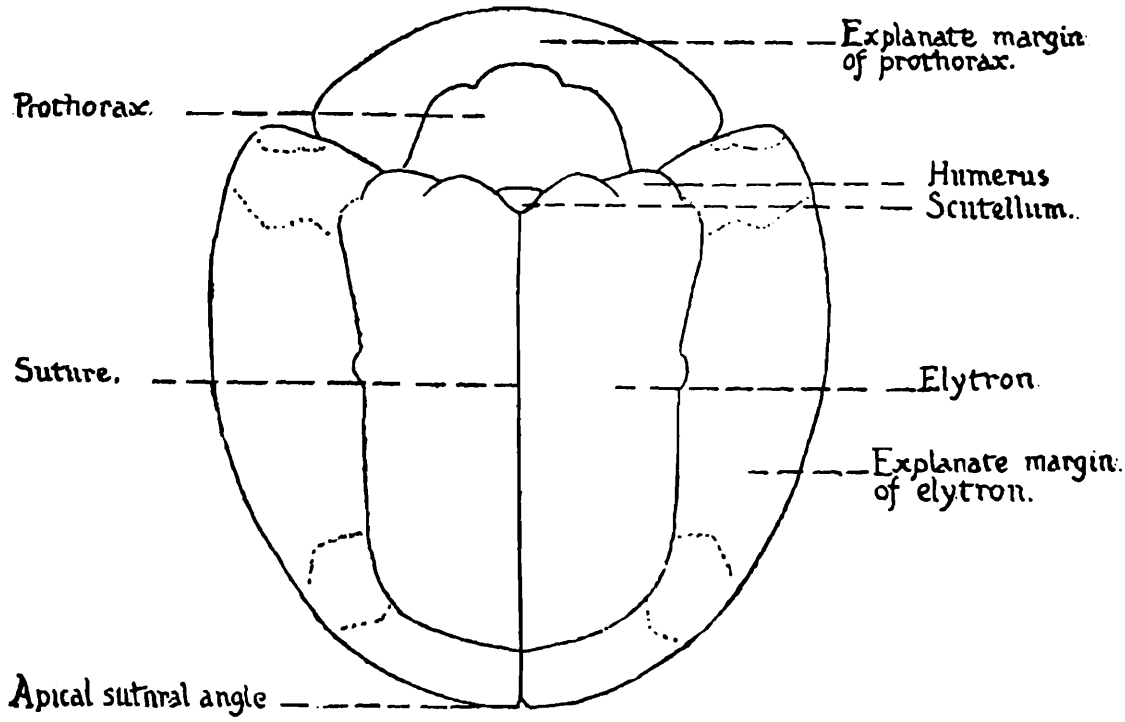


Fig. 80.—Diagram of the upper side of *Aspidomorpha sanctæ-crucis*, F.

between them the two antennæ are inserted, so that their bases are closely approximated. From the roots of the antennæ to the mouth-parts is a space called the clypeus (fig. 81). The mouth-parts consist of the usual pieces, viz., labrum, a pair of mandibles, a pair of maxillæ each having a four-jointed palpus, and the

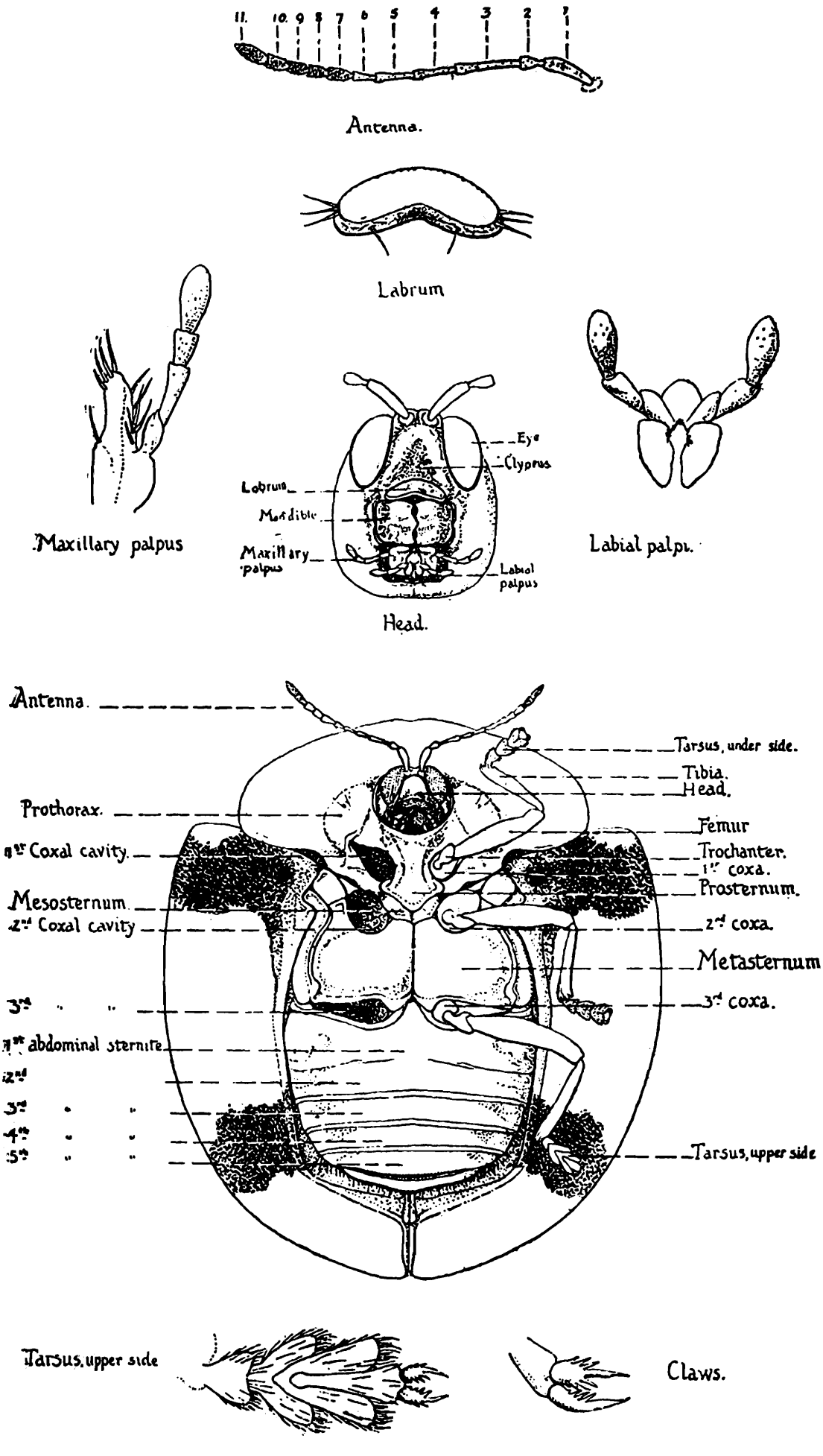


Fig. 81.—Underside of *Aspidomorpha sanctæ-crucis*, F.

labium bearing a pair of three-jointed palpi (fig. 81). How these different parts are related to each other and how they are used in gathering and chewing the food have already been stated on pages 5 and 6.

The prosternum varies in structure and affords characters which are used in classification. The tarsal claws also present some rather unusual modifications which are useful for dividing the subfamily into groups. On the outer and inner sides of the claw there are sometimes a series of teeth which form a comb-like structure (fig. 81). This may be present on both sides or on the inner side only. In some genera the claw has at the base a projection or appendix (fig. 116), which is also a useful character, though in a small specimen it is difficult to observe.

On the underside there are five visible segments. At the extreme end there is a small piece which is a part of the tergum and is called the pygidium. The copulatory armature does not afford any useful taxonomic characters. For the structure of the underside of the body and the different parts see fig. 81.

Life-history Notes.

The eggs in the CASSIDINÆ are laid either singly or in clusters in an ootheca, which generally consists of laminæ of dried colleterial fluid placed one upon another with the eggs enclosed in them. It is interesting to note that the egg-case is so constructed as to leave an exit for the larva only above, and none below. In a paper by Muir and Sharp (Trans. Ent. Soc. Lond. 1904, p. 17) they point out that by certain characters of the oothecas the genera of some South African CASSIDINÆ may be distinguished thus :

1. A covering of excrementitious matter is added to the very small and imperfect ootheca which consists of only three or four cells *Cassida, Laccoptera.*

2. There is no coat of excrementitious matter.

   a. The ootheca is attached, at one extremity, to a leaf by one or a few special egg-less membranes, and has a bilateral symmetry *Aspidomorpha.*

   b. The ootheca is attached by a broad base to a leaf or round a stem, by means of the egg-membranes, has a concentric symmetry, and consists of three differentiated strata, viz. : (*a*) the eggs and their attached membranes, (*b*) a stratum of agglutinated membranes forming a shell, and (*c*) a circumferential layer of two or more series of large empty cells. *Basipta.*

The larvæ also possess characters which may be used in classifying the genera, if not the species. Among the species here described it will be noticed that those of *Aspidomorpha* and *Laccoptera* have two supra-anal prolongations, while in *Oocassida*

it is single, being bifid at the apex. The spinulate projections all round the body vary in such a manner as can be utilised for classification.

The excrementitious matter carried by the larvæ of this group has attracted the attention of naturalists for a long time. It may be observed that this clothing assumes different forms in different species and is not without a definite design. In the larvæ studied here there are three kinds, viz. (1) a ladder-shaped structure in *Aspidomorpha* and *Laccoptera*, (2) a bunch of filaments in *A. sanctæ-crucis*, F., (3) a convoluted conical mass in *Oocassida*.

In some tropical American species of the genus *Porphyraspis* this clothing is remarkable. The larva of *P. tristis*—a short and broad insect—completely covers itself with a very dense mass of fibres, each many times the length of the body and elaborately curved so as to form a round nest under which the larva lives.

Muir and Sharp (loc. cit. p. 20) classify the genera already mentioned according to the structure of the excrementitious matter thus:

1. The larva is naked. .. *Basipta.*
2. The larva carries the old skins.
   (*a*) The excrement is attached to the old skins and forms a solid pad *Cassida, Laccoptera.*
   (*b*) The excrement does not form a solid pad, but is carried either in the form of long filaments or is not used at all *Aspidomorpha.*

The coloration of some of the mature beetles is such as has evoked poetic expressions from many authors. "Living jewels" is the commonest epithet applied to them. This brilliancy disappears when the insect dies and dries up, but on prolonged soaking in water it is to a great extent restored. From this it appears that the colours are probably due to the presence of water between layers of the chitin.

Aspidomorpha miliaris, F.

This species builds egg-cases which vary considerably in size and in the number of eggs that they contain. The eggs in one ootheca vary from 32 to 80; but as the female grows old the oothecas decrease in size, some only containing about ten eggs. Most of the oothecas have eight longitudinal rows, the four middle ones containing the eggs, the others (two on each side) being air-chambers. An insect takes from 40 minutes to 1½ hours to construct an ootheca. From observations on several insects, an average of one ootheca every 3½ days was obtained; the longest period for which a female has been observed to live is 110 days, during which time she paired twice and laid 23 egg-masses in 75 days. The size of an egg is about 2 mm. long and 0·6 mm. in breadth. The eggs take from 10 to 13 days to hatch.

The larvæ live in groups and pupate together. The newly-hatched larva is light greenish yellow or ochraceous brown. They are very active, but if proper food be near they usually settle down

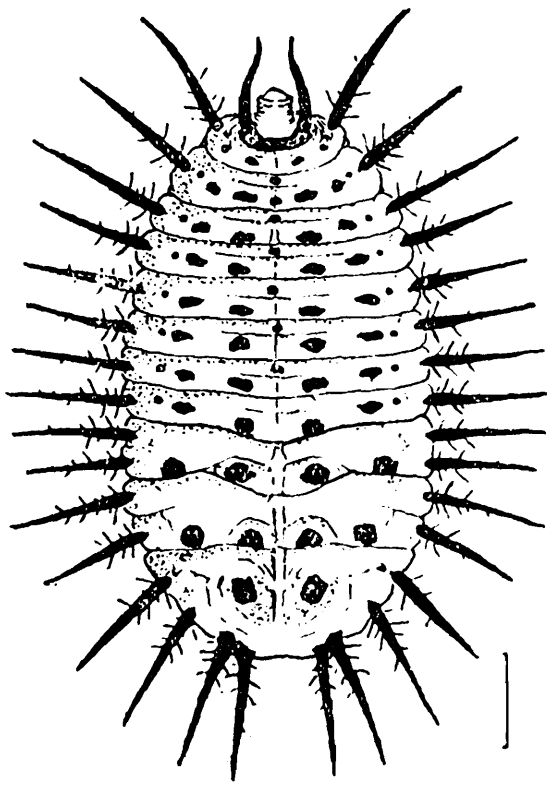


Fig. 82.—Larva of *Aspidomorpha miliaris*, F.

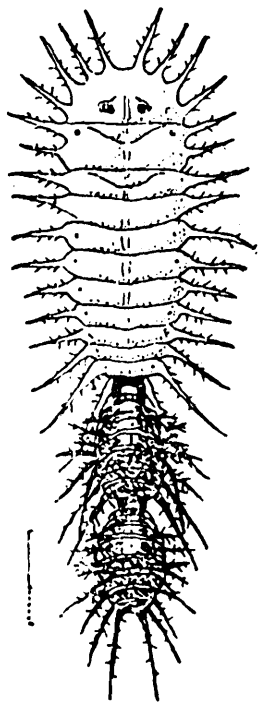


Fig. 83.—A young larva of *Aspidomorpha miliaris*, F.

in a row along the margin and only move on as the surface of the leaf is eaten. For the first few days of life they only eat half through the leaf, but as they grow larger they eat all but the largest veins. The food-plants of this species are *Calonyction bona-nox*, Boyer, *Ipomœa triloba*, L., *I. pes-caprœ*, L., and *I. batatas*, Lamk. (sweet potato). When resting (not feeding) they form an oval figure, all the heads being directed towards the centre.

In this species the structure built of excrementitious matter etc. on the supra-anal process is extremely long. The larva has eight spines on the pro-, four on the meso-, and four on the meta-thorax, each of the abdominal segments having two spines. All the spines are nearly straight, those on the seventh, eighth and ninth segments being longer than the others, and the forked supra-anal spine of the ninth segment curved and short in the full-fed larva. All these spines bear spinules, being dark, and lighter brown towards the base; the head and legs are also dark brown, being lighter along the sutures. The general colour of the larva is creamy-white, but towards the margins and segmental articulations ochraceous. On the prothoracic segment indications of a chitinous sclerite appear, marked with two irregular dark-brown spots. The mesothoracic segment has two black antemedial

and two brown submarginal spots, and the metathoracic segment two large black antemedial, four smaller submarginal brown spots, and one small black nearly round medial spot on the posterior half. Each of the first to seventh abdominal segments has two irregular oblong black antemedial, two submarginal, and one small nearly round medial spot, the last-named on the posterior half of each segment. The eighth segment has two medial spots. All spots are arranged in longitudinal rows. The spiracles are white, of moderate length, and dorsal.

The full-grown larva, about two days before it pupates, fastens itself upon the leaf with a glutinous substance, generally head downwards. Only the fifth larval skin remains on the pupa. During the pupal stage, as in the larval, the individuals remain in groups. The larvæ take from 18 to 21 days to become full-fed.

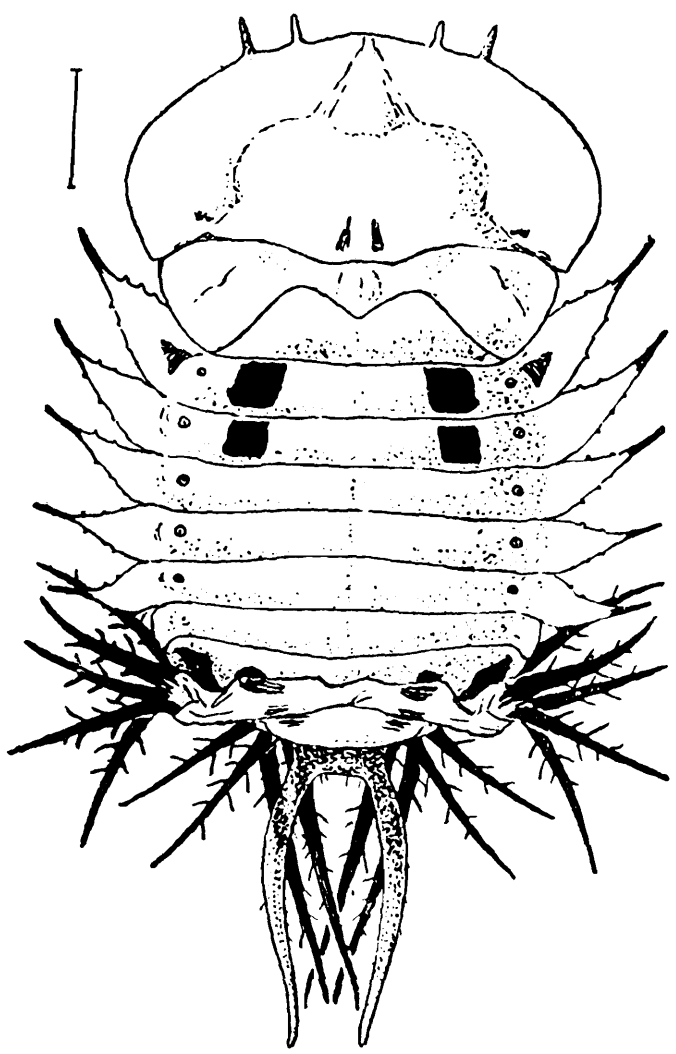


Fig. 84.—Pupa of *Aspidomorpha miliaris*, F.

The pupa is yellowish ochraceous, with two small black spots in the middle of the posterior margin of the pronotum and two large black patches on each of the first two abdominal segments. The pronotum is twice as broad as long, the marginal semitransparent area having four dark brown hooks in front.

The spines on the first to the fifth abdominal segments of the larva are transformed in the pupa into flat semitransparent leaflets, prolonged laterally into a black spine. All other spines of the larval stage are absent in the pupa. The spiracles are of moderate length.

The pupal stage lasts from 4 to 5 days, as a rule, though some may remain as long as 7 days.

The above notes are mainly taken from W Schultze's and C. F. Bishop's accounts.

Aspidomorpha sanctæ-crucis, F.

This species also builds an egg-case (fig. 85).

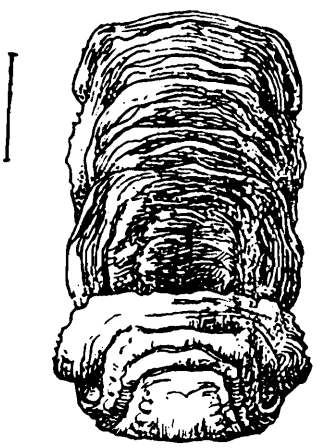


Fig. 85. --An egg-case of *Aspidomorpha st. crucis*, F.

The larva is of the usual type, having a flattened body with long horizontally projecting spines all round the body. The mouth-parts are entirely ventral. On each side of the head there are four or five black ocelli in a longitudinal row. In this species there are sixteen spines on each side, excluding the supra-anal projection; those on the abdominal segments are smaller than the thoracic ones and overlap one another at their bases, except the last two pointing backwards, which are longer than the prothoracic ones. All these spines have spinules from all sides of their surface, and are thicker at the base with tapering extremities. The supra-anal projections, on which the excrementitious structure is built, are double, of moderate length, thicker at the base, with the extremities tapering and without spinules. The excrementitious structure consists of a bundle of long filaments, which is held erect over the body and is characteristic of the species. The coloration is not mentioned, because the description has been made from specimens in alcohol.

The pupa is 15 mm. long without the supra-anal projection, and 11 mm. broad. The dorsal side is slightly convex, brown, with very dark brown markings. The lateral projections of the thorax have been transformed into leaf-like structures pointing anteriorly. Those of the abdomen retain their larval form but are crowded together at the posterior part, so that in the pupa superficially the thorax occupies the greater part of the body. The front of the pronotum is regularly rounded, the edge bearing minute projections. On the upper surface there is a dark brown triangular-shaped patch, its apex coinciding with the middle point of the pronotal edge, where there is a slight emargination. The surface is also scattered over with dark brown dots. The first leaf-like projection from the thorax is darker than the following two; then the next two are again slightly darker. These projections successively diminish in size, all being edged with a

series of minute spinules. There are three longitudinal bands on the dorsal surface, a broad one along the middle and a much darker lateral one on each side. The lighter parts are

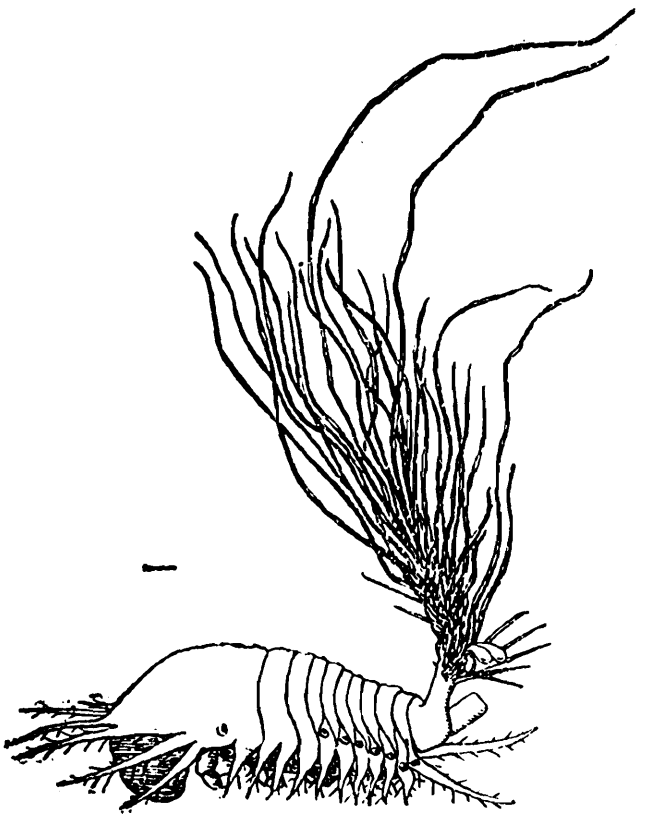


Fig. 86.—Side view of a young larva of *Aspidomorpha sanctæ-crucis*, F.



Fig. 87.—Pupa of *Aspidomorpha sanctæ-crucis*, F

scattered with dark brown dots. In the figure the excrementitious structure is shown overlapping the dorsum.

This species was bred in June at Darjiling by Dr. Sutherland.

Aspidomorpha dorsata, F.

This species makes an egg-case.

The larva is of the usual type, being elongate-oval, flattened, and having long spinulate projections all round. The upper side is creamy white (in alcohol), with two more or less rounded and large patches on the pronotum, the bases of the lateral spines and the whole of the three posterior ones, a small area

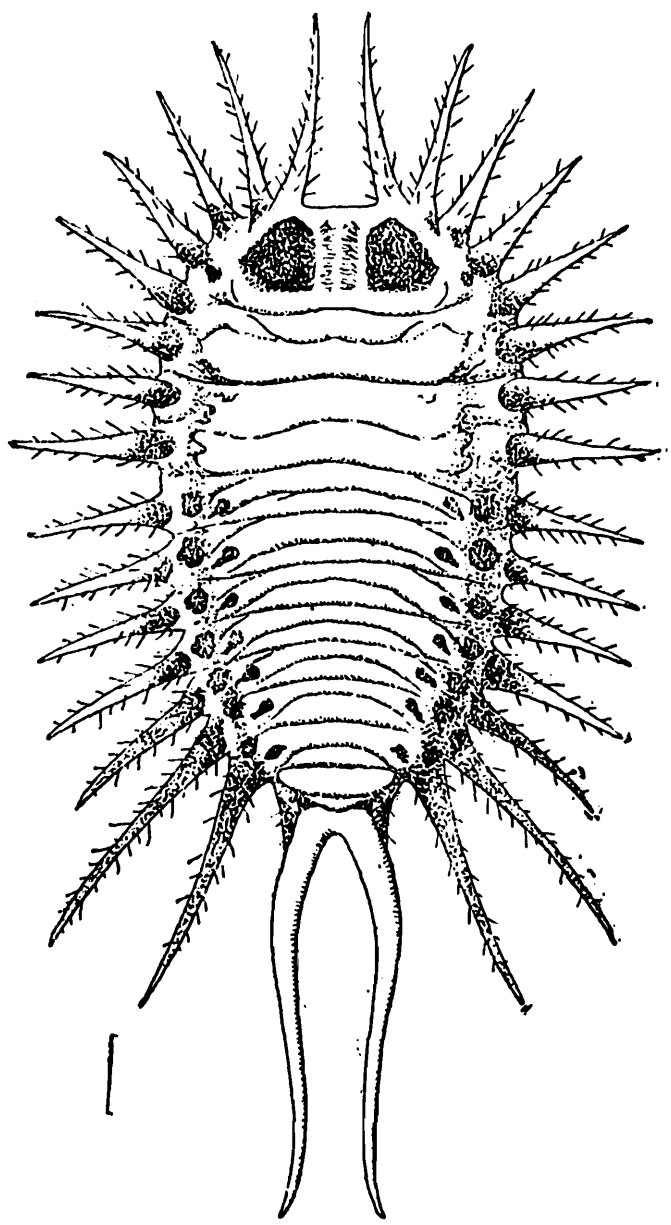


Fig. 88.—Upper side of the larva of *Aspidomorpha dorsata*, F.

surrounding each abdominal spiracle together with an oblique patch close to it on the inner side, and an oblique patch on each side of the supra-anal projection brownish black. The underside is wholly creamy white. The mouth-parts are small and ventral; the mandibles are concave, with the edge strongly chitinised, dark brown and bearing five teeth; the labrum has an emargination in the middle. On each side of the head

there are five ocelli in an almost longitudinal line, one—the second from the base of the mandible—being deviated outwardly; each ocellus has a dark chitinous ring with a white central area. There are sixteen lateral spines on each side, excluding the supra-anal projection, all of them bearing numerous spinules. The supra-anal process is double, of moderate length, so that when laid back on the dorsal surface the extremities just reach the middle of the thorax; it is creamy white, with the tips brownish black. The legs are stout, composed of two segments, and each armed with a single, strong dark brown claw. The length is

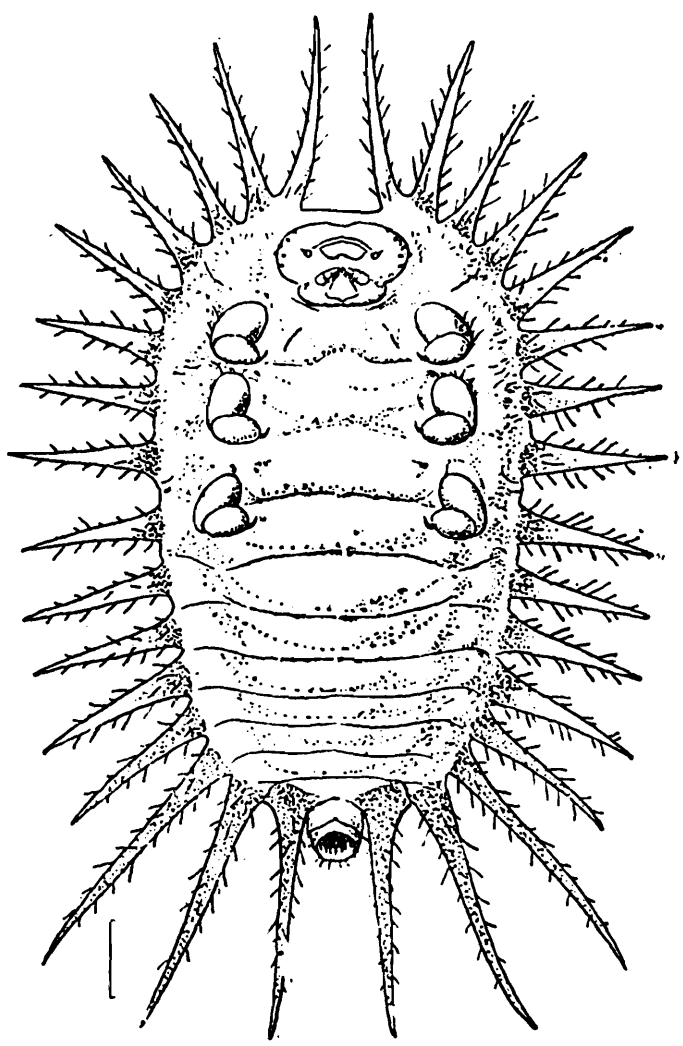


Fig. 89.—Underside of the larva of *Aspidomorpha dorsata*, F.

just over 9 mm., excluding the supra-anal projection; the breadth 5·5 mm., excluding the lateral projections; and the length of each supra-anal projection is 5·5 mm.

In the figure of the upper side of the larva (fig. 88) the sixteenth projection is concealed from view by the supra-anal projection.

The pupa is creamy white, except the dorsal side of the abdominal segments, which are dark brown (with some interruptions in the middle and at the sides). The larger leaf-like lateral projections are bordered anteriorly with dark brown and bear minute spinules on the edges. The pronotal edge is uniformly rounded and has fewer spinules in the middle than at the

sides. Two or three projections (on each side) at the posterior part of the body retain their original larval form, as do the supra-anal projections. Length, 11 mm.; breadth across the pronotum, 8 mm.

This species was bred by Dr. Sutherland at Darjiling in June.

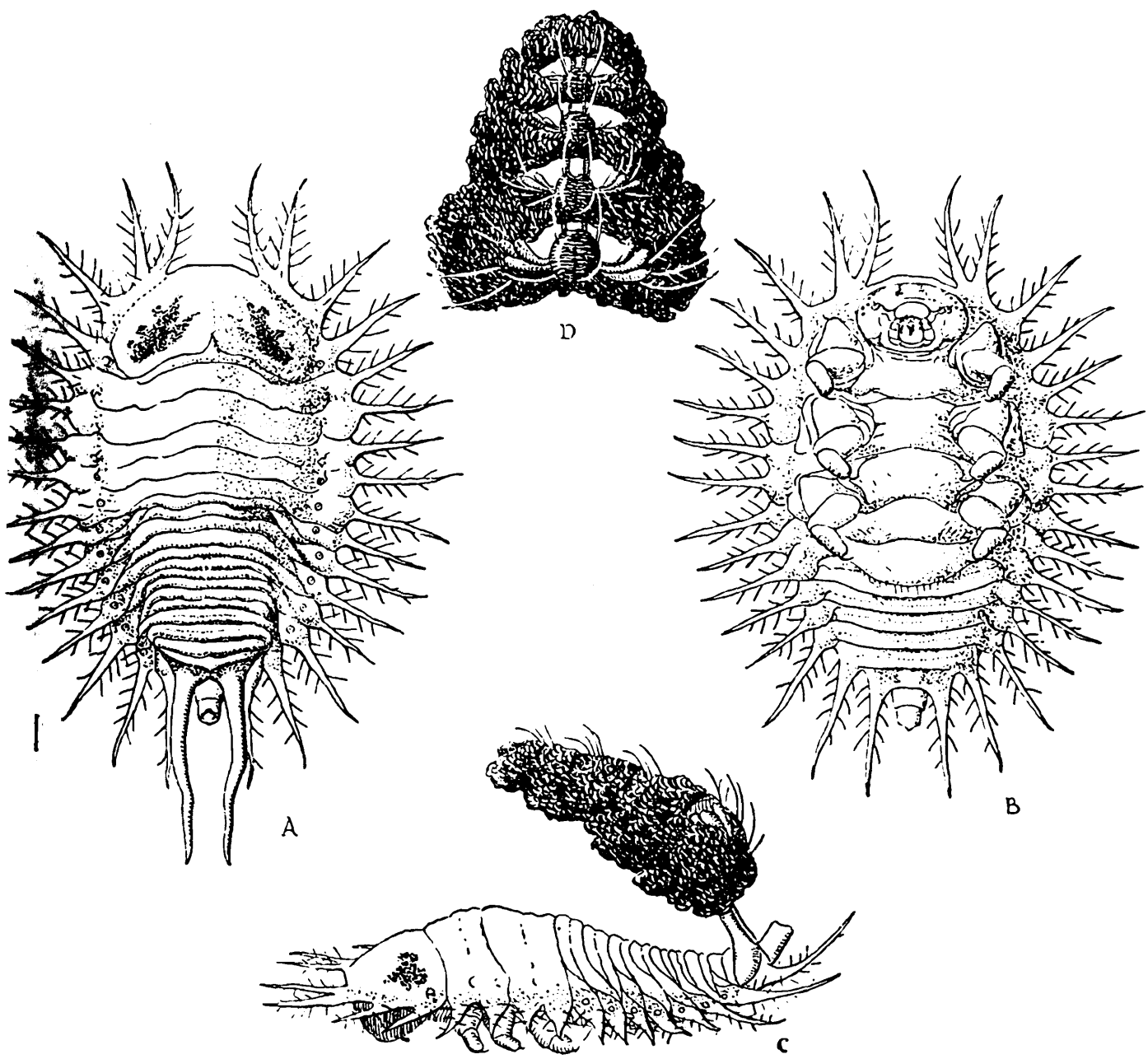


Fig. 90.—Larva of *Aspidomorpha chandrika*, Maulik. A, upper side; B, underside; C, side view; D, structure of the excrementitious matter.

Aspidomorpha chandrika, Maulik.

This species constructs an ootheca.

The larva is elongate-oval, flattened and with spinulose projections all round. The colour is creamy white (in alcohol), with two patches on the pronotum and the base of the supra-anal

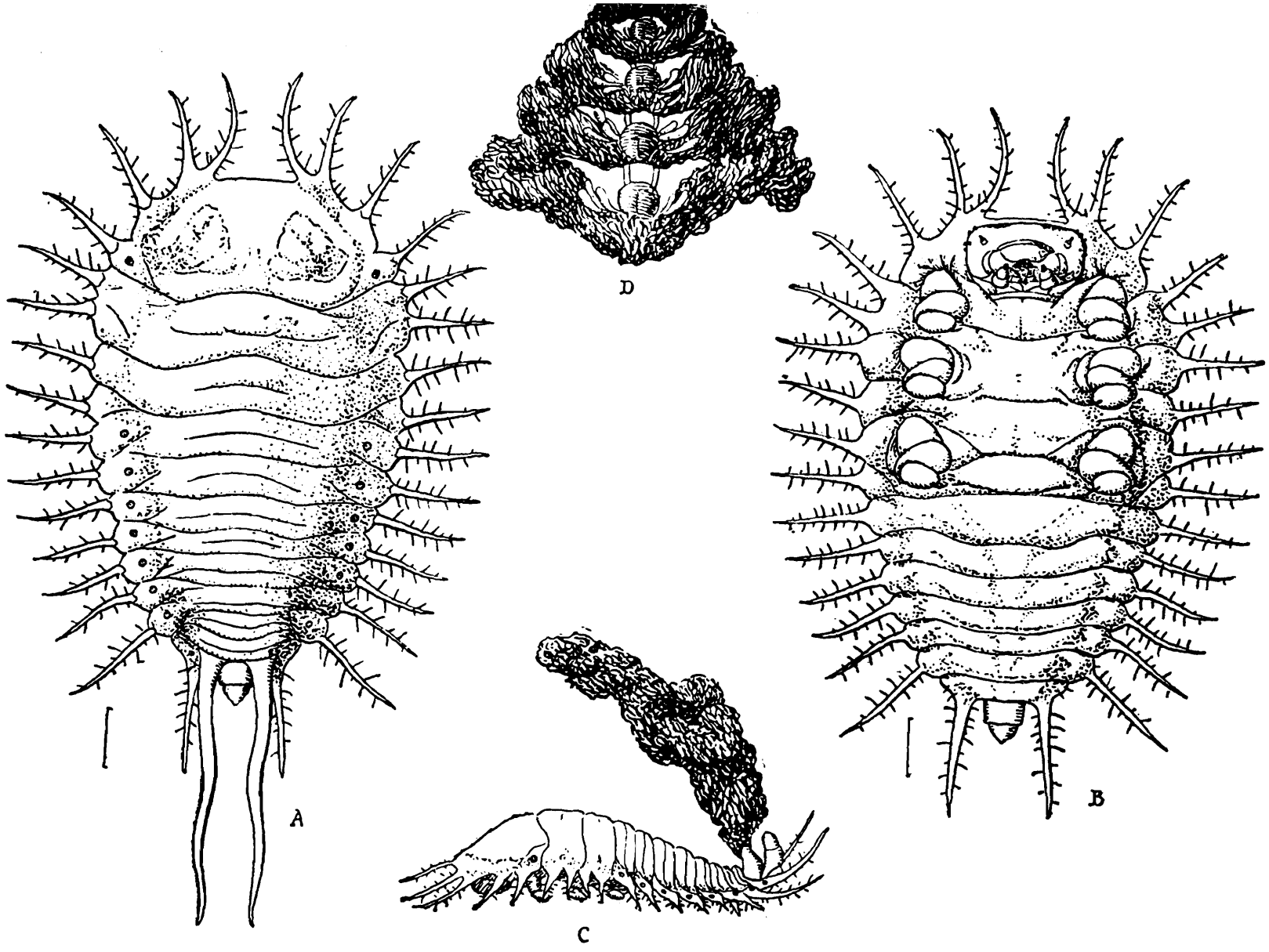


Fig. 91.—*Laccoptera quadrimaculata*, Thunb. A, upper side of the larva; B, underside of the same; C, side view of the same; D, structure of the excrementitious matter.

projections dark brown. The underside is entirely creamy white. The head is dark brown, rather prominent, with a group of five ocelli similarly arranged as in *A. dorsata* on each side. The labrum is large, emarginate in the middle, and the mandibles are five-toothed. On the inner side of the group of ocelli is situated a minute antenna. There are sixteen lateral spines on each side, excluding the supra-anal projections, the former being all of nearly the same size, but smaller and more slender than those of the other species described here; unlike the other species, the three posterior spines are not longer than the rest; five of the abdominal spines overlap each other at their bases. There are two supra-anal projections, which are not spinulose. The structure of the excrementitious matter is of the ladder type, but differs from that of *Laccoptera quadrimaculata* in being narrower. The legs are two-jointed, each having a single claw. Length 7 mm., excluding the supra-anal projections; breadth 4 mm., excluding the lateral projections.

This species was bred by Dr. Sutherland at Darjiling in June.

Laccoptera quadrimaculata, Thunberg.

The larva is oblong-ovate, more or less flattened, with the usual spinulose projections all round. The colour is creamy white, the upper side being much browner, without any markings (in alcohol). The head is brown, more prominent, and a little broader than that of *A. chandrika*, Maulik, the labrum, the group of ocelli, the mandibles, and the antennæ being similar. The lateral projections are more slender than in that species; as usual, their number is sixteen on each side, the first on the pronotum being curved and joined to the base of the next. The single claws are smaller and not so prominent as those of *Aspidomorpha*. The supra-anal projections reach the pronotum when laid on the dorsum: they are not spinulose. The excrementitious structure is of the ladder-shaped type. Length, 7 mm.; breadth, 5 mm.

Bred in Calcutta in August–September by Dr. F H. Gravely.

Oocassida cruenta, F.

The larva is oblong-ovate, creamy white, without any markings (in alcohol). There are sixteen spinulose projections on each side of the body, which are much smaller and finer than those of the other species. The supra-anal projection is single, being bifurcated at the apex. The structure of the excrementitious matter also differs, being a convoluted mass more or less conical in shape. The mouth-parts are as usual, the edge of the mandibles being dark brown, the rest creamy white. The group of five ocelli stands out prominently, being black. The single claws are fine and dark brown. This species differs from all others described here in (1) the supra-anal projection, (2) the structure of the excre-

mentitious matter, (3) the small size of the lateral spines. Length, 7 mm.; breadth, $3\frac{3}{4}$ mm.

In the pupa the larval lateral projections are transformed into leaf-shaped structures.

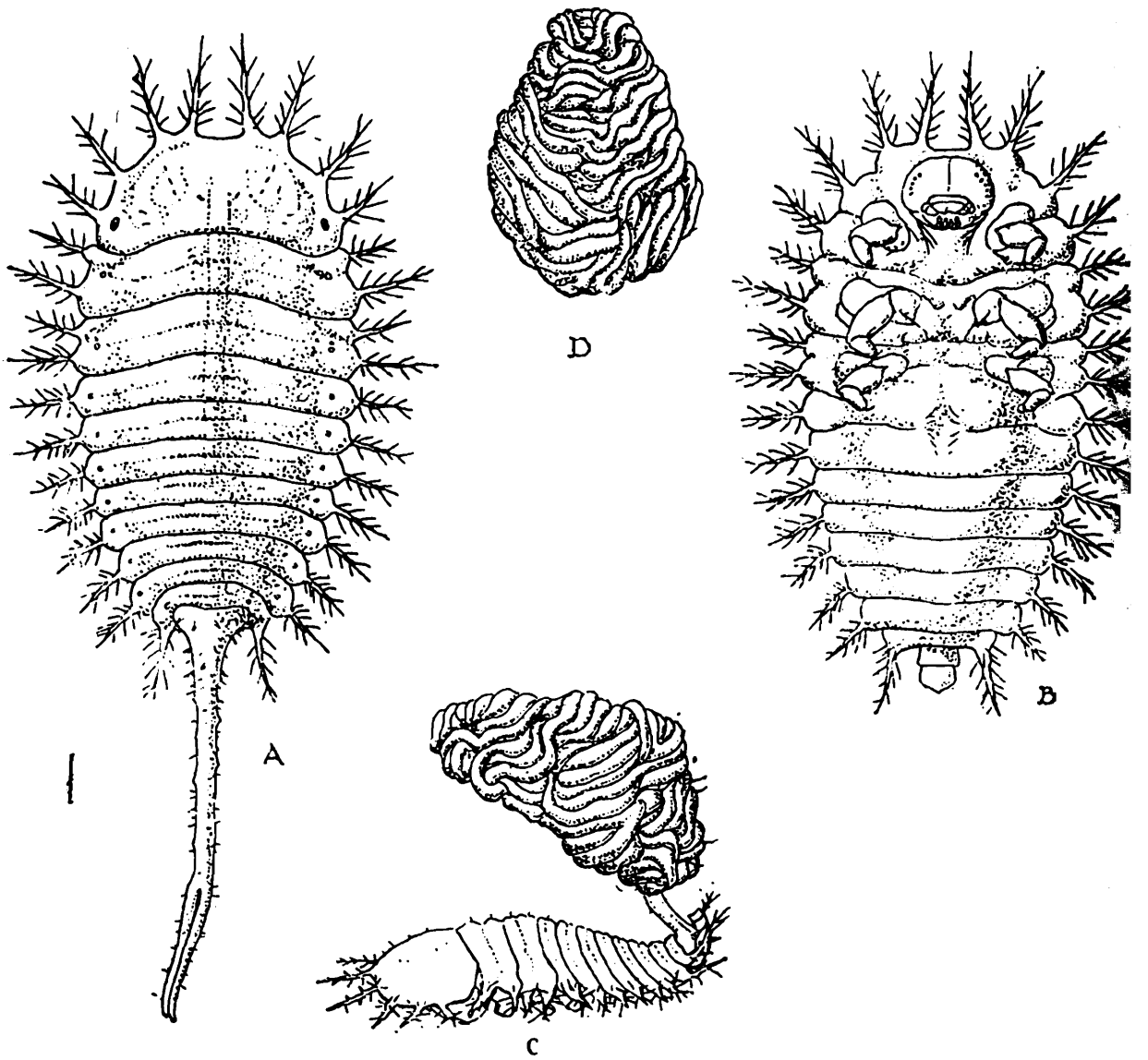


Fig. 92.—Larva of *Oocassida cruenta*, F. A, upper side; B, underside; C, side view; D, structure of the excrementitious matter.

Calopepla leayana, Latr.

Lefroy figures the larva and pupa of this species ('Indian Insect Life,' 1909, pl. xxiv), from which it appears that the structure of the excrementitious matter is a bundle of filaments similar to that of *A. sanctæ-crucis*, F. The larva is very elongate, narrowing towards the posterior end. He has also recorded certain observations regarding the eggs and larva of certain species of *Cassida* and *Chirida*. In these genera the eggs are laid singly on the leaf and fastened to it with short brown filaments from the side of the egg. The green larva is flattened and very difficult to see, resting by day motionless on the plant. Apparently the food-plant is always one of the Convolvulaceæ, and generally the sweet potato. But the insects do not constitute a pest, because they do not occur in large numbers.

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Key to the Indian Genera of Cassidinæ.

1.	Viewed dorsally head not completely concealed under the explanate margin of the prothorax	2.
1′	Viewed dorsally head completely concealed under the explanate margin of the prothorax	5.
2.	Body oblong or oblong-ovate	3.
2′	Body subquadrate or rotundate ..	4.
3.	Prothorax much narrower than the elytra at the base and with strongly reflexed margins; body oblong .	CALOPEPLA, Hope, [p. 306.
3′.	Prothorax not narrower than the elytra at the base, with very slightly reflexed margin; body oblong-ovate.	EPISTICTIA, Boh., p. 318.
4.	Antennæ clubbed; basal margin of elytra not denticulate . .	[p. 284. HOPLIONOTA, Hope,

4'.	Antennæ subfiliform; basal margin of elytra denticulate ..	PRIOPTERA, Hope, p. 310.
5.	Claws with a comb-like structure at the base	6.
5'.	Claws without a comb-like structure at the base	9.
6.	Claws with a comb-like structure on the inner as well as the outer side, or at least indented on the outer side	7.
6'.	Claws with a comb-like structure on the inner side only . :	SINDIA, Ws., p. 340.
7.	Body rotundate or oval ..	ASPIDOMORPHA, Hope, [p. 324.
7'.	Body triangular, being narrowed posteriorly; in some cases the claws only indented on the outer side	LACCOPTERA, Boh., p. 346.
7'.	Body parallel-sided or elongate ..	8.
8.	Sculpturing of the elytra very rough, similar to that of *Sindia*; humeral angles drawn forward . .	SINDIOLA, Spaeth, p. 344.
8'	Sculpturing of the elytra not rough; humeral angles not drawn forward.	CONCHYLOCTENIA, [Spaeth, p. 339.
9.	On the outer side of the eye there is a channel for the reception of the antenna ..	10.
9'	No such channel . ..	12.
10.	Antennæ short and stout, not reaching the posterior edge of the pronotum; the whole antenna lies in the channel.	OOCASSIDA, Ws., p. 355.
10'.	Only the basal joints of the antennæ lie in the channel . .	11.
11.	Two apical joints of the antennæ passing the posterior margin of the pronotum, antennæ finer; body more convex, more narrowed posteriorly.	CHIRIDA, Chapuis, p. 412.
11'.	Two apical joints of the antennæ not passing the posterior margin of the pronotum, antennæ more robust; body less convex and parallel-sided .	[p. 359. GLYPHOCASSIS, Spaeth,
12.	The second joint of the antennæ much longer than the third; body strongly gibbous, in life covered with a white coating..	SILANA, Spaeth, p. 354.
12'.	The second joint of the antennæ generally shorter than the third, never longer	13.
13.	Antennæ fine, much longer than half the body, with the six basal joints almost without hair; body rotundate, almost as broad as long; upper surface of the elytra smooth, with rows of very fine punctures .	[Spaeth, p. 430. THLASPIDOMORPHA,
13'.	No such combination of characters	14.

14.	Body large, rotundate (9–10 × 8–9 mm.); upper surface of the elytra extremely rugose; the five basal joints of the antennæ almost hairless, the rest thicker than the basal joints	THLASPIDA, Ws., p. 428.
14′.	Body always smaller, generally oval; the upper surface of the elytra never strongly costate or rugose; antennæ shorter than half the body	CASSIDA, L., p. 361.

Genus **HOPLIONOTA**, *Hope.*

Hoplionota, Hope, Col. Man. iii, 1840, p. 153; Guérin, Icon. Règne Anim., Ins. ii, 1844, p. 287; Boheman, Mon. Cassid. i, 1850, p. 16; Chapuis, Gen. Col. xi, 1875, p. 357; Wagener, Mitt. Münch. Ent. Ver. v, 1881, p. 21; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 381, and lxiv, 1914, p. ?

GENOTYPE, *Cassida echinata*, F

The insects belonging to this genus are quadrate or oval. The prothorax and elytra have considerable expansions all round, and

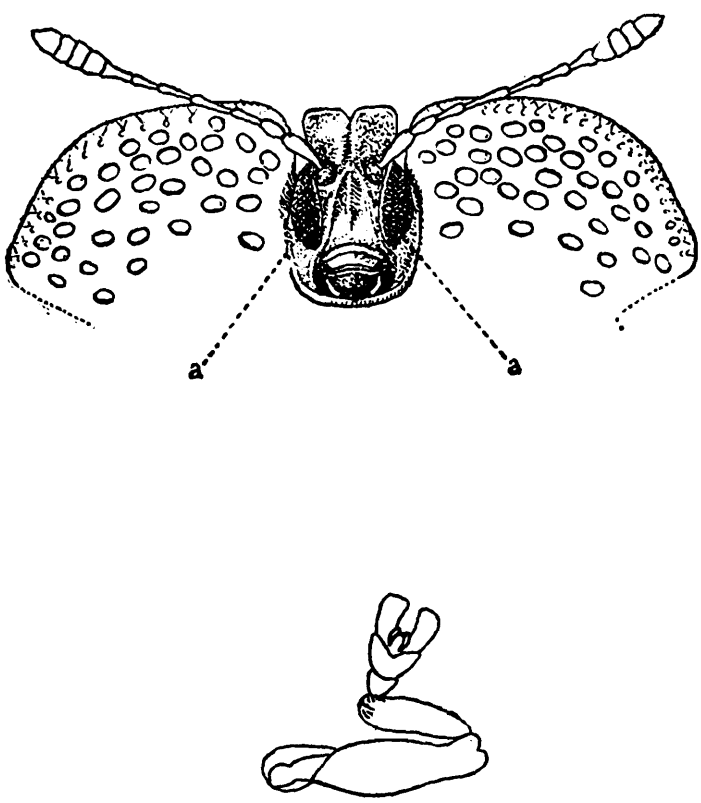


Fig. 93.—Underside of head and prothorax of *Hoplionota circumdata*, Wag.

have a tendency to become transparent. As seen in profile the elytra are very strongly raised behind the middle (fig. 95).

The *head* is exposed to view owing to an emargination in the middle of the front edge of the prothorax, and is always produced in front, the prolongation being either emarginate or longitudinally

split in the middle. The eyes are oblong-elongate, only a portion being visible on the dorsal side. The underside of the head is elongate (fig. 93), with the interocular space generally depressed and channelled in the middle, the channel (fig. 93 *a*) continued to the emargination or slit of the prolongation of the head. The mouth-parts are far away from the base of the antennæ, which are situated in front of the eyes. The antennæ are comparatively short, not reaching beyond the lateral expansions of the prothorax; the first two joints are stout, the first being large and elongate, and the second small and rounded; joints 3 to 6 are slender and elongate, their lengths varying slightly, joints 7 to 11 form a thick club, which is generally clothed with pubescence. The *prothorax* much broader than long and sloping from base to apex, the apical margin deeply excised in the middle. The *scutellum* is generally broad and triangular, with rounded apex. The *elytra* are as broad at the base as the prothorax, coarsely punctate-striate, a scutellar row of punctures being always traceable. The suture is depressed for a little distance behind the scutellum, and is thence distinctly raised in most species; the sculpturing consists of two parallel costæ, sometimes undulating, on each of which there are generally four tubercles, varying much in development; the third tubercle on the first costa is always the largest, and from it transverse costæ are generally given off to the edge of the elytron and to the suture. The *legs* are short, and never extend beyond the lateral expansions; the two lobes of the third joint of the tarsi have long bristly hairs which conceal the claws, and the claw-joint does not project beyond the third joint (fig. 93).

Range. Africa, Asia, Australia, New Guinea, and the Pacific Islands.

Key to the Species.

1.	The ground-colour of the upper side deep black, with a single transparent yellowish area on the explanate margin of each elytron	2.
1′	The ground-colour of the upper side pitch-black, red mixed with black, reddish brown, or yellow-brown	3.
2.	Elytron with costæ but without tubercles, lateral transparent yellow area larger.	*andrewesi*, Ws., p. 300.
2′	Elytron with costæ, at places raised into tubercles, lateral transparent yellow area smaller	*birmanica*, Spaeth, [p. 294.
3.	Body oblong-quadrate, slightly convex, rufo-testaceous, two costæ on each elytron anastomosing posteriorly .	*ochroleuca*, Boh., p. 302.
3′.	No such combination of characters . . .	4.
4.	Interocular prolongation much pointed; second joint of the antennæ not globular, antennal club elongate; elytron with well-developed costæ but without tubercles	[p. 304. *flavicornis*, Spaeth,

4′.	No such combination of characters	5.
5.	Red-brown with two well-defined large black patches, and two well-developed costæ meeting just behind the middle on each elytron, without tubercles	*templetoni*, Baly, p. 302.
5′.	Without two large well-defined black patches; costæ on elytra not well-developed, and generally with tubercles.	6.
6.	Brown, the small tubercles on the elytra black; on the first costa the third or the highest tubercle entirely absent, its position not even raised .	*prominens*, Spaeth, [p. 289.
6′.	Third tubercle present, or at least the costa at this place raised	7.
7.	Red-brown, body narrowed posteriorly, close behind the middle an oblique dark band on each elytron . .	*modesta*, Wag., p. 303.
7′	No such combination of characters	8.
8.	Interocular prolongation pronounced, much broader at the apex than at the base . .	9.
8′.	Interocular prolongation not pronounced, not broader at the apex than at the base	11.
9.	Interocular prolongation truncate at the apex	10.
9′.	Interocular prolongation rounded at the apex; red-brown; third tubercle not high and with no branch towards the suture	*dohertyi*, Spaeth, p. 290.
9″	Interocular prolongation much pointed and with a deep impression; colour rusty yellow with two slightly distinguishable darker patches on the explanate margins; the principal tubercle very low . .	*nietneri*, Spaeth, p. 292.
10.	Body uniformly rounded on all sides; the principal tubercle longitudinally elongate, not sending off any costæ	*circumdata*, Wag., [p. 288.
10′.	Body broadest behind the middle, narrowest between the prothorax and elytra; antennal club very short; the principal tubercle sending off four costæ.	*duvivieri*, Spaeth, p. 296.
11.	The principal tubercle behind the middle of the elytron about 1 mm. high, or a little more	12.
11′.	The principal tubercle always much lower.	13.
12.	Without any tubercle on the apical area of the elytron; colour dark brown, with darker patches on the prothoracic expansions and lighter patches on the elytral ones	*severini*, Spaeth, p. 294.
12′.	Posterior to the principal tubercle another slightly lower one on the apical area of the elytron; colour testaceous, lateral expansion lighter	*horrifica*, Boh., p. 291.

13.	Five costæ radiate from the principal tubercle situated behind the middle of each elytron	14.
13′.	Four costæ radiate from the principal tubercle of each elytron	15.
13″	Three costæ radiate from the principal tubercle of each elytron . ..	19.
14.	Body narrowed behind; uniform brown; size 5 × 4·2 mm.; principal tubercle very high	*clura*, Spaeth, p. 297.
14′	Body rotundate, with black patches on the elytra; size 7½ × 6 mm.; principal tubercle very low	*quinquecarinata*, sp. n., [p. 303.
15.	Colour of upper side pitch-black, with two small transparent yellow patches on each side on the elytral expansion which is laterally produced just behind the anterior lateral angles of the elytra, and then narrowed posteriorly . .	*tenuicula*, Spaeth, [p. 295.
15′.	Colour different, no such lateral production of the elytral margin	16.
16.	Colour of upper side pitch-black, much variegated with brown; body slightly narrowed posteriorly. ..	*tenella*, Spaeth, p. 298.
16′.	Colour different; body not narrowed posteriorly	17.
17.	Ground-colour brown, with the tubercles on the elytra, the scutellum, and two small spots on the pronotum black, and the four corners of the elytral expansion each with a black patch	[p. 293. *maculipennis*, Boh.,
17′.	Colour different	18.
18.	Upper side blackish mixed with red, the elytral expansions uniformly dark red.	*rubromarginata*, Boh., [p. 289.
18′.	Upper side and the four corner spaces on the elytral expansions reddish brown, the middle and apical margins of the elytral expansion yellow	*lenta*, Spaeth, p. 301.
19.	The outer anterior costa and the posterior one from the principal tubercle both bifurcate, one branch from the anterior one being the first longitudinal costa on the elytron; colour pitch-black variegated with brown	*corneola*, Spaeth, p. 299.
19′.	Only the outer anterior costa from the principal tubercle bifurcates soon after leaving the centre of radiation, one branch being the first longitudinal costa of the elytron	20.
20.	Upper side uniform red-brown, except the middle of the explanate margins of the elytra and some parts of the prothoracic expansion; costæ and tubercles lower, the tubercles not black	[p. 297. *bifenestrella*, Boh.,
20′.	Upper side dark red-brown, the tubercles black and higher .	*vicaria*, Spaeth, p. 291.

237 **Hoplionota circumdata**, *Wagener*.

Hoplionota circumdata, Wagener, Mitt. Münch. Ent. Verein, 1881, p. 17; Spaeth, Ann. Mus. Civ. Genova, xli, 1904, p. 69; id., Sarawak Mus. Jl. i, 1912, p. 115; id., Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 488.

Body almost circular; subnitid, dark red-brown, the lateral expansions lighter, the underside testaceous.

Head flat, smooth, and considerably prolonged in front, this prolongation being much broader than the forehead and its front margin cleft in the middle; the space between the eyes on the underside is sulcate. The antennæ are situated under this prolongation; the first joint is thick and the longest, the second smaller, the third to sixth slender. *Prothorax* a little more than twice as broad as the length from the apex of the head to the base of the pronotum, uneven, shining, and with two depressions in the middle of the base; there are a few large punctures in the depressions, along an oblique line on each side and in a semicircle across the middle of the disc; besides these, under a high power very minute punctures can be detected on the entire surface.

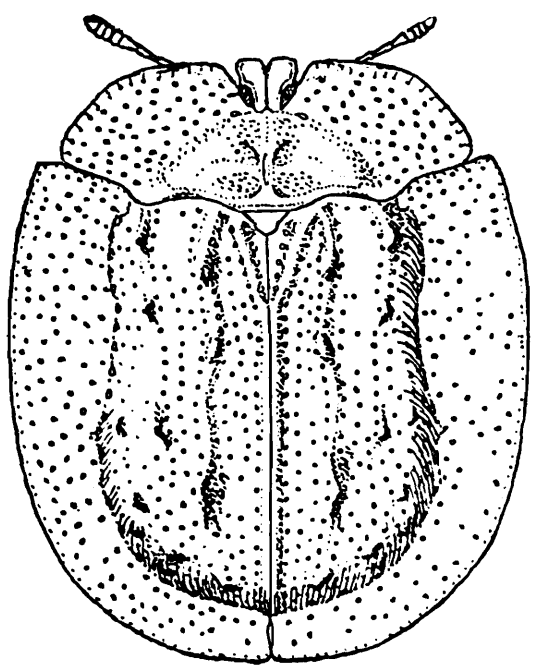


Fig. 94.—*Hoplionota circumdata*, Wag.

The lateral expansions are dull, with scattered punctures of varying sizes and shapes, the centres of which are more or less hyaline. *Scutellum* triangular, with the apex broadly rounded; the surface is smooth and shining, but under a high power very minute punctures can be detected. *Elytra* broader than the prothorax, very convex behind the middle, punctate-striate, the punctures being small and round; posterior to the humerus there is a concavity; from a little distance behind the scutellum the suture is raised; on each elytron there are several shining tubercles of various sizes; the lateral expansions have large punctures with hyaline centres. *Underside* smooth, impunctate.

Legs short and broad; the lobes of the third joint of the tarsi are large and project much beyond the claw-joint.

Length, 7–8 mm.; breadth, 6–7 mm.

INDIA. BURMA: Thingannyinaung to Myawadi, 900 ft., 24–26. xi. 1911 (*F. H. Gravely*). MALAY PENINSULA. SUMATRA. BORNEO.

Type in Wagener's collection.

238. Hoplionota rubromarginata, *Boh.*

Hoplionota rubromarginata, Boheman, Mon. Cassid. iv, 1862, p. 6; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 510.

Body subquadrate, with the sides rounded. The colour above is blackish, with the margins all round reddish; underside yellowish.

Head with the prolongation emarginate in the middle, and depressed; on the underside the interocular space is comparatively broader than in the other species and is similarly depressed and channelled. The antennæ are as usual in the genus. *Prothorax* a little less than three times as broad as its length in the middle, slightly depressed at the base, and the semicircular depression in the middle also feeble; the front edge of the lateral expansions is serrated; the hyaline punctures are moderately large, and some of them are more or less transverse. *Scutellum* more or less rough, triangular, and with the apex rounded. *Elytra* punctate-striate, the punctures being small and rounded. The suture is raised as usual, and bears minute teeth; on each elytron two longitudinal costæ can be traced; on the first there are four small black tubercles, the third being the largest and sending off a transverse branch towards the edge of the elytron; on the second costa there are four insignificant tubercles. *Underside* yellowish, smooth, impunctate. The legs are as usual short and stumpy.

Length, 5–5½ mm.; breadth, 4½ mm.

CEYLON.

Type in the British Museum.

239. Hoplionota prominens, *Spaeth.*

Hoplionota prominens, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 486.

Body oval, rotundate, shining; colour brown, the small tubercles on the elytra black; the underside testaceous.

Head with the dorsal exposed surface rough, but otherwise similar to that of *H. circumdata*, except that the median cleft is not so marked. The antennæ are of the usual type as in the genus. *Prothorax* as broad as the elytra at the base, punctate in the middle of the base and on a semicircular area in front; the hyaline spots on the lateral expansions are rather large and rounded. *Scutellum* smooth, broader at base than at the apex, which is rounded. *Elytra* punctate-striate, the punctures being rounded and approximate. The suture is raised as usual, and the two costæ are parallel, the first one bearing two small black

tubercles; there is a similar black tubercle at the humerus where the second costa commences, a minute one nearly at the middle of it, and behind this an elongate one transversely extended towards the margin; besides these, on the apical area of each elytron there are five similar black tubercles. *Underside* smooth, yellowish, impunctate.

Length 6¼ mm.; breadth, 5½ mm.

ANDAMAN ISLANDS.

Type in the British Museum.

The chief difference between this species and *H. circumdata*, to which it is related, is that the tubercles of the latter are higher and of a different type.

240. **Hoplionota dohertyi**, *Spaeth.*

Hoplionota dohertyi, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 488.

Body quadrate, shining. Colour of the disc of the prothorax and elytra red, this colour extending over the lateral expansions at the base of the elytra and at the external posterior angles; the lateral expansions of the prothorax and elytra hyaline and yellow; the underside flavo-testaceous, the sternum red.

Head with the exposed dorsal surface smooth, the vertical prolongation cleft in the middle and distinctly concave. The six basal joints of the antennæ are yellow, the five apical joints (forming the club) red and slightly pubescent; the third joint is almost as long as the second. *Prothorax* about twice as broad as the length from the apex of the head to the base of the pronotum, smooth, with two semicircular rows of punctures, one at the base and the other at about the middle. The sculpture of the lateral expansions appears to be a mosaic of many polygons, each of which has a hyaline centre; towards the edge they become smaller. *Scutellum* triangular, smooth, shining, impunctate, the apex broadly rounded. *Elytra* with the lateral expansions as broad as those of the prothorax, punctate-striate, the punctures being small and round. The suture is raised, and on a line parallel to it there are four tubercles, the third being the largest and sending out a branch laterally to meet a small tubercle; on a second line parallel to the first there are four small tubercles, the third being joined to the third of the first line by a cross branch, as just mentioned. The structure of the lateral expansions is the same as that of the prothoracic ones, but the hyaline centres are smaller. *Underside* smooth, impunctate. The lobes of the third joint of the tarsi are large and project much beyond the claw-joint.

Length, 5¼ mm.; breadth, 4½ mm.

ASSAM: Sudiya (*Doherty*).

Type in the British Museum.

241. **Hoplionota vicaria**, *Spaeth.*

Hoplionota vicaria, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 490.

Body quadrate, shining; colour rufo-testaceous, the disc of the prothorax and elytra much darker red, the apices of the tubercles black, the underside testaceous; the red colour of the elytra spreads over the lateral expansions at the base and near the outer apical angles, the colour on the posterior sloping part being much deeper than that of the anterior part.

Head with the exposed dorsal surface smooth, the prolongation of the vertex short and with a slight emargination in the middle of the front margin. The first joint of the antennæ is the longest and stout, the second to sixth joints gradually becoming successively larger. *Prothorax* as broad as the elytra, smooth and impunctate; the edge of the lateral expansions is slightly serrate, their surface with almost oval hyaline spots, which are much smaller, along the edge. *Scutellum* broader than long, smooth, shining, and impunctate, the apex broadly rounded. *Elytra* punctate-striate, the punctures being small and round. The suture is raised, and there are two interrupted longitudinal costæ, the first being broken up into four sharp tubercles, from the third and the fourth of which two small transverse costæ branch off and, joining with the corresponding tubercles of the second costa, almost reach the base of the lateral expansion; the second costa is similarly broken up into four tubercles. There are the usual hyaline spots on the lateral expansions. *Underside* yellow, smooth, dull. The first joint of the tarsi is small and rounded, the second large and bilobed; from the lobes of the third joint project long bristles which conceal the fourth joint.

Length, 5 mm.; breadth, 4 mm.

CEYLON: Eppawela; Kandy. ANDAMAN ISLANDS (*Roepstorff*).

Type in the British Museum.

This species is similar to *H. dohertyi* in form and coloration.

242. **Hoplionota horrifica**, *Boh.*

Hoplionota horrifica, Boheman, Mon. Cassid. iv, 1862, p. 8; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 493.

Body subquadrate. Colour testaceous; on the disc of the elytra the colour is darker and on the lateral expansions lighter; in the middle of each of the latter there is a small hyaline circular spot.

Head with the interocular space depressed; the prolongation is very slight. The antennæ are of the usual type. *Prothorax* about two and a half times as broad as the length in the middle, with a transverse series of punctures at base and a similar series in the middle. The front edge of the expansions is serrate, and the hyaline spots on them are rounded, forming the centres of

same reticulate areas. *Scutellum* smooth, triangular, the apex rounded. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures being small and rounded; on each elytron there are two longitudinal costæ each bearing four or five tubercles, and the third tubercle on the first costa, amalgamating with that on the second, rises to a very great height; the structure of

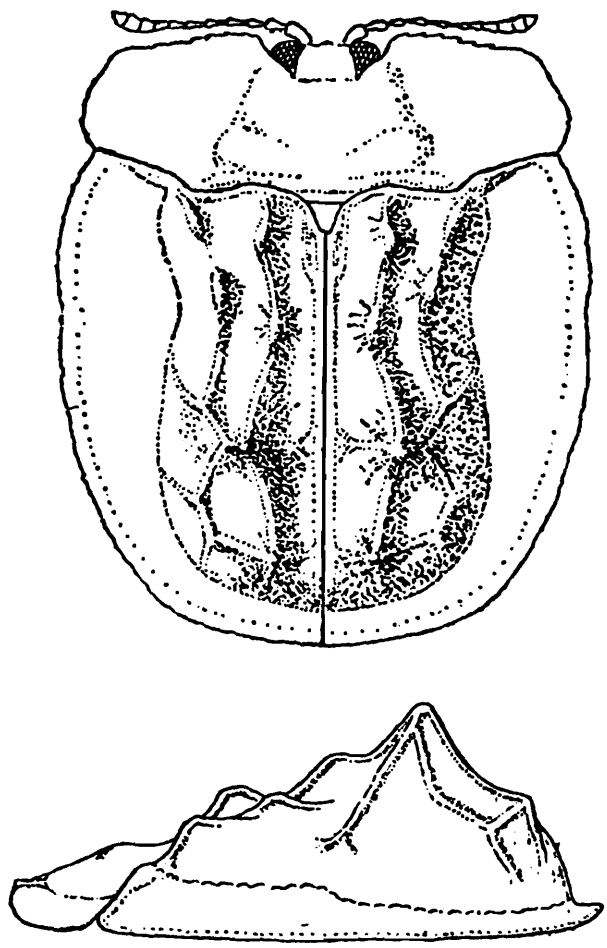


Fig. 95.—*Hoplionota horrifica*, Boh., dorsal and lateral views.

this large tubercle mainly consists of four ridges meeting at its apex. In the middle of each lateral expansion there is a small transparent circular patch, the hyaline spots on them being small and irregular. *Underside* lighter in colour.

Length, 5 mm.; breadth, 4 mm.

MADRAS: Nilgiri Hills. CEYLON.

Type in the British Museum.

243. **Hoplionota nietneri**, *Spaeth.*

Hoplionota nietneri, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 495.

Hoplionota horrifica, Boheman (*ex parte*), Mon. Cassid. iv, 1862, p. 8.

Almost rectangular, being broadest just behind the humerus and slightly and gradually narrowing behind; the apex is broadly rounded. Colour ferruginous yellow, with two indistinct darker bands on the explanate margins.

Head with the interocular plate strongly produced, pointed, and deeply emarginate. The third joint of the antenna is considerably shorter than the second, the three following joints much longer, and the joints of the more elongate club nearly twice as broad as long. *Prothorax* with the oblique basal margin on each side less directed forwards, so that the lateral margins are longer than in *H. horrifica*; the posterior angles are more distinct and the sides more oblique. *Elytra* with the principal tubercle very low, hardly rising above the dorsal carina, not higher than the basal and apical tubercles; the dorsal carina from the base to the apex is always distinct and of the same height throughout, and can also be recognised in the cavity in front of the post-basal point; the humeral carina is rather obliterated; the transverse carina is higher than the dorsal carina, forked outside, but the branch leading up to the principal tubercle does not reach it. The disc is coarsely punctate, more so than in *H. horrifica*; the explanate margin is equally coarsely punctate, but much less closely so in *horrifica*, being also broader and flatter; the humeral angles are more oblique and less pointed.

Length 5·4 mm.

CEYLON.

Type in Dr. Spaeth's collection.

I have not seen this species. The above is a translation from the original description in German.

244. **Hoplionota maculipennis**, *Boh.*

Hoplionota maculipennis, Boheman, Cat. Col. Ins. Brit. Mus. ix, 1856, p. 5; id., Mon. Cassid. iv, 1862, p. 7; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 501.

Body subquadrate; colour reddish brown, with two black spots on the pronotum (sometimes obsolete); on each elytron ten black spots, most of them covering the tubercles.

Head with the exposed surface between the eyes depressed and with a longitudinal impression down the middle; the prolongation is small and completely and broadly divided in the middle. The antennæ are of the usual type. *Prothorax* about two and a half times as broad as the length in the middle, depressed at the base and obliquely on each side from the middle, and with scattered punctures; the front edge of the expansions is serrate, and the hyaline spots are transversely elongate, more so than in any other Indian species of the genus. *Scutellum* black and granulate, triangular, the apex rounded. *Elytra* as broad at base as the prothorax, punctate-striate, the punctures being rounded; there are two short scutellar rows. On each elytron there are two costæ, the first bearing four black tubercles, of which the first (near the base) is elongate, the second small, and the third is the largest and does not send off a transverse costa to the suture but one to the second costa; the blackness of this tubercle spreads

out a good deal and covers the second costa also. *Underside* lighter in colour, the metasternum black.

Length, 5–5½ mm.; breadth, 4–4½ mm.

INDIA: N.E. Frontier (*Godwin-Austen*). UNITED PROVINCES: Ranikhet, viii. 1916, and Almora (*H. G. Champion*).

Type in the British Museum.

245. **Hoplionota birmanica**, *Spaeth.*

Hoplionota birmanica, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 501.

Body ovate. Black, dull; the antennæ, a portion of the front margin of the prothoracic expansion, the legs, abdomen, and a large patch in the middle of the lateral expansion of each elytron, yellowish brown.

Head with the exposed dorsal surface rough; the vertical prolongation has a slight emargination in the middle of the front margin, and on the underside it has a longitudinal groove along the middle line, which widens into two shallow depressions terminated by the clypeus. The antennæ are as usual in the genus. *Prothorax* as broad as the base of the elytra, obliquely depressed on each side, and with a few coarse punctures at base; the hyaline spots on the lateral expansions are transverse and narrow. *Scutellum* almost as broad as long, and rounded at the apex, near which is a slight depression. *Elytra* punctate-striate, the punctures being coarse and approximated; the suture is raised from a point a little posterior to the scutellum; the first costa is present, being raised to its highest point behind the middle and there sending off two branches, one towards the suture and the other to the second costa, which is obsolescent; the hyaline spots on the lateral expansions are brownish. *Underside* smooth. The tarsi have the first joint very small and round, and the fourth joint almost concealed under the long bristles of the lobes of the third joint.

Length, 5¼ mm.; breadth, 4½ mm.

BURMA: Karen Hills (*Doherty*).

Type in the British Museum.

246. **Hoplionota severini**, *Spaeth.*

Hoplionota severini, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 503.

Body quadrate, slightly narrowed posteriorly. Colour dark brown, with darker patches on the prothoracic expansions and lighter patches on the lateral expansions of the elytra; the scutellum brown bordered with black; the underside lighter brown.

Head: the dorsal exposed surface is smooth, with a faint longitudinal line in the middle; the vertex is very slightly produced, the prolongation being completely divided into two; on the underside the interocular space has a shallow triangular depression,

the apex being at the vertex and the base terminated by the clypeus. The first joint of the antennæ is large and thick, the antennal club being also very thick. *Prothorax* almost three times as broad as long in the middle, and as broad as the base of the elytra, smooth and even; the front edge of the expansions is serrated, the spots on them being less hyaline than in other species of the genus. *Scutellum* much broader at base than at the apex, which is broadly rounded, the sides being slightly concave; the surface is smooth and finely punctate. *Elytra* punctate-striate, the punctures being round and small and separated; there are several minute teeth along the raised suture, and the two longitudinal costæ can be recognised. On each elytron there are two large tubercles: the first is near the base on the line of the first costa, the second is larger and situated behind the middle, sending off transverse costæ which, joining with other similar costæ, make an irregular pattern on the posterior surface of the elytron. There are more or less hyaline spots on the lateral expansions. *Underside*: the lateral expansions are dark brown and shining, *i. e.*, they have the same colour as their upper side; the body is much lighter brown, bright and shining.

Length, 5½ mm.; breadth, 5 mm.

INDIA.

Type in the Brussels Museum; cotype in the British Museum.

247 **Hoplionota tenuicula**, *Spaeth.*

Hoplionota tenuicula, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 505.

Body quadrate, slightly narrowed behind, a little posterior to the external anterior angles of the elytra there is a little convexity at the side, across this portion of the elytra the breadth is greater than that of the prothorax. Colour brownish black, with the margins all round lighter, and a small patch on each elytral expansion nearly at the middle, yellowish, shining.

Head with the exposed dorsal surface depressed below the level of the eyes, more or less rough and with an impressed longitudinal line down the middle; there is a deep cleft in the middle of the vertical prolongation, and on the underside a triangular depression in the interocular space. The six basal joints of the antennæ yellowish brown, the club blackish brown; the first joint is large, the second thick and rounded. *Prothorax* uneven, with irregular depressions and scattered punctures; the front edge of the expansions is slightly serrated, the hyaline spots on them being large and transverse in the middle, and small and rounded at base. *Scutellum* black, broader at base than at the apex, which is rounded and slightly depressed. *Elytra* punctate-striate, the punctures being small, rounded, and separated; the suture is raised as usual, and the two costæ can be traced. On each elytron there are three prominent tubercles, one at the humerus, one at a little distance behind the base, and the third

(the largest) behind the middle; the transverse costæ branching off from the third tubercle, joining with similar ones, form an irregular pattern on the posterior part of each elytron; the tubercles are smaller than those of *H. severini*, Spaeth. *Underside* much lighter than the upper side.

Length, 5 mm.; breadth $4\frac{1}{4}$ mm.

BOMBAY: Khandala. SIKKIM: Darjiling. ASSAM: Sadiya (*Atkinson*).

Type in Spaeth's collection; cotype in the British Museum.

248. **Hoplionota duvivieri**, *Spaeth.*

Hoplionota duvivieri, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 506.

Body ovate, narrowest between the prothorax and elytra, slightly broadened in front, and broadest behind the middle of the elytra. The underside reddish yellow, the head and antennæ being hardly darker; the upper surface dark pitch-red, with the narrow border of the explanate margins rusty-red.

Head with the interocular prolongation pronounced, broadened and truncate at the apex. The antennæ are short and do not extend beyond the prothorax; the club is very short, half as long as the rest of the joints; the second joint is short and spherical, the third longer, the fourth elongate, nearly double the length of the third, the fifth and sixth slightly shorter than the fourth, the eighth to tenth very thick, their breadth being twice their length, the eleventh very small. *Prothorax* more than twice as broad as long; the posterior lateral angles are right angles, the sides being very little broadened towards the front; the anterior lateral angles are widely rounded. The disc is finely and very closely punctate, with a deep basal and a shallower central oblique impression; the explanate margins bear large punctures. *Elytra* moderately deeply punctate, partly in rows. The lower dorsal costa terminates before the apical margin, and is distinct and high only between the third and fourth tubercles. The basal and post-basal tubercles are hardly noticeable; the principal tubercle is much higher (but still low), twice as broad as high, and 4-carinate; the apical tubercle is lower by one-half, placed obliquely nearer the suture, and 4-carinate. The humeral costa is bent inwards under the humerus, then straight up to the explanate margin, which it meets in the middle, being always very low, hardly worth mentioning; the middle costa is proportionally high, but does not reach the explanate margin; the apical costa is only slightly lower, near the suture but not reaching it, directed towards the front, then steeply bent backwards and becoming obliterated externally. Of the tubercles of the humeral row only the marginal one, which is quite isolated, is distinct. The explanate margin is only slightly inclined very wide in front and much narrower behind, but not carinate,

more deeply punctate than the disc, there being one row of punctures on the edge.

H. duvivieri is related to *H. tenuicula*, but differs from it in having the prothorax widened in front, and the elytra widened behind the middle, and also in the entirely reddish yellow antennæ, the unicolorous upper surface, and the lower basal and the higher apical tubercles, which latter falls more steeply behind.

INDIA: Konbir.

Type in the Brussels Museum.

The unique specimen belongs to the Duvivier collection, and was mistakenly determined as *H. obscura*, Wagener.

The above is a translation from the original description in German. I have not seen the specimen.

249. **Hoplionota bifenestrella**, *Boh.*

Hoplionota bifenestrella, Boheman, Mon. Cassid. iv, 1862, p. 10; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 509.

Body quadrate. Colour of the upper side reddish brown, except the margins all round and two large almost circular hyaline spaces, one on each elytral expansion; the underside lighter, but the reddish brown of the hyaline lateral expansions shows through.

Head with the exposed dorsal surface plane, the prolongation small and divided longitudinally in the middle; on the underside the interocular space is deeply channelled. The structure of the antennæ is of the usual type; the club is of the same colour as the rest of the joints. *Prothorax* about two and a half times as broad as its length in the middle, smooth and with the usual depressions and punctures at the base and middle; the hyaline spots on the expansions are more or less elongate, and the front edge serrate. *Scutellum* triangular, with the extreme apex pointed; the surface is smooth, and under a high power fine punctures may be observed. *Elytra* as broad at the base as the prothorax, without tubercles and punctate-striate, the punctures being small, rounded and separated, and black inside. On each elytron two costæ are recognisable, which are not straight; on the first the places where tubercles should be are more or less raised, the usual transverse costæ being sent off to the side of the elytron from the third and fourth of these.

Length, $5\frac{1}{2}$ mm.; breadth, 4 mm.

BOMBAY: N. Kanara (*T. R. D. Bell*). CEYLON: Colombo (type).

Type in the Stettin Museum.

250. **Hoplionota clura**, *Spaeth.*

Hoplionota clura, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 511.

Body quadrate, very slightly narrowed posteriorly. Colour uniform brown, there being not much difference between the

colours of the upper and under sides, except that the elytra are rather darker.

Head with the eyes more convex than in the other species. The exposed dorsal surface is much depressed and is plane and smooth, the prolongation being short and completely divided by a longitudinal line in the middle; in these characters it is similar to *H. tenella*. On the underside also the interocular space is depressed. The antennæ are as usual in the genus, the colour of the club being the same as or only slightly darker than that of the other joints. *Prothorax* two and a half times as broad as its length in the middle, with a few punctures at base and sides; the front edge of the lateral expansions is serrated, some of the hyaline spots being rounded, and others are more or less elongate. *Scutellum* smooth and shining, much broader than long, the apex widely rounded. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures being small and rounded; there are very minute tubercles along the raised suture, and on each elytron two costæ can be traced. Along the first costa there is the post-basal tubercle, the usual second tubercle is wanting, and behind the middle is the largest tubercle, which is high and pointed, sending off three branches, one to the suture, a second to the side of the elytron, a third obliquely behind, meeting the second costa; posterior to the largest tubercle there is another smaller one which also sends off two transverse costæ, a small one to the suture and the other to the second costa. The second costa commences at the humeral callus, where there is a tubercle, and on the apical area a transverse costa branches off to the side. The hyaline spots on the expansions are as usual.

Length, 5 mm.; breadth, $4\frac{1}{4}$ mm.

MADRAS: Nilgiri Hills (*H. L. Andrewes*).

Type in the British Museum; cotype in Mr. H. E. Andrewes' collection.

This species bears a close resemblance in shape and size to *H. tenella*, but differs in its coloration and in having its largest tubercle higher.

251. Hoplionota tenella, *Spaeth.*

Hoplionota tenella, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 512.

Body quadrate, very slightly narrowed posteriorly, having a more elongate appearance than other species of the genus. Ground-colour testaceous, shining; the upper side variegated with fuscous, which predominates on the elytra, and also spreads over the lateral expansions of the thorax as well as those of the elytra; in the middle of each elytral expansion is a hyaline circular space; underside testaceous.

Head with the eyes more convex than in other species. The

exposed dorsal surface between the eyes is much depressed, plain and smooth; the prolongation of the head is short and completely divided by a longitudinal line in the middle; the base of the head black. On the underside the interocular space is also depressed, there being two furrows, one on each side close to the eyes. The antennæ are as usual in the genus; the first joint is the largest, the second more or less rounded, the club being darker than the other joints. *Prothorax* about three times as broad as its length in the middle, smooth, with a few punctures at base and in the middle; the front of the expansions is serrate, and the hyaline spots are large and more or less rounded. Near the eyes the colour of the pronotum is black. *Scutellum* smooth, much broader and darker at the base than at the apex, where it is depressed. *Elytra* at the base as broad as the prothorax, punctate-striate, the punctures being smaller nearer the suture than away from it, and dark inside. On the first costa there are four tubercles; the first one is post-basal; posterior to it is the second, which is small; then follows the third, which is the largest, sending out two obliquely transverse costæ, one to the suture and the other to the side of the elytron; the fourth tubercle is smaller, sending out a transverse costa which meets the second costa. The second costa, which is obsolete on a considerable portion of the elytron, commences on the apical surface with two small branches, and close behind them is a transverse costa going to the side of the elytron. There is a tubercle on the humeral callus.

Length, $4\frac{3}{4}$ mm.; breadth, 4 mm.

MADRAS: Nilgiri Hills, 3500 ft., xi. 1907 (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection.

252. Hoplionota corneola, *Spaeth.*

Hoplionota corneola, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 516.

Body oval, slightly narrowed posteriorly, shining. Antennæ testaceous, the club and first two joints piceous; the upper side nigro-piceous, the margins of the prothorax testaceous, the elytra variegated with testaceous; each elytral expansion with a large hyaline yellow space; the underside black, the abdomen testaceous, the legs piceous, the tarsi and apices of the femora and bases of the tibiæ lighter.

Head: the exposed interocular space is depressed and has a longitudinal groove in the middle, the prolongation being small and completely divided in the middle; on the underside the interocular space is black and has a triangular depression which is continued as a median furrow to the apex; the labrum and palpi are brown. The antennæ are of the usual type; on the underside the colour of the first two joints and the club is much lighter than above. *Prothorax* two and a half times as broad as

its length in the middle, with the usual depressions and punctures at the base and in the middle; the hyaline spots on the expansions are small and subquadrate. *Scutellum* small and impunctate, triangular, with the apex rounded. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures being small and rounded, and there are two short scutellar rows. A little distance behind the scutellum the suture is raised, and on each elytron two costæ can be traced; on the first costa there are four tubercles, the third being of almost the same height as the first; the second costa is not very distinct and is met by transverse costæ from the first at three places, *i. e.*, from the first, third, and fourth tubercles.

Length, 4½ mm.; breadth, 3¾ mm.

MADRAS: Nilgiri Hills (*Sir G. F. Hampson*).

Type in the British Museum.

253. **Hoplionota andrewesi**, *Ws.*

Hoplionota andrewesi, Weise, Deut. Ent. Zeits. 1905, p. 122; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 518.

Hoplionota nilgirica, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 517.

Body oval. The antennæ, the margin of the prothoracic expansions (together with a small area near the eyes), a semicircular transparent area in the middle of each elytral expansion, the apical margins of the elytra, and the legs, yellow; the rest of the body black.

Head: the emargination of the prothorax is wider than in other species, thus exposing more of the head to view; the dorsal surface between the eyes is deeply channelled; the prolongation is very small and completely divided in the middle, the depressed area being black, the rest yellow; between the antennæ there are two curved ridges. The labrum is brown, and the palpi yellow. The antennæ are of the usual type, the club (owing to the pubescence) appears a little darker than the rest of the joints. *Prothorax* about four times as broad as its length in the middle, with two oblique depressions from the middle, one transverse depression at base, and with a few scattered punctures; the hyaline spots on the lateral expansions are deeper and smaller. *Scutellum* trapezoidal, with the base broader than the apex, which is truncate and with a transverse line along it; the surface is finely granulate and shining black. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures being large, subquadrate and close to one another; behind the scutellum there is a depression containing a short row of punctures on each side of the suture, the depression itself being enclosed between two bifurcations of the raised suture. On each elytron two costæ can be traced; at the middle of the elytron the first costa forms a loop,

the posterior end of which emits a transverse ridge to the second costa and another to the suture; the second costa is plain throughout. The hyaline spots on the black area of the expansions are similar to the prothoracic ones; those on the yellow area are smaller and form the centres of well defined areas of various forms, viz. triangular, square, oblong, etc. *Underside*: the coloration of the lateral expansions shows through. The legs are yellow; the rest is black.

Length, $5\frac{1}{2}$ mm.; breadth, $4\frac{3}{4}$ mm.

MADRAS: Nilgiri Hills (*Sir G. F. Hampson*).

Type in the British Museum.

I have had the opportunity of comparing the type of *H. andrewesi*, contained in Mr. Andrewes' collection, with that of *H. nilgirica*, and am of opinion that they are the same species. The differences, viz. more rotundate form of body, lighter colour of the antennal club in *nilgirica*, and two small yellow spots on the base of the prothorax in *andrewesi*, fall within individual variations. Spaeth had not seen *H. andrewesi*.

254. **Hoplionota lenta**, *Spaeth.*

Hoplionota lenta, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 519.

Body oval. The antennæ, pronotum, disc of the elytra and the four corner spaces on the elytral expansions, dark reddish brown; the rest of the margin of the elytral expansions yellow; the disc of the pronotum blackish at the base and at the anterior margin, the inner apical angles of the expansions pale; the underside lighter than the upper side, but the metasternum black.

Head, as in *H. andrewesi*, more exposed than in other species. The eyes are comparatively more convex when viewed dorsally. On the upper side the interocular space is depressed, with a longitudinal impressed line down the middle; the prolongation is absent; on the underside the interocular space is depressed and channelled as usual. The antennæ are as usual in the genus. *Prothorax* about three times as broad as its length in the middle, its sculpture as usual in the genus; the hyaline spots are small. *Scutellum* finely granular, triangular, with the apex rounded. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures being small, rounded, and approximated; the suture raised from a little distance behind the scutellum. On each elytron two costæ can be traced, on the first of which there are four tubercles, the third being the highest and emitting two transverse costæ, one to the suture and the other to the second costa; the fourth tubercle also sends off two similar branches. The second costa commences at the humeral callus, which is raised into a tubercle, there being no others on it; near the apex it sends off smaller transverse branches.

Length, 5 mm.; breadth, 4½ mm.

MADRAS: Pondicherry (type); Shembaganur, Madura.

Type in Spaeth's collection; cotype in the British Museum.

255. **Hoplionota templetoni**, *Baly*.

Hoplionota templetoni, Baly, Trans. Ent. Soc. Lond. (N.S.) v, 1859, p. 158; Boheman, Mon. Cassid. iv, 1862, p. 12; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 522.

Body subrotundate. Colour shining, dark brown; each elytron with two large black spots; the underside lighter in colour.

Head more exposed than in most other species; the interocular space is depressed and has a groove in the front, the prolongation being very slight; on the underside the interocular space is depressed and channelled in the middle, as usual. The antennæ are comparatively long, extending beyond the prothoracic expansions; in structure they are as usual in the genus. *Prothorax* about three times as broad as its length in the middle, with the usual depressions and punctures at the base and in the middle; the apical emargination is larger than usual, and the hyaline spots are small. *Scutellum* plain but finely rugose, triangular, with the apex rounded. *Elytra* as broad at the base as the prothorax, punctate-striate, the punctures approximated, there being two short scutellar rows, behind which the suture is raised. On each elytron there are two well-defined costæ; the first bends inwardly at the middle, at which point the second costa meets it obliquely, the point of union of the two costæ corresponding to the position of the third or highest tubercle in other tuberculate species; one of the two large black spots covers this point, the other covering the bases of the costæ and the humerus, which latter is a little raised and impunctate.

Length, 7 mm.; breadth, 6½ mm.

CEYLON.

Type in the British Museum.

A specimen in the British Museum, identified by Dr. Spaeth as *H. templetoni* is described below (p. 303) as *H. quinquecarinata*, sp. nov. In this specimen the black spots are not well defined but occupy a considerable area of the elytra. There is a slight break in the first costa soon after its commencement.

256. **Hoplionota ochroleuca**, *Boh.*

Hoplionota ochroleuca, Boheman, Mon. Cassid. i, 1850, p. 38; Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 522.

Body oblong-quadrate. Colour rufo-testaceous, subnitid.

Head finely punctate, channelled in the middle. The base of the antennæ rufo-testaceous. *Prothorax* short, transverse, the apex deeply emarginate, the emargination at the base somewhat rotundate; the disc has the usual depressions and punctures at the base

and in the middle. *Scutellum* triangular, plain. *Elytra* punctate-striate, the punctures deep; there are two costæ, with the usual transverse costæ. *Underside* obsoletely punctate.

Length, 6 mm.; breadth, $4\frac{1}{2}$ mm.

INDIA.

Type in the Paris Museum.

257. **Hoplionota modesta**, *Wagener*.

Hoplionota modesta, Wagener, Mitt. Münch. Ent. Ver. v, 1881, p. 18.

Body subovate, narrowed posteriorly. Colour above rufo-testaceous, shining; the underside testaceous.

Prothorax with two series of transverse punctures on the posterior part of the disc; the lateral expansions with large dense punctures and crenulate. *Scutellum* impressed at the apex. *Elytra* irregularly punctate-striate, each with five tubercles, four of which are in a line parallel to the suture, the third being the largest, and another tubercle behind the humeral callus. Anterior to the middle there are two longitudinal costæ, and behind the middle one longitudinal and two slight transverse ones. There are two transverse infuscate vittæ behind the middle.

Length, 6 mm.; breadth, $5\frac{1}{4}$ mm.

The sculpture of the elytra is very strong, and the tubercle is high. The characteristic feature of this species is an oblique band on each elytron close behind the middle, which forms a mark on the uniform red-brown colour of the upper side.

The above is a translation of the description of Wagener in Latin and German. I have not seen the species. The locality is given as "India Orientalis." The type is in Wagener's collection.

258. **Hoplionota quinquecarinata**, sp. nov.

Body oblong-ovate, subnitid, the pronotum shining. Upper side reddish brown with the costæ darker, an area below the humerus and a large lateral irregular area from just behind the middle up to the apex on each elytron black; the explanate margins of the prothorax and the edges of those of the elytra yellowish, most of the basal portion of the elytral expansion reddish; underside slightly lighter than the upper side, with the sternum and the sides of the abdominal segments black.

Head: the median emargination of the anterior margin of the prothorax is so deep that the whole of the upper surface of the head and the eyes are exposed to view. The interocular process is not pronounced but deeply and longitudinally incised in the middle. The first joint of the antennæ is long and club-shaped, the second small and rounded, the third to sixth slender, the third shorter than the fourth, the fourth and fifth almost equal, the sixth a little shorter than the fifth, the rest forming a thick club. *Prothorax* nearly $3\frac{1}{3}$ times as broad as its shortest length, sloping,

convex, and uneven, and with two rows of punctures, one along the base and a semicircular one across the middle; the anterior edge of the explanate margin is faintly serrate; the lateral expansions bear deep punctures with hyaline centres. *Scutellum* triangular, with the apex rounded, and the surface not quite smooth; colour brown, with the edges faintly blackish. *Elytra* punctate-striate, and each with two costæ which are broken and raised into low tubercles in places; the suture is slightly depressed at the base just behind the scutellum, then raised throughout its length, bearing minute tubercles. The first costa is broken at a little distance after its commencement, where it is slightly raised, the position of the next or second tubercle being not much raised but marked by a black patch; then follows the principal tubercle of the elytron, which is low and forms the centre of radiation of five costæ: one is the first costa of the elytron, another (a short one) goes towards the suture, a third transversely joins the second costa of the elytron, or it may be regarded as the second costa itself bent round to join the centre of radiation; the remaining two are directed posteriorly, one being a continuation of the first costa, and the other, which lies between this and the anterior outer costa, is very low at the point where it reaches the centre of radiation, and it again, on the apical area, sends off two transverse costæ towards the margin and is also joined to the first costa of the elytron by a transverse costa; the two transverse ones towards the margin are short, and broken up into punctures not reaching the margin. *Underside*: the legs are short and stumpy, yellow-brown, the tarsi being darker. The sternum and abdominal segments impunctate and with very fine scattered hairs.

Length, 7½ mm.; breadth, 6 mm.

CEYLON.

Type in the British Museum.

Described from one example.

Spaeth has seen this specimen and doubtfully identified it as *H. templetoni*, Baly, which probably he had not seen. I regard it as a new species having good structural differences on the elytra.

259. **Hoplionota horni**, *Spaeth*.

Hoplionota horni, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiv, 1914, p. ?

Hoplionota rubromarginata, Weise (*nec* Boh.), Deut. Ent. Zeit. 1901, p. 49.

I have not seen this species, neither have I had an opportunity of reading Spaeth's description, because the volume of the journal in which it is published is not available in London, so far.

260. **Hoplionota flavicornis**, *Spaeth*.

Hoplionota flavicornis, Spaeth, Verh. Zool.-bot. Ges. Wien, lxiii, 1913, p. 520.

Body subrotundate, hardly one-quarter longer than broad,

slightly convex, moderately shining. Colour light reddish yellow, the head, antennal club, disc of prothorax and the scutellum slightly darker; the elytra up to the last row of punctures but one pitch-black, the explanate margins with two short, ill-defined, light brownish-yellow marginal branches, which take an indistinct course in the middle.

Head with the interocular process moderately prominent and much pointed, the longitudinal impression in the middle being indistinct. The antennæ extend much beyond the prothorax; the second joint is not spherical, the third much shorter, the fourth to the seventh twice as long as broad; the club is elongate, only slightly thicker than the basal joints and nearly as long, its joints being longer than thick. *Prothorax* two and a half times as broad as long, deeply emarginate in front, very slightly rounded off at the base, the basal margin almost transverse on each side, with the posterior angles rectangular and the sides rounded, without a trace of the front angles. The smooth shining upper surface has in the middle two small longitudinal grooves and a transverse impression in front of the base, which are finely punctate; the sides are grooved and sparsely punctate. *Elytra* a little broader at the base than the prothorax, slightly longer than broad, hardly dilated at the sides and broadly rounded off at the apex. The disc is thickly and coarsely punctate and with well-developed costæ, but without tubercles. The dorsal costa is of the same height from the base up to the last row of punctures but one at the apex; it is feebly bent inwards up to the post-basal point, then curves outwards to meet the middle costa and back again, the posterior limb of this curve being shorter than the anterior one, and then it runs in a perfectly straight line to the apex. The middle costa starts from the outside but not quite from the explanate margin, and takes a course rather far towards the front in a straight line up to the break between the anterior and posterior dorsal carinæ, as far as the suture, retaining the same height throughout. The apical costa commences inside at the dorsal carina, extending outwardly in three branches, which however do not reach the explanate margin, and turns forward in the anterior fork, without reaching the position of the chief tubercle. The humeral costa is reduced to an indistinct ridge, abbreviated in front and behind, between the humerus and the middle costa. The explanate margin is very broad, coarsely but obsoletely punctate, the punctures being shallower than those of the elytra.

Length, 4½ mm.; breadth, 4 mm.

INDIA.

Type in the Brussels Museum.

This species can be easily recognised by the long antennæ, the club of which is remarkably straight, the light scutellum, and the structure of the costæ. As regards the latter it is especially to be noted that the middle and dorsal carinæ do not intersect at

the point of approach and that the latter runs back from there quite straight and parallel with the suture.

The above is a translation from the original description in German. I have not seen the species.

Genus **CALOPEPLA**, *Hope*.

Calopepla, Hope, Col. Man. iii, 1840, p. 152; Boheman, Mon. Cassid. i, 1850, p. 8; Chapuis, Gen. Col. xi, 1875, p. 370.

GENOTYPE, *Calopepla leayana*, Latr.

This genus contains only four species, viz. *C. leayana*, *C. andrewesi*, *C. obscura*, and *C. mouhoti*. The last-named species, described by Baly, is found in Siam and is not known to occur within our region. I am doubtful about the stability of the second and third, probably they are only varieties of the first.

The characters of the genus are well marked. The insects are oblong-elongate, with the elytra at least with bright metallic coloration, bluish green and sometimes with a violet sheen. The *head* is imbedded in the prothorax up to the eyes, so that the mouth-parts are entirely concealed from view in its position of repose; viewed dorsally it looks vertical. The eyes, on the upper part, have a distinct margin, which is generally black. The antennæ are fairly stout, the six basal joints are punctured, and the five apical joints are dorso-ventrally flattened and bear fine longitudinal striations; the apical joint is pointed; the first joint is elongate, the second and third are almost equal, the fourth, fifth, and sixth gradually increase in length and size, the remaining joints being broader and equal to each other in length. In some cases the six basal joints are also more or less flattened, with the anterior lateral angles of each joint produced. The *prothorax* is always narrower than the elytra, the edges being very strongly reflexed, which is characteristic of the genus. The base in the middle is produced into a triangular lip which meets the scutellum. The *scutellum* is triangular or oval, with the apex rounded, and is deeply sunk below the sutural margins. The *elytra* are much broader at the base than the prothorax. The sculpturing is very rugose, there being strong costæ and deep irregular punctures between them; in some parts, especially at the sides, the punctures coalesce to form deep cavities. The *underside* is smooth and generally impunctate, but in some cases under a high power very fine and scattered punctures may be observed. On either side of each abdominal sternite there is a transverse depression. The claw-joint of the tarsi projects beyond the bilobed third joint.

In the following key I have included the Siamese species for convenience, as well as for the reason that it may be discovered within our limits.

Key to the Species.

1.	Insect entirely metallic bluish green	*mouhoti*, Baly.
1′	Insect with more than one colour .	2.
2.	Insect broad (breadth 8–9½ mm.); prothorax light yellow to dark red-brown; elytra greenish bronze with a bluish violet margin; generally only the first two joints of the antennæ share the colour of the prothorax	*leayana*, Latr., p. 307.
2′	Insect narrow (breadth 5·5–6·5 mm.); prothorax dark brown; elytra black, at least the four basal joints of the antennæ lighter in colour	3.
3.	Four basal joints of the antennæ rounded, their outer anterior angles not produced .	*andrewesi*, Ws., p. 309.
3′.	Five basal joints more or less flattened, with their outer anterior lateral angles produced	*obscura*, Ws., p. 309.

261. Calopepla leayana, *Latr.*

Imatidium leayanum, Latreille, Gen. Crust. et Ins. iii, 1807, p. 50, pl. ii, f. 7.
Cassida leyana, Olivier (err. typ.), Ent. vi, 1808, p. 951, 97, pl. v, f. 74.
Calopepla leayana, Boheman, Mon. Cassid. i, 1850, p. 9, pl. i, f. C.
Calopepla leayana ab. *nigriventris*, Weise, Deut. Ent. Zeits. 1897, p. 98.
Calopepla leayana, Maulik, Rec. Ind. Mus. ix, 1913, p. 105.

Body oblong. The species varies a great deal in colour; the antennæ are black, except the two basal joints, which are yellow or brown; the prothorax varies between light yellow and very dark or red-brown, the basal margin being edged with black; the elytra greenish bronze, with a bluish violet margin, which latter colour may spread over the whole elytra; the colour of the underside and legs, except the tarsi which are dark, is always that of the prothorax. Another form of colouring may be differentiated in which there is a predominance of the bronze over the green.

Head with the interocular space depressed and deeply channelled in the middle. The antennæ are fairly stout. The structure of the antennæ is not quite constant; for instance, in some examples the six basal joints may not be quite round, but show signs of flattening, and the anterior angles of each joint may be slightly produced. *Prothorax* generally narrowed in front (this character being more marked in some individuals than in others), depressed at the base and with a deep longitudinal impression down the middle; the central area is more or less raised and slopes towards the front and sides; the surface is smooth, and under a high power very fine and scattered punctures may be observed.

Scutellum oval, dark brown, smooth and impunctate. *Elytra* characterised by the highly raised costæ and deep irregular punctures between them, there being four principal costæ, of which the third is rather broken up in the middle; these ribs are often joined up by cross ribs, and in some individuals are less prominent; the humerus is rounded and elevated. *Underside*: the abdominal sternites are edged with black; the thoracic sternites, the coxæ, and the articulations of the legs have a blackish tinge.

Length, 14–15½ mm.; breadth, 8–9½ mm.

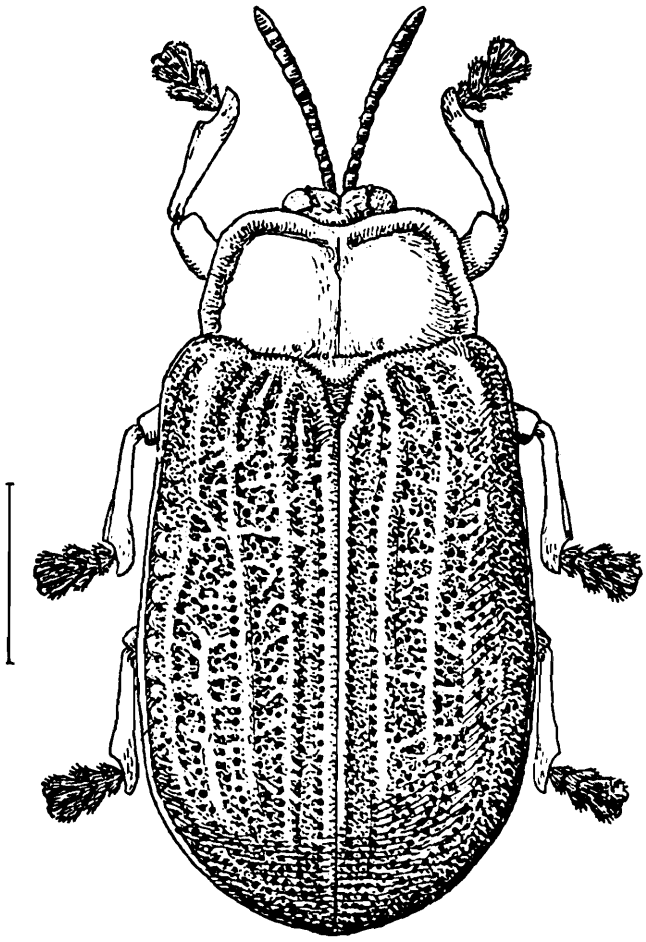


Fig. 96.—*Calopepla leayana*, Latr.

SIKKIM: Darjiling, 8000 ft.; Pashok, 2800 ft., ix. 1909; Dam Dim. BENGAL: Calcutta. BOMBAY: Poona (*F. Gleadow*). MADRAS: Nilgiri Hills (*Sir G. F. Hampson*). ASSAM: Tezpur, Naga Hills; N.E. Frontier; Cherapunji, Khasi Hills. BURMA: Sadon, 2500–3500 ft., Myitkyina district, v. 1911 (*E. Colenso*). INDO-CHINA: Laos (*Mouhot*); Poulan, Upper Mekong, v. 1918 (*Vitalis*).

There is one specimen from Poona in the Indian Museum with the following note:—"Feeds on the leaves of shivan tree, *Gmelina arborea*, 26. ix. 1893."

The example from the Nilgiri Hills, in the British Museum, is much smaller in size and similar in coloration to *C. andrewesi*. The specimens from Indo-China have the pronotum very dark red.

262. Calopepla andrewesi, *Ws.*

Calopepla andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 97.

The prothorax, the first joint and the underside of the first four joints of the antennæ, and the abdomen light shining brown; the upper side of the second to fifth joints of the antennæ, the coxæ, the bases of the femora, the apices of the tibiæ, and the tarsi blackish brown; the six apical joints of the antennæ, the head (except a small portion between the antennæ), elytra, prosternum, mesosternum, and a small portion of the metasternum black, but the elytra in different lights show a metallic sheen.

Similar to *C. leayana* except in the following points:—

Head with the antennæ differently coloured (see above). *Prothorax* with not only the basal margin but also the emarginate portion of the front margin edged with black. *Scutellum* with the black edging broader. *Elytra* with the costæ much lower and more or less plane, and thus appearing less strongly rugose.

Length, 11–15 mm.; breadth, $5\frac{1}{2}$–$6\frac{1}{2}$ mm.

Bombay: Belgaum (*H. E. Andrewes*).

Type in Weise's collection; cotype in Mr. H. E. Andrewes' collection.

This species differs from *C. leayana* in size and in the coloration of the various parts of the body. I am doubtful as to its stability, because the differences in size and colour might be considered to be merely individual variations, especially as the species occurs in South India. But I prefer not to include it in *C. leayana* until their specific identity has been established beyond doubt.

263. Calopepla obscura, *Ws.*

Calopepla obscura, Weise, Deut. Ent. Zeits. 1897, p. 98.

This species is closely related to *C. leayana* but is much narrower and smaller. The coloration is similar to that of *C. andrewesi*. The first five joints of the antennæ have the external apical angles produced. As has already been stated, I am doubtful if it is a good species.

Head black, with the interantennal space brown, much depressed and channelled along the middle. The four basal joints of the antennæ are brown both above and below, the striations on the six apical joints being less marked than in *C. leayana*. *Prothorax* with the basal margin only edged with black. *Elytra* very similar to those of *C. andrewesi*, black, with metallic bronzy reflections and the margins bluish violet. *Underside* smooth, impunctate, dark brown, with the sides of the sternum, the coxæ, bases of the femora, apices of the tibiæ, and the tarsi black.

Length, 11·5–14 mm.; breadth, $6\frac{1}{2}$–$7\frac{1}{2}$ mm.

Burma: Karen Hills, 3000–3700 ft., xii. 1888 (*L. Fea*); Maymyo, v. 1910 (*H. L. Andrewes*).

Type in Weise's collection.

Genus **PRIOPTERA**, *Hope.*

Prioptera, Hope, Col. Man. iii, 1840, pp. 153 & 176; Boheman, Mon. Cassid. i, 1850, p. 44; Chapuis, Gen. Col. xi, 1875, p. 368; Wagener, Mitt. Münch. Ent. Ver. v, 1881, p. 27.

Genotype, *Cassida octopunctata*, F. (Siam, Borneo).

The insects are large and ovate, posteriorly dilated and slightly narrowed in front. The colour is lighter or darker yellowish brown, as a rule with round black or blue-black patches on the prothorax and elytra.

Head exposed dorsally. The eyes are strongly convex, the space between them being generally depressed and sometimes with a longitudinal median impressed line. The length of the antennæ affords a secondary sexual character, being longer in the males and shorter in the females; generally the joints are of uniform thickness throughout, or they may be very slightly thicker towards the apex; the third joint is very little longer than the second, if not equal, and is shorter than the fourth; the apical joints have a tendency to become flattened; the last joint is the longest. The clypeus is broader than long and generally convex. *Prothorax* broader than long, with the basal margin very strongly bisinuate on either side, the edge being black, the posterior angles acute, the sides and anterior angles broadly rounded, and the anterior margin widely emarginate in the middle. The upper surface is smooth, convex, and sometimes very minutely and sparsely punctate, the explanate margins being flat. *Scutellum* triangular, with the apex rounded. *Elytra* with the basal margin very strongly bisinuate on either side, the edge being black and serrated, to which character the name of the genus refers. The surface is convex, sometimes rough and irregularly costate and sometimes quite smooth though punctate; the explanate margins are broadest in the middle, narrowing in front and behind, and with the usual honeycomb structure. *Underside* smooth and generally impunctate. The claw-joint hardly projects beyond the bilobed joint, the claws being simple.

Range. India, China, Formosa, the Malay Peninsula, Sumatra, Java, Borneo, the Philippines.

Key to the Species.

1.	Upper surface of elytra rough owing to the deep punctures and raised interstices.	2.
1′.	Upper surface smooth, without raised interstices, but sometimes punctate.	6.
2.	Prothorax with two blue-black spots; each elytron with four equal-sized spots . .	*decemstillata*, Boh., p. 311.
2′.	Prothorax without spots	3.
3.	Apical sutural angles of the elytra maculate; length 12–13 mm. .	*andrewesi*, Ws., p. 312.
3′	Apical sutural angles not maculate; length 9–10 mm.	4.

4.	Each elytron with three spots	*sexmaculata*, Boh., p. 314.
4′.	Each elytron with four spots	5.
5.	Metasternum black	*maculipennis*, Boh., p. 313.
5′.	Underside uniform yellow-brown	*punctipennis*, Wag., p. 314.
6.	Prothorax with two round black spots; each elytron with four spots .	7.
6′	Prothorax without spots; each elytron with one, two, five, or more spots.	8.
7.	Insect more oblong; explanate margins of the elytra much narrowed.	*decemmaculata*, Boh., p. 314.
7′.	Insect more broadened behind; the lateral explanate margins of the elytra broad	*decempustulata*, Boh., p. 316.
8.	Elytra with at most two spots on the posterior part of the explanate margins, one on each side	9.
8′.	Elytra with more than two spots. ..	10.
9.	Punctures on the elytra (particularly at the base near the suture) coarser, deeper, and larger; apical joint of the antennæ black	*impustulata*, Boh., p. 316.
9′	Punctures on the elytra much finer, smaller, and less deep; the six apical joints of the antennæ black or partly black	*bimaculata*, Thunb., p. 317.
10.	Elytra with a transverse row of four spots behind the middle, one being near the suture and the other on the explanate margin ..	[p. 317. *westermanni*, Mannh.,
10′.	Elytra with at least ten spots, five on each elytron.	*multiplagiata*, Wag., p. 318.

264. Prioptera decemstillata, *Boh.*

Prioptera decemstillata, Boheman, Cat. Col. Ins. Brit. Mus. ix, 1856, p. 9; id., Mon. Cassid. iv, 1862, p. 21.

Body rotundate. Colour reddish brown; the last joint of the antennæ, the sutural apical angles of the elytra, and the metasternum black; two round patches on the prothorax and four large round patches on each elytron blue-black.

Head convex, smooth, impunctate and black; the interocular space is depressed, with a longitudinal, median stria. The five basal joints of the antennæ are less punctate and more shiny than the rest; the third joint is of the same length as the second, and a little shorter than the fourth; the following joints become slightly thicker, but are almost of the same length. *Prothorax* very finely and sparsely punctate on the disc, with a median longitudinal stria, and a shallow depression with transverse lines anterior to the scutellum; the explanate margins show a honeycomb structure. *Scutellum* triangular, with the apex rounded; the surface is not smooth. *Elytra* as broad at base as the prothorax, elevated near the base and there with a large depression which is covered by a black patch. The humerus is smooth and very finely punctate, the rest of the disc being roughly and irregularly punctate; there are at least two costæ, and the explanate

margins show a honeycomb structure. The patch below the humerus is large and spreads a little over the explanate margin; of the two patches behind the middle one is near the suture, and the other at the side spreading well over the explanate margin. *Underside* with the abdominal sternites punctate.

Length, 9½ mm.; breadth, 8 mm.

INDIA: Assam (?).

Type in the British Museum.

265. **Prioptera andrewesi**, *Ws.*

Prioptera andrewesi, Weise, Deut. Ent. Zeits. 1897, p. 99.

Body subrotundate, convex. Colour yellowish brown, shining; the metasternum fuscous in the middle; on each elytron four round blue-black spots, and the apex of the suture tipped with black.

Head convex, smooth and impunctate; the interocular space is depressed, with a fine median longitudinal stria. The five basal

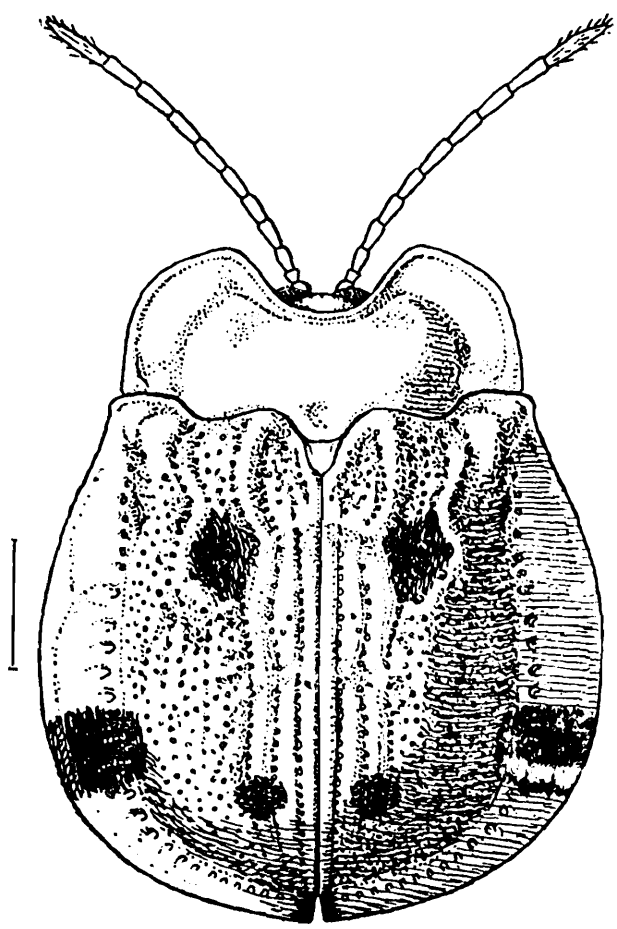


Fig. 97.—*Prioptera andrewesi*, Ws.

joints of the antennæ are smooth and impunctate, each except the first having a dark ring round it; the second joint is constricted at base, the third being equal to the second but shorter than the fourth; the six apical joints are punctate, each being longer than the preceding one; the last joint is the longest, a little flattened and blackish (except at the extreme apex), and sparsely hairy. *Prothorax* with the explanate margins impunctate, and with a

small depression in front of the scutellum. *Scutellum* triangular, with the apex pointed and rounded; the surface is smooth, shining and impunctate. *Elytra* a little broader at base than the prothorax, with the margins broadened behind. Posterior to the scutellum the surface is elevated, and on each side of this is a depression which is covered with a black patch. The humerus is smooth and impunctate; the rest of the disc with deep irregular punctures of varying sizes, those near the suture forming more or less regular rows, the interstices between them being costate. Below the humerus there is a small spot, which is sometimes obsolescent, and behind the middle there is a small spot near the suture and a much larger one a little in front of it on the explanate margin. *Underside*: the abdominal sternites are punctate and have a few bristly hairs.

Length, 12–13 mm.; breadth, 10 mm.

BURMA: Prome (*G. C. Corbett*).

Type in Weise's collection; cotypes in the British Museum and in Mr. H. E. Andrewes' collection.

266. **Prioptera maculipennis**, *Boh.*

Prioptera maculipennis, Boheman, Mon. Cassid. i, 1850, p. 50; Maulik, Rec. Ind. Mus. ix, 1913, p. 109.

Body subovate, moderately convex. Colour yellowish brown, shining; the two apical joints of the antennæ and the metasternum black; on each elytron there are four black patches, a transversely placed pair in front of the middle and the other behind it, the posterior outer patch fully covering the explanate margin.

Head smooth and impunctate; the interocular space with a median stria and sometimes with a few punctures. The five basal joints of the antennæ smooth, shining and impunctate; the sixth joint is more punctate, the seventh to the tenth with elongate punctures, more opaque, and more hairy; the third joint is longer than the second and shorter than the fourth, the following joints gradually grow a little longer and a little thicker. *Prothorax* with fine scattered punctures on the disc, the explanate margins impunctate. *Scutellum* triangular, smooth and impunctate. *Elytra* almost as broad at the base as the prothorax, and slightly elevated behind the scutellum, there being two strong ribs on the outer slope, between which is a large depression covered by a black patch. The humerus is smooth and impunctate, the rest of the disc bearing strong punctures of varying sizes, which have a tendency to arrange themselves in rows; the explanate margins are impunctate.

Length, 9 mm.; breadth, $7\frac{1}{2}$ mm.

Type in Guérin-Méneville's collection; there is a specimen in the British Museum with a label in Boheman's handwriting.

NEPAL: Dekhut, iv. 1907 (Ind. Mus.). ASSAM: Mangaldai district, Bhutan Frontier, xii. 1910 (*S. W. Kemp*).

267 **Prioptera sexmaculata**, *Boh.*

Prioptera sexmaculata, Boheman, Mon. Cassid. i, 1850, p. 49.

Body subrotundate, convex. Colour yellowish brown, shining; the two apical joints of the antennæ black.

The prothorax is more or less smooth and canaliculate. The elytra are strongly punctate, the punctures being more or less arranged in rows; posterior to the scutellum there is a slight elevation, with a depression on each side of it. On each elytron there are three black patches, the marginal one being subquadrate and the largest.

Length, 9½ mm.; breadth, 8 mm.

ASSAM.

Type in the Copenhagen University Museum.

This species is very similar to *P. maculipennis*. If the three spots on the elytron prove to be constant, then this may be a good species; otherwise I should not be surprised if it proved to be a variety of *maculipennis*. The anterior outer black patch on the elytron in most of the specimens tends to become obsolescent.

268. **Prioptera punctipennis**, *Wag.*

Prioptera punctipennis, Wagener, Mitt. Münch. Ent. Ver. i, 1877, p. 59; Weise, Deut. Ent. Zeits. 1897, p. 101.

Body subovate, moderately convex. Colour yellowish brown, shining; the two apical joints of the antennæ black; on each elytron there are four black patches, the posterior outer one fully extending to the edge of the explanate margin.

The head and the antennæ are the same as in *P. maculipennis*. The prothorax is impressed on the projecting part in front of the scutellum, and the disc is finely punctate. The elytra have very similar sculpturing to that of *maculipennis*, the black patches being in identical positions. In one specimen from Burma, which is in Mr. Andrewes' collection and identified by Weise, the explanate margins of the elytra show the transparent honeycomb structure. The underside is uniformly yellowish brown.

Length, 10 mm.; breadth, 8·5 mm.

BENGAL: Calcutta. BURMA: Paungde (*G. C. Corbett*).

Type in Wagener's collection.

Without being positive about it, not having had the opportunity of examining a series, I am of opinion that the differences on which this species is erected are individual and that it will probably prove to be the same as *maculipennis*.

269. **Prioptera decemmaculata**, *Boh.*

Prioptera decemmaculata, Boheman, Mon. Cassid. i, 1850, p. 60; Maulik, Rec. Ind. Mus. ix, 1913, p. 109.

Prioptera pallidicornis, Boheman, Mon. Cassid. i, 1850, p. 61.

Prioptera decemsignata, Boheman, Mon. Cassid. i, 1850, p. 62.

Prioptera nigricornis, Baly, Journ. Ent. ii, 1863, p. 9.
Prioptera decemmaculata var. *fuscicornis*, Weise, Deut. Ent. Zeits. 1897, p. 101.

Body more oblong than in other species of the genus. Colour varying from dark brown to light yellow-brown; the antennæ either completely black, partly fuscous, or completely light yellow; two round black spots on the prothorax, four on each elytron, two near the base (the outer one not reaching the explanate margin) and two behind the middle (the outer one reaching the margin); a black patch on the metasternum.

Head convex, smooth, shining, impunctate, generally light brown, but sometimes fuscous or black; the interocular space is

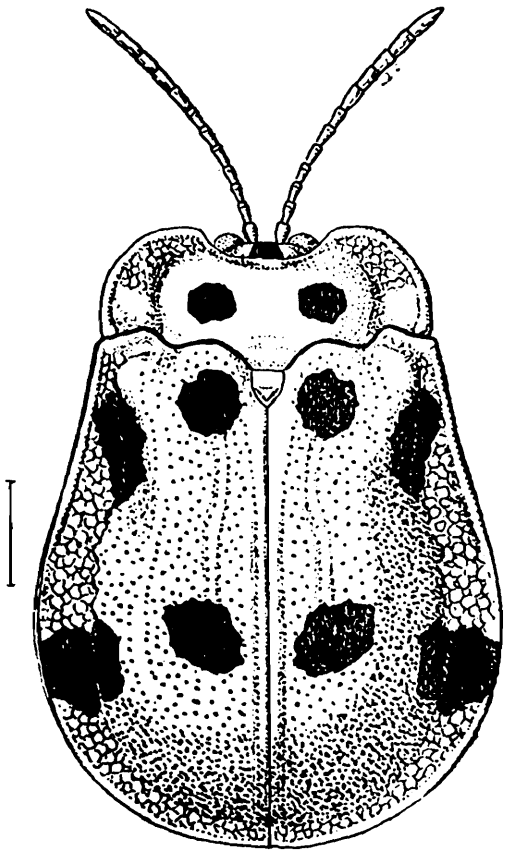


Fig. 98.—*Prioptera decemmaculata*, Boh.

depressed, with a longitudinal median stria. The six basal joints of the antennæ are cylindrical and impunctate, the five apical joints being rather flattened, with elongate punctures and slightly hairy; joints 2 to 6 are almost equal in length, the first joint being larger and longer. *Prothorax* very finely and sparsely punctate, as seen under a high power; the explanate margins have a transparent honeycomb structure. *Scutellum* triangular, or more or less elongate, with the apex rounded; the surface is smooth, shining and impunctate. *Elytra* as broad at the base as the prothorax, and not elevated at all behind the scutellum. The surface is convex and punctate, the punctures having a tendency

to be arranged in rows near the suture, but more confused at the sides; the humerus is impunctate.

Length, 9 mm.; breadth, 7 mm.

SIKKIM: Mungphu. ASSAM. BURMA: Tenasserim.

Type of 10-*maculata* in the Royal Zoological Museum, Berlin; type of *pallidicornis* in the Copenhagen Museum, and that of 10-*signata* in Mannerheim's collection; type of *fuscicornis* in Weise's collection, and that of *nigricornis* in the British Museum.

270. **Prioptera decempustulata**, *Boh.*

Prioptera decempustulata, Boheman, Mon. Cassid. i, 1850, p. 55.

I have included this species in the foregoing key because it is recorded by Boheman from India, although I can trace no specimen bearing an authentic label from that country. It is quite possible the species occurs in India, but it is chiefly reported from Siam, Malacca, Java and Borneo.

The insect is of the usual form and colour. The surface of the elytra is smooth and finely punctate. There are two round spots on the prothorax and four similar spots on each elytron in the usual positions. The species is very similar to *P.* 10-*maculata*, but the body is much broader behind the middle. The metasternum is black.

Length, $9\frac{1}{2}$–11 mm.; breadth, 8–9 mm.

Having compared examples of this species with *P.* 8-*punctata*, F., I feel very doubtful whether it is really a distinct species.

271. **Prioptera impustulata**, *Boh.*

Prioptera impustulata, Boheman, Mon. Cassid. i, 1850, p. 46, pl. ii, f. A.

Body subrotundate, convex. Colour uniform yellowish brown, shining; the apical joint of the antennæ is black. A variety has a fuscous spot on the explanate margin of each elytron behind the middle.

Head convex and impunctate; the interocular space is, as usual, depressed, and with a longitudinal median stria. The third joint of the antennæ is almost equal to the second, if not a little longer, but is much shorter than the fourth. *Prothorax* with the explanate margins lacking the honeycomb structure that is seen in many species. *Scutellum* triangular, with the apex rounded; the surface is smooth, shining and impunctate. *Elytra* as broad at the base as the prothorax, confusedly punctate, the punctures being round and deep, and occasionally tending to form irregular rows; the humerus is impunctate. The disc is elevated behind the scutellum, and there are three depressions at the base similar to those of *P. multiplagiata*, the difference being that in the latter they are covered with black patches.

Length, $10\frac{1}{2}$ mm.; breadth, 9 mm.

ASSAM.

Type in the Stockholm Museum.

I doubt the stability of this species. Boheman created many species on differences which, in my opinion, may come within the range of individual variations.

272. **Prioptera bimaculata**, *Thunb.*

Cassida bimaculata, Thunberg, Nov. Ins. Spec. v, 1789, p. 86, pl. v, f. 93.

Cassida bimacula, Herbst, Natursyst. Käf. viii, 1799, p. 262, pl. 132, f. 4.

Prioptera bimaculata, Boheman, Mon. Cassid. i, 1850, p. 52.

Body subrotundate. Colour yellowish brown, subnitid; the apex of the antennæ black; each elytron with a large, round, black patch behind the middle.

Head shining, finely and closely punctate, posteriorly lightly impressed, and with a median longitudinal stria. The antennæ are as usual. *Prothorax* finely and closely punctate, the explanate margins being subhyaline and reticulate. *Scutellum* triangular, smooth and shining. *Elytra* as broad at the base as the prothorax, convex, shining, finely and closely punctate, the punctures having a tendency to arrange themselves in series or rows; behind the scutellum there is a low elevation on the outer side of which there are two depressions; between the disc and the explanate margin the punctures are a little larger. *Underside* shining, finely and closely punctate. Legs yellowish brown, the claws dark brown.

Length, 9½ mm.; breadth, 8 mm.

ASSAM. CHINA (type).

Type in the Upsala Museum.

273. **Prioptera westermanni**, *Mannh.*

Prioptera westermanni, Mannerheim, Bull. Soc. Nat. Mosc. xvii, 1844, p. 864; Boheman, Mon. Cassid. i, 1850, p. 45; Maulik, Rec. Ind. Mus. 1913, p. 109.

Body subrotundate, convex, shining. Colour varying from dark reddish brown to light yellow-brown; the elytra with four round black spots forming a common transverse line behind the middle.

Head convex, smooth and impunctate; the interocular space is depressed, with a longitudinal stria. The antennæ are of uniform thickness throughout, except the apical joint which is laterally flattened; in the male the two apical joints are black, in the female only the terminal one; the six basal joints are impunctate, but the sixth sometimes shows a few punctures; the five apical joints have elongate punctures which sometimes unite to form longitudinal striations; the first joint is long and stout, the second very small, the third very slightly longer than the second, but much shorter than the fourth; the other joints are more or less equal, except the last which is the longest. *Prothorax* convex and smooth, sometimes with a faint longitudinal stria

along the middle. *Scutellum* triangular, with the apex acute; the surface is smooth, shining and impunctate. *Elytra* as broad at the base as the prothorax, with a slight elevation behind the scutellum, on the outer slope of which there is a marked depression, the area round it being uneven The whole surface of the elytra is irregularly punctate, uneven in places (particularly near the base) but not rough ; in the depressions and along the suture the punctures are coarse and large, being finer elsewhere.

Length, 12–13½ mm.; breadth, 10–10½ mm.

ASSAM. BURMA: Tenasserim; Shan Hills (*J. C. Brown*); Myawadi, Amherst district, Burmo-Siamese Frontier, 900 ft., xi. 1911 (*F. H. Gravely*).

274. **Prioptera multiplagiata**, *Wag.*

Prioptera multiplagiata, Wagener, Mitt. Münch. Ent. Ver. v, 1881, p. 26; Maulik, Rec. Ind. Mus. ix, 1913, pp. 109-110.

Body ovate, posteriorly dilated, convex. Colour yellow-brown, shining; besides the four spots in similar positions to those of *P. westermanni*, there are three to five spots near the base on each elytron.

Head smooth, shining and impunctate ; the interocular space is depressed and with a longitudinal median stria. The antennæ are fulvous, with the two apical joints black. *Prothorax* very remotely and minutely punctate, as seen under a high power. *Scutellum* triangular, with the apex acute, rounded ; the surface is smooth, shining and impunctate. *Elytra* as broad at the base as the prothorax, finely punctate, with a slight elevation behind the scutellum, on the outer side of which there are black patches; two more black spots occur in their neighbourhood, one on the smooth, impunctate humerus (which is sometimes obsolescent), and the other, a more elongate one, below it.

Length, 11 mm.; breadth, 9 mm.

ANDAMAN ISLANDS.

Type in Wagener's collection.

In the reference given above, I have noted a variety found among the specimens of the Indian Museum collection which has an oblique band across the elytra.

Genus **EPISTICTIA**, *Boh.*

Epistictia, Boheman, Mon. Cassid. i, 1850, p. 12; Chapuis, Gen. Col. xi, 1895, p. 371; Maulik, Rec. Ind. Mus. ix, 1913, p. 107.

GENOTYPE, *Epistictia viridimaculata*, Boh.

The insects belonging to this genus are generally oblong-ovate and slightly narrowed in front. The colour is dark red, with green spots on the elytra in some species. Viewed dorsally most of the upper side of the *head* is seen owing to the wide

emargination of the whole of the anterior edge of the prothorax. The eyes are strongly convex. The antennæ are moderately long, cylindrical and very sparsely covered with whitish hairs; the apical joint is bluntly pointed; all the joints, except three or four basal ones, bear elongate punctures or short longitudinal striations. The *prothorax* is broader than long, narrowed in front and widely emarginate at the apex. The basal margin is bisinuate, the edge being toothed, and the posterior angles acute; the lateral margins are gently reflexed. The upper surface is uniformly and roughly punctured. The *scutellum* is quadrate, or triangular with the apex broadly or narrowly rounded. The *elytra* are as broad at the base as the prothorax, the basal edge being bisinuate and toothed. The surface is irregularly punctate, the punctures sometimes running into each other; the margins are slightly explanate. The *underside* is always lighter in colour than the upper side, smooth and generally impunctate; at the sides of the abdominal sternites there are shallow transverse depressions. The claw-joint projects considerably beyond the bilobed third joint of the tarsi.

Range. India, Ceylon, Malay Peninsula, Siam and Indo-China.

There are only four species in the genus, all found within our faunal region.

Key to the Species.

1.	Pronotum and elytra without any spots or patches	*weisei*, Spaeth, p. 319.
1′	Pronotum or elytra with spots or patches.	2.
2.	Pronotum without well-defined spots	3.
2′.	Pronotum with two well-defined spots and elytron with nine (or seven) greenish or bluish patches	*viridimaculata*, Boh., [p. 320.
3.	Upper side dark red to light brown, with twelve greenish patches on each elytron	*reicheana*, Guér., p. 322.
3′.	Prothorax black; elytra orange-brown, with eight black patches on each	*fulvonigra*, Maulik, [p. 323.

275. Epistictia weisei, *Spaeth.*

Epistictia weisei, Spaeth, Deut. Ent. Zeits. 1914, p. 542.

Body oblong-ovate. Colour very dark red, the elytral margins having greenish reflexions; the antennæ black; the prothorax and the elytra without any spots or markings.

Head depressed between the bases of the antennæ, rugose; the colour is black, but often diluted with red. The antennæ are black, with the basal joint red or reddish brown. The mandibles are black. *Prothorax* with the lateral margins very slightly reflexed; the upper surface is uniformly convex from side to side and coarsely punctate, the punctures running into each other to form deep pits, and extending right up to the reflexed

margins. *Scutellum* smooth, almost semicircular. *Elytra* punctate, the punctures being coarse, and coalescing to form pits; the two costæ on each elytron, characteristic of the genus, are present, the second being more obsolescent.

Length, 8–9 mm.: breadth, 4–5 mm.

SOUTH INDIA: Parambikulam, Cochin State. BOMBAY: N. Kanara (*T. R. D. Bell*), 1700–3200 ft., ix. 1914 (*F. H. Gravely*—Ind. Mus.).

Type in Mr. H. E. Andrewes' collection.

276. **Epistictia viridimaculata**, *Boh.*

Epistictia viridimaculata, Boheman, Mon. Cassid. i, 1850, p. 15.
Epistictia parryi, Baly, Jour. Ent. ii, 1863, p. 8.
Epistictia perplexa, Baly, l. c. p. 7.
Epistictia marginata, Kirsch, Mitt. Zool. Mus. Dresden, i, 1875, p. 56.
E. viridimaculata var. *collaris*, Weise, Deut. Ent. Zeits. 1897, p. 99.
E. viridimaculata var. *trivandrumensis*, Maulik, Rec. Ind. Mus. ix, 1913, p. 108.

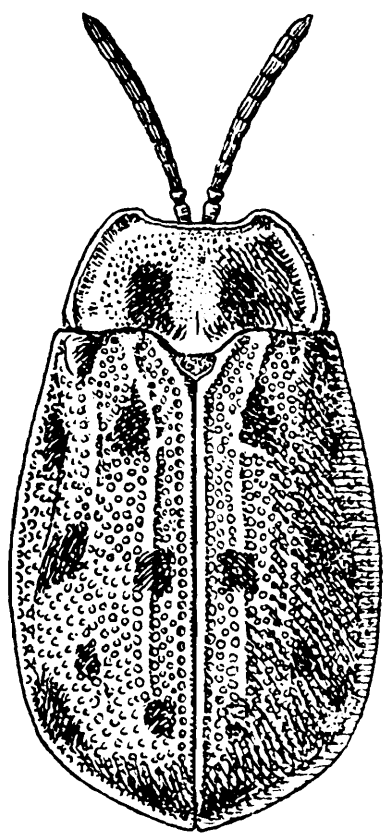


Fig. 99.—*Epistictia viridimaculata*, Boh.

Body oblong-ovate, slightly narrowed in front. The colour varies from dark red to light brown or orange-brown; the antennæ are black; the prothorax with two well-defined roundish

greenish or bluish spots; each elytron with nine similar spots. The colour and markings of the species are variable.

Head depressed on the vertex, as well as between the bases of the antennæ, with a deep longitudinal impression in the middle; it may be either quite rugose and punctate, or more or less smooth. The antennæ are as usual in the genus; the two basal joints are often of the same colour as the body. The mandibles are black. *Prothorax* with the lateral margins slightly reflexed; the disc is punctate, sometimes rather closely and coarsely, the punctures coalescing to form large pits, while in other specimens they may be finer and more sparse, usually being most numerous in the centre; there is always a median longitudinal stria. *Scutellum* triangular, smooth, generally impunctate, with the apex rounded. The shape slightly varies, this variation depending on the rotundity of the apex; when it is broadly rounded the scutellum looks more quadrate, and when narrowly rounded it assumes more of a triangular form. *Elytra* irregularly punctate, with the two usual costæ on each. There are large spots on each elytron disposed as shown in the figure; the spots vary in size, but not in their position. In one variety from Pegu the spots are generally reduced, the second one of the first line (near to the suture) is missing, the squarish oblique spot is small, and one behind is missing, so that there are only seven spots on each elytron; one of the Pegu specimens again does not possess the prothoracic spots.

Length, 8–12 mm.; breadth, 5–7 mm.

PUNJAB. NEPAL (type). SIKKIM: Mungphu. ASSAM: Ukhrul, 6400 ft., Manipur (*Rev. W. Pettigrew*). BURMA: Pegu; Prome, Paungde and Shweggyin (*G. C. Corbett*). SIAM. INDO-CHINA: Cambodia. MALAY STATES: Perak.

Type in the Geneva Museum.

The following varieties may be specially noticed.

E. viridimaculata var. **parryi**, *Baly*.

Colour yellow-brown, with blue-black spots, the last one of the outer elytral row always reaching the extreme margin. The prothorax rather less narrowed in front; the elytra more narrowed near the base and distinctly flattened on the disc, especially in the basal half; the antennæ appreciably more slender than in the typical form.

ASSAM.

Type in the British Museum.

E. viridimaculata var. **trivandrumensis**, *Maulik*.

One example from Trivandrum, South India, has the prothorax completely yellow without any trace of the greenish spots.

Type in the Indian Museum.

277. **Epistictia reicheana**, *Guér.*

Calopepla reicheana, Guérin, Icon. Règne Anim. ii, 1844, p. 286; Boheman, Mon. Cassid. i, 1850, p. 11.
Epistictia reicheana, Maulik, Ann. Mag. Nat. Hist. (9) i, 1918, p. 74, fig.
Epistictia selecta, Boheman, Mon. Cassid. i, 1850, p. 13, pl. i, f. *d*.
Epistictia matronula, Boheman, Mon. Cassid. i, 1850, p. 14; Weise, Deut. Ent. Zeits. 1901, p. 49.

Body oblong-ovate, slightly narrowed in front. The colour varies from very dark red to light brown; the antennæ black, in some specimens tinged with red; on each elytron there are twelve green spots or patches.

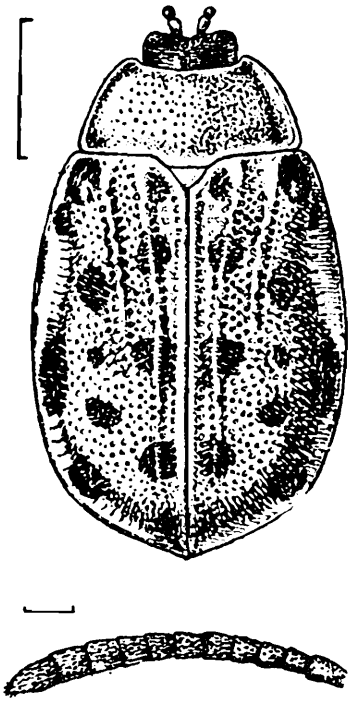


Fig. 100.—*Epistictia reicheana*, Guér.

Head: the front is depressed, more or less rugose, with a deep longitudinal impression in the middle passing between the bases of the antennæ. The colour is dark red, sometimes with black patches, the eyes and mandibles black. The middle part of the antennæ is slightly thicker than either the basal or the apical part; the four basal joints are more shining than the rest, and finely and sparsely punctate; the seven apical joints are opaque and covered with elongate punctures, which sometimes form fine striations; the length of the joints is more or less uniform. *Prothorax* with the lateral margins gently reflexed and impunctate; the disc is coarsely punctate near the base, the punctures running into each other to form rather deep pits. *Scutellum* dark red, broader than long, more or less quadrate, with the apical margin widely rounded; the surface smooth and impunctate. *Elytra* irregularly punctate, the punctures forming (particularly at the sides) a honeycomb structure, and often coalescing. On each elytron, separated from the suture by two rows of punctures,

there is a costa which does not reach the apex, and another commencing on the inner side of the humerus and terminating in the middle. On each elytron there are twelve greenish spots disposed in three longitudinal rows as follows: the juxta-sutural row contains five spots arranged as in *E. viridimaculata* (fig. 99) with the addition of a small one at the extreme base; the second row contains four spots, one on the shoulder, the third at the middle, and the fourth midway between the third and fourth of the first row; the marginal row consists of three large spots, the hind one alone extending to the extreme edge and often deeply sinuate on its posterior margin. *Underside* much lighter in colour than the upper side, except the pro- and mesosterna.

Length, 8–11 mm.; breadth, 5–7½ mm.

MADRAS: Trivandrum; Visapur (type). CEYLON.

Type in the British Museum; that of *selecta* in the Stockholm Museum.

I have already (*l. c.*) fully explained my reasons for sinking *E. selecta*, Boh., as a synonym of *E. richeana*, Guér. *E. matronula*, from Ceylon, differs from the typical form only in having the ground-colour much paler, so that the spots stand out much more boldly.

278. **Epistictia fulvonigra**, *Maulik*.

Epistictia fulvonigra, Maulik, Rec. Ind. Mus. ix, 1913, p. 107, fig.

Body oblong-ovate, slightly narrower in front. The antennæ black; the prothorax black, with the reflexed margin fulvous; the scutellum black and shining; the elytra dark orange-brown, subnitid, with eight black spots on each; the underside and legs black and shining. The colour and markings are completely different from those of all other species of the genus.

Head not very prominent, rugose, coarsely punctate, depressed between the bases of the antennæ; black, with a small rufescent area in the middle of the front, which colour extends outwards below the base of each antenna. The labrum is rufescent, especially at the base. The antennæ are black, the four basal joints finely punctate, the rest finely striated. The eyes are oblong and moderately convex. *Prothorax* with the sides very slightly curved, the anterior angles obtuse and the posterior acute. The base in front of the scutellum is thickened, shining and impunctate; there is an impunctate shining line down the middle of the disc; the centre of the disc is more finely punctate, the punctures becoming coarser and running into each other towards the sides. *Scutellum* broader than long, subquadrate, almost straight at the base, with the apex rounded, the lateral margins very slightly reflexed towards the base, and the basal angles very acute; the surface is impunctate, black and shining. *Elytra* coarsely punctate, with two shining costæ on each, that closer to the suture extending for about two-thirds or a little more of the length, and the second ending at the middle; the margins are slightly

explanate. There are eight black spots on each elytron disposed as follows:—one on the humeral callus, which is prominent, shining and impunctate; on the line of the first costa there are three spots: one just beyond the middle, the second at the point where the costa ends, the third beyond this point on the sloping apical portion of the elytron; there is a very small and obsolete spot at the point where the second costa ends, and a large spot at about the middle of the elytron just outside this costa; finally, there are two on the explanate margin, one behind the humerus, the other about one-third the length of the margin from the apex at the point where the margin curves inwards. *Underside* shining black, the apex of the prosternal process, the inner side of the middle and the hind coxæ, apices of the tibiæ, lobes and claws of the tarsi being more or less rufescent; the underside of the prothoracic and the elytral margins is reddish brown. The prosternal process is margined at the sides, expanded apically, with bluntly triangular apex. On either side of each abdominal segment is a slightly raised transverse ridge surrounded by a depression; these ridges are reddish in colour.

Length, 11 mm.; breadth, 6½ mm.

BURMA: Upper Shan Hills (*J. C. Brown*).

Type in the Indian Museum.

Genus **ASPIDOMORPHA**, *Hope*.

Aspidomorpha, Hope, Col. Man. iii, 1840, p. 158; Boheman, Mon. Cassid. ii, 1854, p. 242; Chapuis, Gen. Col. xi, 1875, p. 407; Weise, Deut. Ent. Zeits. 1897, p. 105.

GENOTYPE, *Cassida miliaris*, F.

The insects of this genus are characterised by the comb-like structures at the base on the inner and outer sides of the claws. The inner comb consists of three to four pointed unequal teeth, the basal one being the smallest, and the outer comb is composed of two to three teeth of similar form. The insects are generally rotundate, the greatest breadth nearly approaching the length.

Head completely concealed by the front explanate margin of the prothorax and more or less imbedded in a cavity beneath it. The eyes are elongate oval. The clypeus is smooth and generally has a gentle convexity. The six basal joints of the antennæ are slender and hairless, the apical ones being thicker and hairy. The first is long and club-shaped, very often as long as the third joint; the second is much shorter than either the first or third; the third very long and slender and a little shorter than the fourth and fifth together, the latter two almost equal or the fifth very slightly shorter than the fourth, the sixth shorter than the fifth; from the seventh the joints become gradually thicker. *Prothorax* semi-elliptical, transverse, the base almost straight or gently bisinuate on either side. The upper surface is convex and slopes from the base to the apex, as a general rule smooth and impunctate, but in some species finely punctate; the explanate margin is ample,

transparent, gently reflexed and shows a honeycomb structure. *Scutellum* triangular, smooth, impunctate. *Elytra* broader at the base than the prothorax, the basal edge being gently sinuate and half of it serrate. Posterior to the scutellum the dorsal surface is either plane or raised into a conical hump; the sculpturing is simple, consisting of small punctures which tend to form regular rows near the suture, but become confused towards the sides and apex; the explanate margin is transparent, generally broad, and has a honeycomb structure.

Range. Africa, India, Indo-China, the Malay Peninsula and the adjacent islands, and Japan.

The colour of dried specimens is quite different from that of the living insects. In life some species have a bright golden colour with reflections of various tints of great beauty, which may be restored by thoroughly soaking the dry insects in water. In the following descriptions the colour of the dried specimens only is indicated. The arrangement of the species of this genus is rendered difficult by their variability, which is probably due to the wide distribution of some of them, thus giving rise to forms differing in colour, markings, and even in size without presenting sufficient structural differences to justify their separation into distinct species.

Key to the Species.

1.	Posterior to the scutellum the dorsal surface is raised into a *pointed* conical hump	2.
1′.	Posterior to the scutellum the dorsal surface is not raised into a pointed conical hump	10.
2.	The anterior and posterior angles of the elytral explanate margins marked with dark patches	3.
2′.	The anterior angles only thus marked.	8.
2″.	Neither the anterior nor the posterior angles thus marked. . . .	*fuscopunctata*, Boh., p. 326.
3.	Insect never larger than 8 × 7 mm. .	4.
3′	Insect always much larger than 8 × 7 mm.	5.
4.	The upper surface of the prothorax finely punctate	*inuncta*, Boh., p. 327.
4′.	The upper surface of the prothorax impunctate	*indica*, Boh., p. 327.
5.	The colour has a greenish tinge .	*spaethi*, Maulik, p. 328.
5′.	The colour has not any greenish tinge.	6.
6.	The elytra, excluding the explanate margins, uniformly dark brown . .	7.
6′	The dark brown colour on the elytra is chequered, and the margins of the anterior lateral angles are not generally dark brown	*inquinata*, Boh., p. 328.
7.	The explanate margins very broad	*sanctæ-crucis*, F., p. 329.
7′.	The explanate margins narrow	*birmanica*, Spaeth, p. 330.

8.	The suture marked with dark brown at the extreme apex.	*chandrika*, Maulik, p. 331.
8′	The suture not dark brown at the extreme apex	9.
9.	Insect large, about 10 × 9 mm. or larger	*dorsata*, F., p. 332.
9′.	Insect smaller, about $7\frac{1}{2}$ × 6 mm. or smaller	*furcata*, Thunb., p. 333.
10.	Insects larger (9–15 mm.) with numerous black markings on the elytra and, as a rule, with four patches on the explanate margins	11.
10′	Insects smaller (5–9 mm.), with brown, but not black, markings on the elytra	12.
11.	The explanate margins of the elytra at their widest almost as broad as the disc	*miliaris*, F., p. 334.
11′.	The explanate margins of the elytra at their widest little more than half as broad as the disc; insect more elongate	*orientalis*, Boh., p. 336.
12.	The anterior and posterior angles of the elytral explanate margins marked with dark brown patches; length, $5\frac{1}{2}$ mm.	*andrewesi*, Spaeth, p. 338.
12′.	The anterior and posterior angles are not thus marked; length, 7–9 mm.	*fusconotata*, Boh., p. 338.

279. **Aspidomorpha fuscopunctata**, *Boh.*

Aspidomorpha fuscopunctata, Boheman, Mon. Cassid. ii, 1854, p. 298; Weise, Deut. Ent. Zeits. 1897, p. 104; Spaeth, Sarawak Mus. Jl. i, 1912, p. 117.
Aspidomorpha rubrodorsata, Boheman, Mon. Cassid. ii, 1854, p. 310.

Body ovate. Very similar to some specimens of *A. dorsata*, F., but differentiated at sight by the absence of the patches at the base of the explanate margin of the elytra. Colour pale yellowish brown, the punctures on the elytra darker, thus giving the elytra a spotted appearance.

Head: in a specimen before me from the Nilgiri Hills only the last joint of the antennæ, except the extreme apex, is black; in another specimen from the same locality the last joint (excepting the extreme apex) and a portion of the penultimate joint are black; Boheman records the last two joints as black. *Prothorax* semi-elliptical, much narrower than the base of the elytra, smooth and impunctate; the explanate margin is transparent with a honeycomb structure. *Elytra* with a small pointed conical hump behind the scutellum, and with ill-defined rows of fine punctures which are deeply coloured, the surface being quite smooth.

Length, 9–10 mm.; breadth, 8–9 mm.

SIKKIM: Mungphu. MADRAS: Nilgiri Hills; Travancore. MALAY PENINSULA.

Type in the Stockholm Museum.

280. Aspidomorpha inuncta, *Boh.*

Aspidomorpha inuncta, Boheman, Mon. Cassid. ii, 1854, p. 301; Spaeth, Deut. Ent. Zeits. 1914, p. 543.

Body subrotundate. Colour pale fulvous, subnitid; the last two joints of the antennæ are black; the elytra faintly variegated with green, the anterior and posterior angles with dark brown patches on the underside.

Head finely and closely punctate. *Prothorax* of the usual shape, the basal margin slightly sinuate on either side; the upper surface is very finely and closely punctate. *Elytra* with the humerus prominent and rounded, and with a pointed conical hump behind the scutellum, the sculpturing consisting of ill-defined rows of fine and remotely situated punctures. *Underside* with fine transverse striations; the legs obsoletely punctate.

Length, 8 mm.; breadth, 7 mm.

MADRAS: Malabar.

Type in M. Réné Oberthur's collection.

I am doubtful about the validity of this species. I have examined many specimens of *Aspidomorpha* from South India, but have not found one in which the surface of the prothorax is punctate. I have not had the opportunity of examining the type.

281. Aspidomorpha indica, *Boh.*

Aspidomorpha indica, Boheman, Mon. Cassid. ii, 1854, p. 318; Weise, Deut. Ent. Zeits. 1905, p. 123.

Aspidomopha egna, Boheman, Mon. Cassid. ii, 1854, p. 317.

Body subrotundate, shining. Disc of the elytra and the patches on the four corners of the explanate margins brown—in some cases they are very dark brown; the prothorax, the explanate margins, and the underside yellowish brown, much lighter than the colour of the elytra.

Head: the clypeus is convex, but with a longitudinal impression along the middle. The last joint of the antennæ (except the extreme apex on the underside) and a small portion of the penultimate joint are black; this is a variable character. *Prothorax* smooth and impunctate, with the basal edge almost straight or slightly sinuate near the scutellum. *Elytra* with a small conical pointed hump behind the scutellum and one or two depressions below it. The sculpturing consists of about nine rows of fine punctures, which are more approximated to each other near the margin than near the suture. The punctures in a row often form separated groups of twos and threes.

Length, 8 mm.; breadth, 6½ mm.

SIKKIM: Darjiling, 4000 ft. (*Lord Carmichael*, Ind. Mus.). MADRAS: Samalkot, Godavari district, ix. 1912.

Type in the British Museum.

In the specimens from South India the patches at the posterior lateral angles are smaller, and fine markings are also seen on the elytra. Having examined the specimens of *A. egna*, Boh., in the British Museum, I am of opinion that it is conspecific with *indica*. Sometimes in examples of *egna* the patches on the elytral margins are broadened and diffused. I am also inclined to the view that *A. amabilis*, Boh., and *A. mutilata*, Boh., are also varieties of *indica*, although they occur in Java, Sumatra, and the Malayan region generally. But it is difficult to pronounce an opinion definitely on this point until the matter has been established by breeding experiments. The occurrence of a great number of specimens from the Darjiling district and their perfect agreement with the type of *indica* in the British Museum leads me to adopt that as the name of the species.

282. **Aspidomorpha spaethi**, *Maulik*.

Aspidomorpha spaethi, Maulik, Ann. Mag. Nat. Hist. (9) i, 1918, p. 324.

Body rotundate. Colour dirty brown with a greenish tinge, shining; on the underside of the explanate margins at the four corners of the elytra there are deep red-brown patches, which show through on the upper side; the two apical joints of the antennæ black.

Head: the clypeus is rather short so that the mouth-parts are more approximated to the base of the antennæ. *Prothorax* semi-elliptical, with the basal margin gently bisinuate; the disc is unevenly convex, smooth and impunctate. *Elytra* with a pointed conical hump behind the scutellum, and the humerus smooth, shining and impunctate. The surface is dispersely punctate-striate, the punctures being a little coarser at the base and near the suture, and arranged in irregular groups in the rows; the surface of the explanate margins is slightly convex above the four dark patches. *Underside* dirty brown, shining, smooth. The legs are sparsely covered with hair; in the dried specimens before me the tarsi are decidedly green in colour.

Length, 9–10 mm.; breadth, 8–9 mm.

Madras: Nilgiri Hills (*H. L. Andrewes*).

Type in Mr. H. E. Andrewes' collection.

Described from four examples in Mr. H. E. Andrewes' collection. These specimens bear Spaeth's manuscript name *A. acuta*. I could trace no published description of the insect, and therefore decided to describe it.

283. **Aspidomorpha inquinata**, *Boh.*

Aspidomorpha inquinata, Boheman, Mon. Cassid. ii, 1854, p. 309.
Apidomorpha musta, Spaeth, Deut. Ent. Zeits. 1914, p. 545.

Body ovate, shining. The colour varies from yellowish brown to dark brown; the elytra with irregular, very deep red-brown markings; the anterior lateral angles of the elytra (except their apices) bear deep red-brown patches, but these are variable in

extent, being reduced to mere specks in some Andaman specimens; the posterior corners of the elytra have deep red-brown patches as well, and these are more constant than those on the anterior angles; on the underside these four areas are always deep red-brown; the last two joints of the antennæ (except the extreme apex) black.

Head with the clypeus rather short. *Prothorax* with the basal margin almost straight or slightly sinuate, and the front margin gently reflexed; the disc is smooth and impunctate, and has a peculiar transparency. *Elytra* with a pointed conical hump behind the scutellum, smooth, and remotely and finely punctate-striate. The colour pattern varies considerably, but generally it is as follows:—behind the hump there is always a patch, which may be very much reduced in some specimens; on each elytron, starting from the humerus, there is an oblique streak of varying breadth, sometimes very much broken, reaching to the suture, where there is an obsolete and elongate patch. In some specimens all of these markings may be reduced to mere specks, but always indicating the general pattern.

Length, $8\frac{1}{2}$–$10\frac{1}{2}$ mm.; breadth, $7\frac{1}{2}$–$9\frac{1}{2}$ mm.

ASSAM. ANDAMAN ISLANDS. JAVA (type).

Type in the Stockholm Museum.

Specimens named by Boheman are in the British Museum.

284. **Aspidomorpha sanctæ-crucis**, *F.*

Cassida sanctæ-crucis, Fabricius, Ent. Syst. iv, 1792, p. 446, and Syst. El. i, 1801, p. 401; Illiger, Mag. Ins. v, 1806, p. 227.
Aspidomorpha sanctæ-crucis, Boheman, Mon. Cassid. ii. 1854, p. 287, pl. vi, f. B; Weise, Deut. Ent. Zeits. 1897, p. 102; Maulik, Rec. Ind. Mus. 1913, p. 111.
Aspidomorpha bajula, Boheman, Mon. Cassid. ii, 1854, p. 288.
Cassida elevata, Fabricius, Syst. El. i, 1801, p. 399; Boheman, Mon. Cassid. ii, 1854, p. 291; Weise, Deut. Ent. Zeits. 1897, p. 102.
Aspidomorpha limbipennis, Boheman, Mon. Cassid. ii, 1854, p. 285, and iv, 1862, p. 266.
Cassida flava, De Geer (*nec* L.), Mém. Ins. v, 1775, p. 184, pl. xv, f. 13.
Apidomorpha heroina, Boheman, Mon. Cassid. ii, 1854, p. 284.
Aspidomorpha fraterna, Baly, Journ. Ent. ii, 1863, p. 11.
Aspidomorpha insularis, Spaeth, Sarawak Mus. Journ. i, 1912, p. 118.
Aspidomorpha lobata, Boheman, Mon. Cassid. ii, 1854, p. 289; Spaeth, Deut. Ent. Zeits. 1914, p. 544.
?*Aspidomorpha stevensi*, Baly, Journ. Ent. ii, 1863, p. 11.

Body rotundate, shining. Colour varying from light to dark brown; the explanate margins transparent and with a faint brown border all round; the four corners of the elytra each with a conspicuous brown patch; the underside coloured like the upper side (fig. 81).

Head with the two apical joints of the antennæ black, with exception of the underside of the extreme tip. *Prothorax* with

the basal margin almost straight, and the lateral angles acute; the disc is uneven, smooth and impunctate, the chitin being very transparent. *Elytra* with a pointed conical hump behind the scutellum, and the whole surface irregularly indented and with rows of distant and irregular punctures; the indentate condition

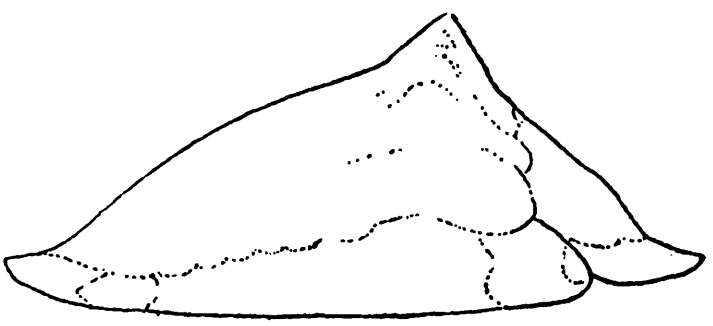


Fig. 101.—Side view of *Aspidomorpha sanctæ-crucis.*

of the surface interferes with the arrangement of the rows; below the hump the punctures are larger. *Underside*: the metasternum and the abdominal sternites, or the former alone, may be black.

Length, 11–15 mm.; breadth, 11–14 mm.

MADRAS: Wynad, North Malabar; Bangalore; Trivandrum; Cochin State. BOMBAY: North Kanara district. BENGAL: Calcutta; Berhampur; Birbhum. SIKKIM: (from the base of the Himalayas to 8000 ft.). ASSAM: Shillong; Sibsagar; Dikrang Valley; Garo Hills. BURMA: Pegu; Shan Hills, North Shan States; Maymyo. W CHINA: between Tengyuen and Tali-Fu, Yunnan.

Type in the Copenhagen University Museum; that of *elevata* also at Copenhagen; that of *limbipennis* at Stockholm; that of *heroina* at Upsala; that of *insularis* in Spaeth's collection; those of *lobata*, *fraterna*, and *stevensi* in the British Museum.

The description of the larva and other notes on the life-history are given in the introduction on p. 273.

Owing to its variation in size and its wide distribution, this species has been described under various names. Wherever it occurs it appears to be abundant.

285. Aspidomorpha birmanica, *Spaeth.*

Aspidomorpha birmanica, Spaeth, Deut. Ent. Zeits. 1914, p. 544.

Body ovate. Colour brown; the four corners of the explanate margins of the elytra with brown patches, those on the underside being darker; the last two joints of the antennæ black, except the extreme apex.

Prothorax very similar to that of *A. sanctæ-crucis*, F., in shape and structure, with the exception of the explanate margin, which is narrow. *Elytra* with a pointed conical hump posterior to the scutellum. The sculpturing, as in *A. sanctæ-crucis*, consists of

irregular indentations and ill-defined rows of fine punctures. *Underside*: the metasternum and the abdominal sternites are blackish.

Length, 11–12½ mm.; breadth, 10-10½ mm.

BURMA.

Type in Spaeth's collection; co-type in Mr. H. E. Andrewes' collection.

This species is very similar to *A. sanctæ-crucis*, F., only differing in its more elongate shape, the explanate margins being narrow.

286. Aspidomorpha chandrika, *Maulik.*

Aspidomorpha chandrika, Maulik, Ann. Mag. Nat. Hist. (9) i, 1918, p. 322.

Body rotundate. The disc of the prothorax, the elytra, the anterior lateral angles of the explanate margin of the elytra and

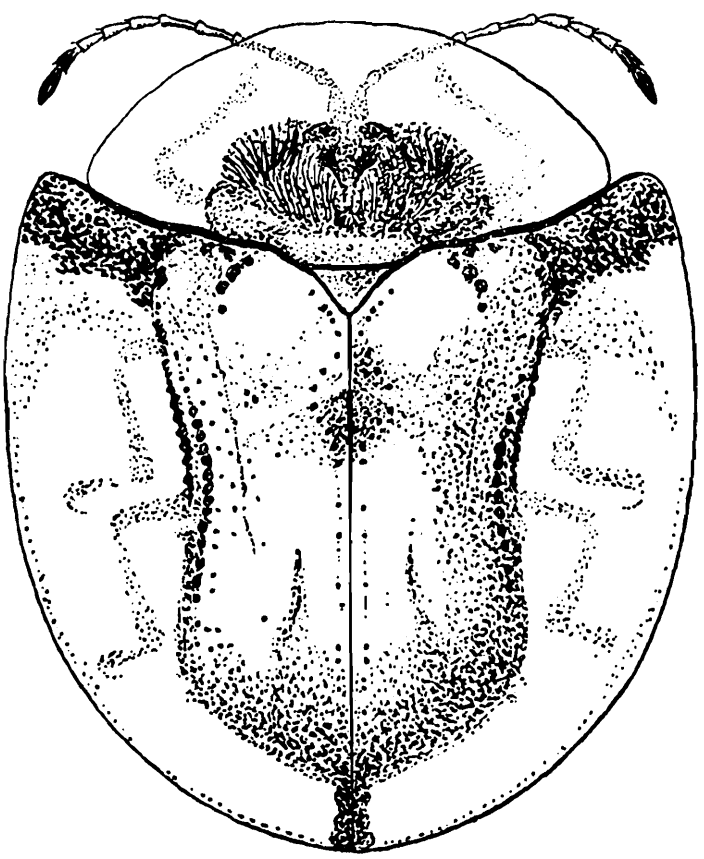


Fig. 102.—*Aspidomorpha chandrika*, Maulik.

the suture at the apex yellow-brown or dark brown, some portions of the elytra being lighter than others; the explanate margins are light yellowish and transparent; the last two joints of the antennæ black.

Prothorax with the basal margin almost straight, except for a slight sinuation near the scutellum; the explanate margin is broad and gently reflexed so that the upper surface is concave; the disc

is convex, smooth, and impunctate; owing to the transparency of the chitin, elongate bunches of fibrous structures are visible. *Elytra* with a conical pointed hump posterior to the scutellum, the humerus being raised and convex. The surface is smooth and has scattered rows of punctures; nearer the suture the rows are far apart from each other, each row consisting of groups of two or three punctures separated by considerable distances; the punctures are slightly coarser and the rows closer together near the margin.

Length, 7–9 mm.; breadth, 6–7 mm.

SIKKIM: Darjiling district, 1000–5000 ft., v–viii. 1912 (*Lord Carmichael*, Ind. Mus.); Pashok, v–vi, 1916 (*F. H. Gravely*, Ind. Mus.). BURMA: Karen Hills, 3000 ft., v. 1916 (*F. M. Mackwood*).

Type in the Indian Museum.

One example from Karen Hills has the colour deeper, the punctures at the sides below the hump more accentuated, and the macula at the sutural angles narrower.

Described from fourteen examples.

287. Aspidomorpha dorsata, *F.*

Cassida dorsata, Fabricius, Mant. Ins. i, 1787, p. 64; id., Ent. Syst. i, 1792, p. 301; id. Syst. El. i, 1801, p. 401; Linné, Syst. Nat. ed. xiii, Gmel., 1787, i, iv, p. 1641; Herbst, Natursyst. Käf. viii, 1799, p. 342.

Aspidomorpha dorsata, Boheman, Mon. Cassid. ii, 1854, p. 296.

Aspidomorpha calligera, Boheman, Mon. Cassid. ii, 1854, p. 297; Weise, Deut. Ent. Zeits. 1897, p. 104.

Similar in form to *A. sanctæ-crucis*, but can be differentiated at sight by the absence of the patches at the posterior lateral angles of the explanate margins of the elytra, and it is generally of smaller size. Although, like *A. sanctæ-crucis*, it has a conical pointed hump behind the scutellum, it has a more flattened appearance. The colour on the dorsal surface varies from deep red to yellowish brown. The larger specimens are actually more elongate, the smaller ones more rotundate.

In specimens in which the colour of the dorsal surface of the elytra is deep red, the post-scutellar conical hump is much lighter; in fact, it has the colour of the explanate margins. The sculpturing is typical of the genus, consisting of a few indistinct rows of fine punctures on a more or less smooth surface; about five rows adjoining the suture are more distinct; just below the hump the surface is a little undulating. In some examples there are fuscous markings on the elytra. The explanate margin is broad, transparent, with a honeycomb structure, and has a brown edge. In darker specimens the colour of the underside is much lighter, and in lighter specimens the colour is the same as the upper side.

Length, 8½–13 mm.; breadth, 8–11 mm.

CEYLON. MADRAS: Nilgiri Hills. BOMBAY: Castle Rock, N. Kanara district, x. 1916 (*S. Kemp*). E. BENGAL: Khulna, viii. 1907 SIKKIM: Darjiling; Dam-Dim. ASSAM: Sibsagar; Shillong; Naga Hills. BURMA: Tavoy; Rangoon. SIAM. MALAY STATES: Perak; Kuala Lumpur. SUMATRA. JAVA. CELEBES.

Type in the British Museum (Banks Cabinet); that of *calligera* in the Stockholm Museum.

The type (from Siam) measures 9 × 8 mm. The colour is bright yellowish brown, without any fuscous markings on the elytra, the surface of which, except the conical hump, is quite smooth, with the usual fine punctures formed into indistinct rows.

288. **Aspidomorpha furcata**, *Thunb.*

Cassida furcata, Thunberg, Nov. Ins. Spec. v, 1789, p. 87, pl. v, f. 96; Herbst, Natursyst. Käf. viii, 1799, p. 265, pl. 132, f. 7.
Cassida dorsata, Olivier (*nec* F.), Enc. Méth. v, 1790, p. 386; id., Ent. vi, 1808, p. 961, 97, pl. iii, f. 45.
Cassida micans, Fabricius, Syst. El. i, 1801, p. 398.
Aspidomorpha micans, Boheman, Mon. Cassid. ii, 1854, p. 313; Weise, Deut. Ent. Zeits. 1901, p. 52; Kershaw & Muir, Trans. Ent. Soc. Lond. 1907, p. 250.

Body rotundate. Colour varying from pale yellow to yellowish brown, or even deep red;* the bases of the elytral explanate margins with a dark patch; the elytra sometimes with a light background and dark oblique streaks meeting at the suture behind the middle; the last joint of the antennæ black, except the extreme apex on the underside; the lower surface always light yellowish, irrespective of the colouring above.

Prothorax smooth, impunctate and very transparent, the head and antennæ showing through. *Elytra* with a pointed conical hump behind the scutellum, smooth and with ill-defined rows of fine punctures; in the deep red variety the punctures are very fine, sometimes obsolete.

Length, 6½–7½ mm.; breadth, 5–6 mm.

CEYLON: Kandy, v. 1910. MADRAS: Bangalore; Travancore. BOMBAY: N. Kanara district, x. 1916 (*S. W. Kemp*); Gopkuda Island, Lake Chilka, viii. 1907; Calcutta, xi. 1918. SIKKIM: Darjiling, v. 1913 (*Lord Carmichael*); Pashok, 3000 ft., v–vi. 1916 (*F. H. Gravely*). ASSAM. BURMA: Sadon, Myitkyina district, 2500–3500 ft., v. 1911 (*E. Colenso*). SUMATRA.

Type in the Upsala University Museum; type of *micans* (from Sumatra) in the Copenhagen University Museum.

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* The occurrence of a deep red variety among lighter coloured specimens has been noticed in other species of this genus, for example, in *A. chandrika*, Maulik.

289. **Aspidomorpha miliaris, *F.***

Cassida miliaris, Fabricius, Syst. Ent. 1775, p. 91; id., Spec. Ins. i, 1781, p. 111; id., Mant. Ins. i, 1787, p. 64; Linné, Syst. Nat. ed. xiii, Gmel. 1787, i, iv, p. 1640; Olivier, Enc. Méth. v, 1790, p. 385; Fabricius, Ent. Syst. i, 1792, p. 300; id., Syst. El. i, 1801, p. 400; Olivier, Ent. vi, 1808, p. 943, 97, pl. ii, f. 25; Herbst, Natursyst. Käf. viii, 1799, p. 312, pl. 135, f. 8.

Aspidomorpha miliaris, Boheman, Mon. Cassid. ii, 1854, p. 261; Wollaston, Col. St. Helenæ, 1877, p. 215 (?); Weise, Deut. Ent. Zeits. 1896, p. 16; Spæth, Ann. Mus. Nat. Hung. i, 1903, p. 138; Schultze, Philipp. Journ. Science, 1908, p. 264, pl. ii; pl. iii, ff. 1–4; pl. vi, ff. 6–9; Bishop, Journ. Straits Br. R. Asiat. Soc. liii, 1909, p. 129; Maulik, Rec. Ind. Mus. 1913, p. 110.

Aspidomorpha amplissima, Boheman, Mon. Cassid. ii, 1854, p. 260; Weise, Deut. Ent. Zeits. 1896, p. 16.

Aspidomorpha celebensis, Blanchard, Voy. Pôle Sud (d'Urville) iv, 1853, p. 316, pl. 18, f. 9; Boheman, Mon. Cassid. iv, 1862, p. 281.

Cassida quatuordecim-punctata, Olivier, Ent. vi, 1808, p. 943, 97, pl. iv, f. 66; Boheman, Mon. Cassid. iii, 1855, p. 521.

Aspidomorpha flaveola, Weise, Philipp. Journ. Science, v, 1910, p. 143.

Aspidomorpha inundata, Weise, l. c.

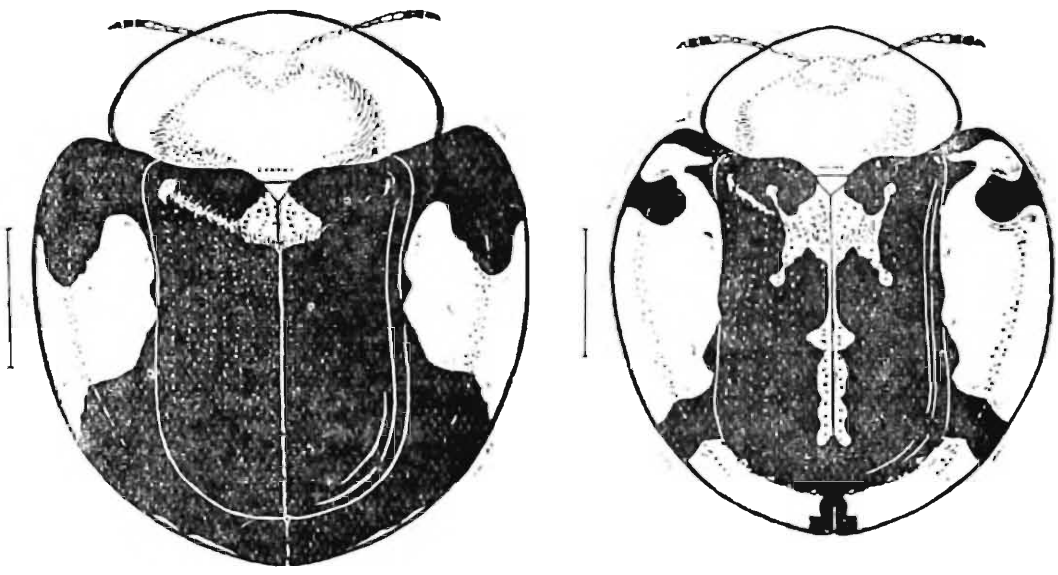


Fig. 103.—Forms of *Aspidomorpha miliaris*, F.

Body rotundate, shining. Colour yellowish brown, sometimes paler, sometimes darker; the elytra with very variable black marking, the explanate margins with the usual four black patches or spots; the underside entirely black, or partly so, or not at all.

Head with the clypeus short, depressed in the middle and granulate. The last three joints of the antennæ (except the extreme apex) are black. *Prothorax* somewhat uneven, smooth and impunctate; the basal margin is almost straight; the explanate margin is gently reflexed and often has the extreme edge black in the basal half. *Elytra* without any conical hump behind the scutellum, broader at the base than the prothorax,

the sculpturing consisting of nine rows of fine punctures which are quite close together in the row; one or two black spots near the suture have a few more punctures. The whole of the basal edge is black, which in some examples broadens on the explanate margin. The pattern of black spots is as follows:—on each elytron, along the suture there are three spots, the last of which is situated just about the middle; commencing from the

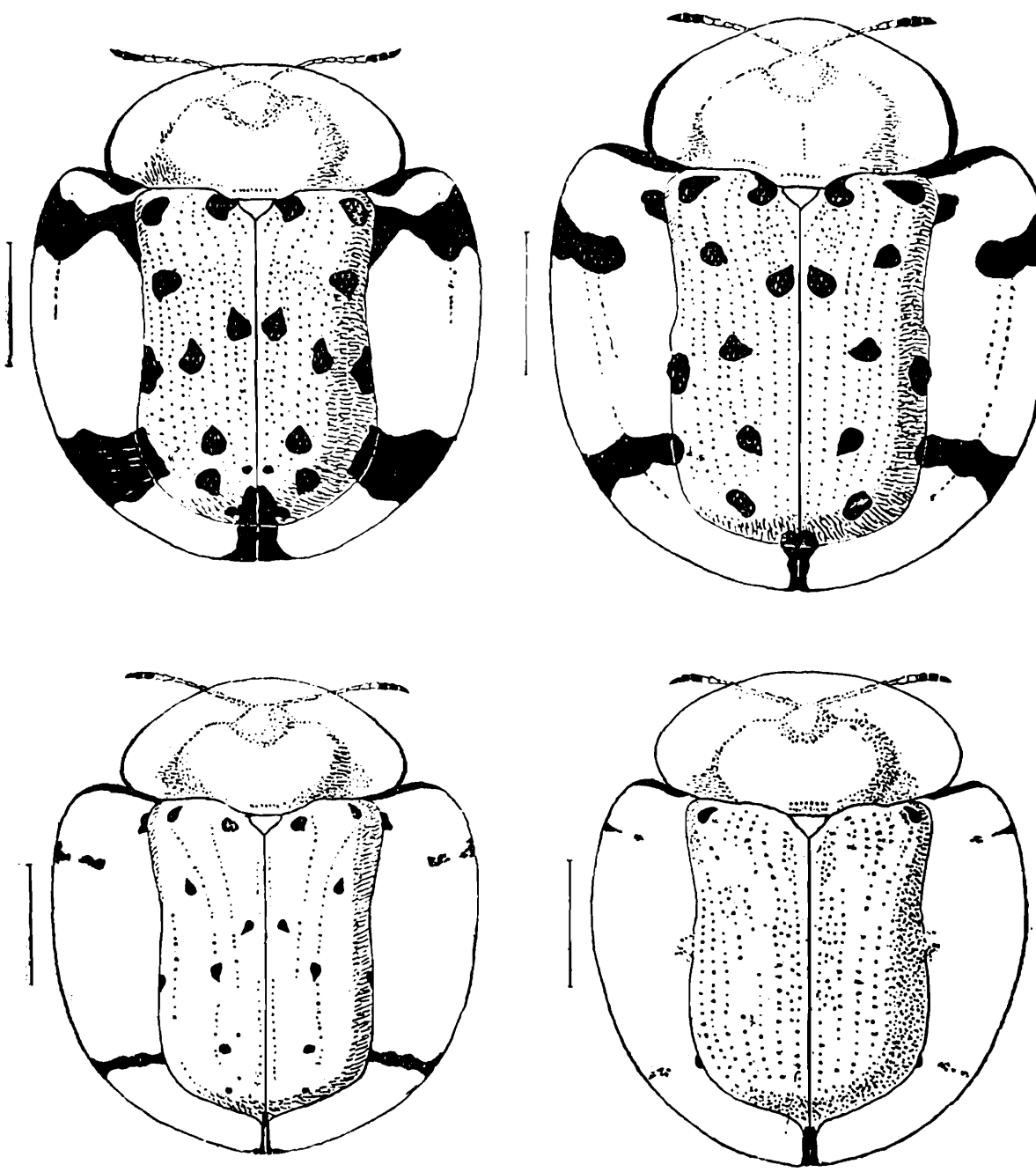


Fig. 104.—Forms of *Aspidomorpha miliaris*, F.

humerus is another oblique line of five spots, and along the marginal line there are four, the fourth being confluent with an apical patch; finally the explanate margin has two patches, the anterior one being small and not reaching the base. The spots

may coalesce and expand so as to cover nearly the whole surface of the elytra; on the other hand, they sometimes vanish almost entirely, the intermediate gradations between these extremes being so gradual that it is difficult to describe any definite variety. Examples from Sadon, Upper Burma, exhibit the most extreme cases of reduction, and they are also very light in colour. The six accompanying figures illustrate the variation of the elytral markings.

Length, 9½–15 mm.; breadth, 8½–13 mm. The variety *amplissima* is larger than *miliaris*; in one example of *amplissima* in the British Museum collection the size is 17 × 17 mm. The females are generally larger than the males, but the largest males are larger than the smallest females.

MADRAS: Mysore; Bangalore; Nilgiri Hills. E. BENGAL: Calcutta; Ranchi; Malda. SIKKIM: Darjiling; Mungphu. ASSAM: Sibsagar; Shillong. BURMA: Pegu; Sadon, 2500–3500 ft., iv–v. 1911 (*E. Colenso*); Tavoy. ANDAMAN IS. JAVA. BORNEO: Sarawak, vii. 1910 (*Beebe*).

Type in the British Museum (Banks Cabinet).

Fabricius described the species from one specimen, which is 12½ mm. long by 10½ mm. broad. The elytral markings are all present, but some are rather attenuated. Between the first and second rows of punctures there are some additional irregular punctures. The sternum is black and the abdominal segments blackish. The type specimen is in quite a good state of preservation.

A summary of the life-history of this species has been given in the Introduction (p. 270).

290. **Aspidomorpha orientalis**, *Boh.*

Aspidomorpha orientalis, Boheman, Cat. Col. Ins. Brit. Mus. ix, 1856, p. 107; id., Mon. Cassid. iv, 1862, p. 259.

A. orientalis var. *olivacea*, Wagener, Mitt. Münch. Ent. Ver. v, 1881, p. 49; Spaeth, Deut. Ent. Zeits. 1914, p. 547.

Body elongate-ovate. Colour varying from yellowish brown to red-brown; the elytra with variable black spots and patches.

Head with the clypeus short and convex. The antennæ are comparatively short, hardly reaching the middle coxæ. *Prothorax* almost as broad as the base of the elytra, semi-elliptical, the basal margin being almost straight, or slightly sinuate. The disc is convex, smooth, shining and impunctate, and in some specimens reddish in colour. The explanate margin is transparent, with the usual honeycomb structure, and gently reflexed. *Elytra* as broad at base as the prothorax. Posterior to the scutellum the surface is level, without a hump. The sculpturing consists of eight or nine rows of fine punctures, the latter being separated into groups in the rows. The arrangement of the spots and patches is as follows:—on each side of the scutellum there is a spot, then

along the suture there are four irregular patches common to both elytra, the apical one being very large ; on each elytron along the middle line parallel to the suture there are four or five spots, some being larger and some smaller; along the margin of the

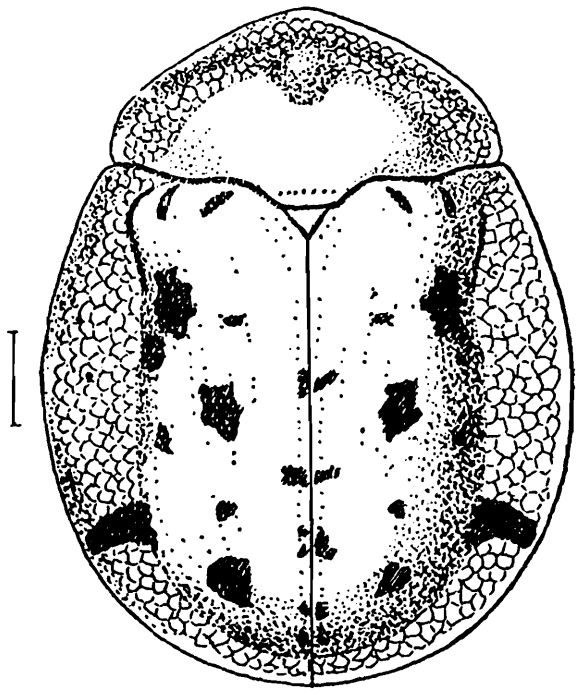


Fig. 105.—*Aspidomorpha orientalis*, Boh.

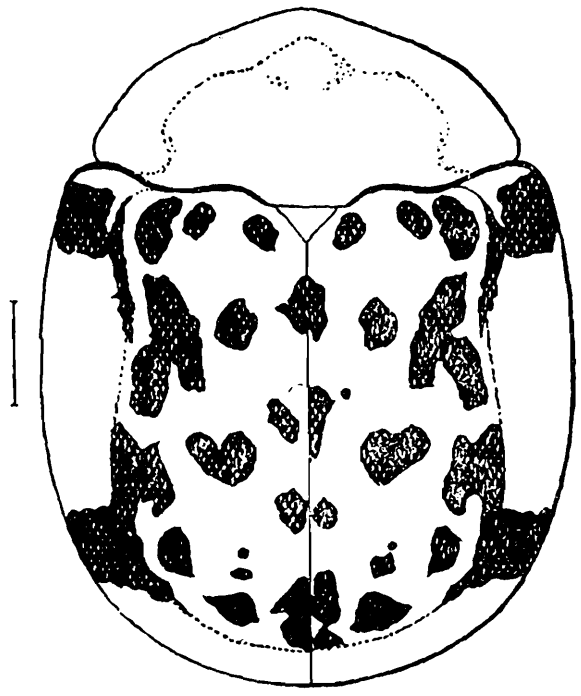


Fig. 106.—*Aspidomorpha orientalis*, Boh. Showing bolder markings.

disc there are larger patches which occupy a considerable amount of space; the explanate margin at the anterior and posterior lateral angles bears the usual large quadrate black patches, which

are confluent with the marginal patches; sometimes the anterior patches are large, showing through on the underside, and the posterior ones small. In some specimens all the spots and patches may be absent, while in others a few will be present but reduced in size. *Underside* of the same colour as the upper side, but in some specimens the abdominal sternites and part of the metasternum, or only the latter, are black.

Length, 8½–10 mm.; breadth, 7–8½ mm.

SIKKIM: Darjiling, Singla, 1500 ft., v. 1913 (*Lord Carmichael*—Ind. Mus.).

Type in the British Museum. The specimen is marked type with a query.

The position of this species in *Aspidomorpha* is doubtful. The thorax is almost as broad as the base of the elytra, and the form of the body is elongate; these two characters seem to indicate its affinity with *Conchyloctenia*. On the other hand, it may be pointed out that there are individuals which are intermediate.

291. **Aspidomorpha andrewesi**, *Spaeth.*

Aspidomorpha andrewesi, Spaeth, Deut. Ent. Zeits. 1914, p. 546.

A small insect, with rotundate body, shining. The explanate margins transparent yellow; the prothorax darker yellow; the anterior and posterior lateral angles and the disc of the elytra deep brown, but the latter is chequered with yellow; the underside light yellow; the last three joints of the antennæ are black, except the underside of the extreme apex.

Head with the clypeus rather long. The antennæ are rather long, projecting as far as the metasternum; the third joint is longer than the second and slightly shorter than, if not equal to, the fourth; the fifth and sixth are subequal. *Prothorax* semi-elliptical, smooth and impunctate, with the basal margin almost straight. *Elytra* broader at base than the prothorax, and slightly elevated behind the scutellum. The scupturing consists of depressions here and there, and rows of fine separated punctures.

Length, 5½ mm.; breadth, 5 mm.

MADRAS: Nilgiri Hills.

Type in Mr. H. E. Andrewes' collection.

292. **Aspidomorpha fusconotata**, *Boh.*

Aspidomorpha fusconotata, Boheman, Mon. Cassid. ii, 1854, p. 279.

Body rotundate. Colour yellowish brown, with irregular fuscous markings on the elytra, but without dark patches on the explanate margins.

Head with the clypeus convex and fringed with hair. *Prothorax* smooth, impunctate and transparent, narrower than the base of the elytra, with the basal margin almost straight, or gently sinuate near the scutellum. *Elytra* broader at base than the prothorax, with ill-defined rows of fine punctures on a smooth surface, the rows being far apart, as also are the punctures in the rows. The

markings are very dark brown and very irregular, so that it is not possible to describe a pattern; they are variable, being almost completely absent in some specimens. The explanate margins are more or less broad, transparent, and with the usual honeycomb structure.

Length, 7–9½ mm.; breadth, 7–8½ mm.

INDIA (*teste* Boheman). PHILIPPINES.

Type in the Stockholm Museum.

Genus **CONCHYLOCTENIA**, *Spaeth.*

Conchyloctenia, Spaeth, Ann. Soc. Ent. Belg. xlvi, 1902, p. 449; Weise, Arch. f. Naturg. lxix, 1903, i, p. 223; Maulik, Proc. Zool. Soc. London, Dec. 1916, p. 586.

GENOTYPE, *Cassida hybrida*, Boh. (Africa).

Head (viewed dorsally) completely concealed by the prothorax; viewed from the underside it is imbedded in a cavity (when in repose) formed by the prothorax and a semicircular projection of the prosternum. The eyes are oblong-ovate. The space between the bases of the antennæ and the labrum (clypeus) is elongate and semi-elliptically raised at its posterior half. The labrum is deeply emarginate in the middle. The first joint of the antennæ is long and stout, the second small and rounded, the third more slender and the longest; the fourth, fifth and sixth gradually decrease in length, being together nearly as long as the third; the seventh to eleventh form an elongate stout club, which is slightly pubescent; the last joint is pointed. *Prothorax* almost as broad as the base of the elytra, nearly semicircular, and broadly explanate all round; the basal margin is hardly bisinuate on either side and has a truncate median projection. The surface has a gentle slope from the base to the apex, the explanate portion being closely covered with circular depressions. *Scutellum* triangular. *Elytra* punctate-striate, the punctures small, fine and scattered; in some cases there are no striæ, the punctures being confused; the explanate margins are closely covered with circular depressions. *Underside* smooth, impunctate; either side of the abdominal segments has a transverse depression. The tibiæ are sulcate on the outside; the claws are pectinate at the base on both sides.

Range. Africa, India.

In 1902 Spaeth proposed *Conchyloctenia* as a subgenus of *Aspidomorpha* owing to the more elongate shape of the body, and the sulcation on the outer side of the tibiæ.

293. **Conchyloctenia nigrovittata**, *Boh.*

Cassida nigrovittata, Boheman, Mon. Cassid. ii, 1854, p. 341; Maulik, Proc. Zool. Soc. London, Dec. 1916, p. 586.

Body suboblong. Colour red or yellowish, elytra with a black spot at each of the four corners and two apical, a sutural row of

unequal black spots from the base to the apex, and a similar duplicated row on the outer slope of the disc near the explanate margin; the underside black, except along the margins.

Head longitudinally sulcate between the bases of the antennæ. The four apical joints of the antennæ, except the extreme point, are blackish. *Scutellum* triangular, smooth and impunctate, the apex being acute. *Elytra* at the base as broad as the prothorax, the outer basal angles being right angles, and the basal margin denticulate. The black markings are variable in extent and arrangement. The sculpturing consists of about three longitudinal rows of fine and scattered punctures between the suture

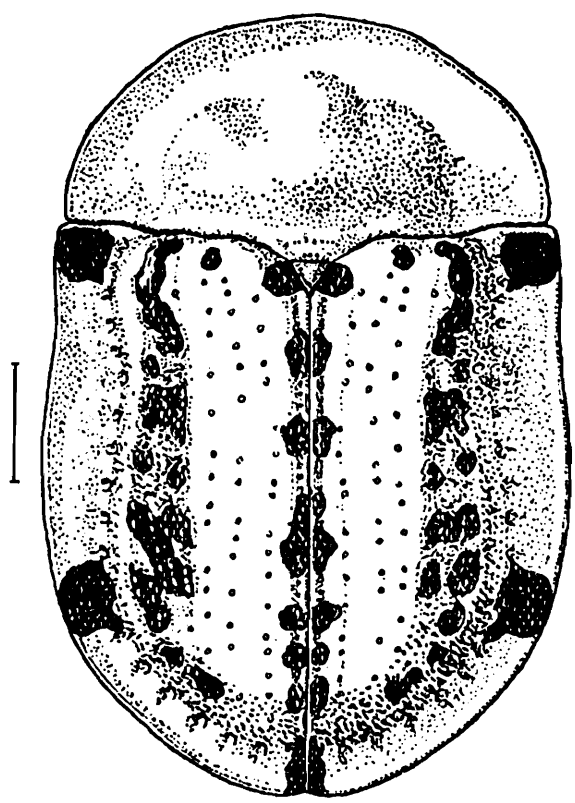


Fig. 107.—*Conchyloctenia nigrovittata*, Boh.

and the outer row of black spots; along these spots the surface is depressed and irregularly punctate; outside the row of spots there is one row of fine punctures, then another of much coarser punctures along the inner edge of the explanate portion.

Length, $8\frac{1}{2}$–10 mm.; breadth, $5\frac{1}{2}$–$6\frac{1}{2}$ mm.

BENGAL: Calcutta. CENTRAL PROVINCES: Nagpur, vi. 1906. BOMBAY: Surat, xii. 1903.

Type in the British Museum.

Genus **SINDIA**, *Ws.*

Sindia, Weise, Deut. Ent. Zeits. 1897, p. 105.

GENOTYPE, *Cassida clathrata*, F.

Body broad, oblong, parallel-sided. The head is completely concealed under the explanate anterior margin of the prothorax.

The antennæ are long. The claws have pectinations on the inner side only, the outer side being simple. The elytra are roughly sculptured. These are the chief characters by which this genus can be distinguished from all others.

Head imbedded in a cavity beneath the prothorax. The eyes are oblong-ovate. The interocular space has a deep longitudinal cleft along the middle line. The six basal joints of the antennæ are more shining than the apical ones, which are more hairy; the first joint is large, the second small and rounded, the third elongate and twice as long as the second. *Prothorax* sloping from the base to the apex, and with depressions and elevations; the lateral margins are explanate; the basal margin is bisinuate on either side, and produced in the middle towards the scutellum. *Scutellum* triangular, smooth. *Elytra* parallel-sided, the basal edge bisinuate on either side and dentate, the outer basal angles rounded. The sculpturing is very rough, consisting of broad well-developed longitudinal costæ, generally two in number, and large shallow transverse foveæ between them. *Underside*: the prosternum is produced and its anterior margin forms the lower boundary of the cavity in which the head is imbedded. The claws are strong, broad at the base and project beyond the third joint.

Range. India.

The above description is taken from the type of the genus. In 1901 Spaeth included in this genus Boheman's *sedecimmaculata*, owing to the fact that it has the comb-like structure of the claws on the inner side only; but in other respects, viz., the form and shape, the sculpturing of the elytra and in many other details, this species differs from the type of the genus. Taking all the characters into consideration, in my opinion, its inclusion in this genus is an artificial arrangement.

294. Sindia clathrata, *F.*

Cassida clathrata, Fabricius, Ent. Syst. Suppl. 1798, p. 83; id., Syst. El. i, 1801, p. 396; Herbst, Natursyst. Käf. viii, 1799, p. 303, pl. 135, f. 3; Boheman, Mon. Cassid. ii, 1854, p. 330.
Cassida sulcata, Olivier, Ent. vi, 1808, p. 950, 97, pl. v, f. 73.
Sindia clathrata, Weise, Deut. Ent. Zeits. 1897, p. 105.

Body broad, oblong. The colour varies from light brown to dark red-brown, with black markings on the prothorax and elytra; in one example before me the dark background obscures the black markings.

Head with a deep longitudinal cleft along the middle line. The third and fourth joints of the antennæ are almost equal in length, and just a little longer than the following two joints, which have the same structure; the last joint is bluntly pointed. *Prothorax* smooth, sparsely and finely punctate, with a broad longitudinal depression in the middle which varies in depth in different specimens. There are nine prinicipal black patches disposed as

follows :—a transverse patch at each basal angle, a curved discal row of four patches of different shapes, along the middle line nearer the base than the apex an elongate oval patch, and on each side of this at the base a broad ⊥-shaped patch; besides these patches there may be one or two small black marks on the explanate margin and one near the scutellum. *Elytra* each with two principal costæ, the inner one extending to the apex and the outer terminating at the point where the surface slopes down. Between the suture and the inner costa and between the two costæ there are rough quadrate pits, and in these there are punctures; between the outer costa and the margin there are

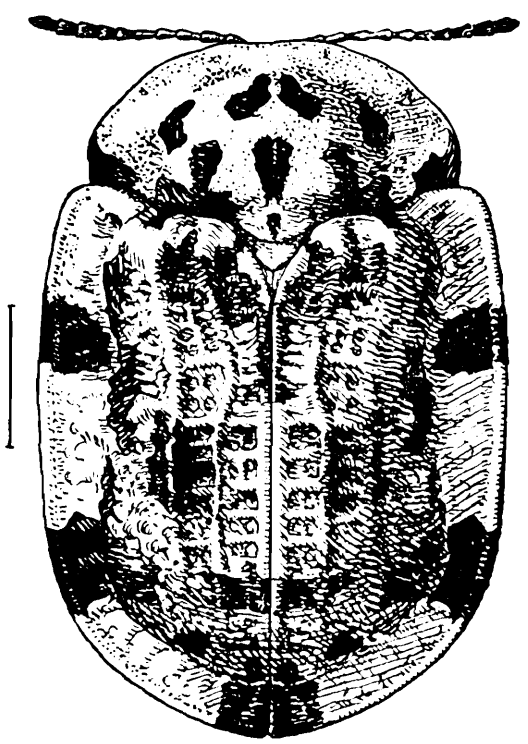


Fig. 108.—*Sindia clathrata*, F.

several irregular rows of deep punctures. On each elytron there are six large black patches disposed as follows :—a large post-basal one which extends to the suture behind the scutellum, a large subquadrate patch in the middle covering the two costæ, on the top of the declivity a small transverse patch between the first costa and the suture, a large common apical patch, and a large marginal patch before and another behind the middle; all these markings vary in size and shape. *Underside* brown, with the meta-sternum and abdomen black, except at the sides; in middle of the underside the femora are marked with black, but this is not constant. The comb-like structure on the inner side of the claw at the base consists of five or six teeth, which gradually increase in size, the basal one being the smallest.

Length, 11½–14 mm.; breadth, 9–10 mm.

BENGAL: Calcutta. BOMBAY: Nasik, xi. 1913 (*N. B. Kinnear*); Sealpur. MADRAS: Malabar.

Type in the Copenhagen University Museum.

295. Sindia foveolata, *Boh.*

Cassida foveolata, Boheman, Cat. Col. Ins. Brit. Mus. ix, 1856, p. 116; id., Mon. Cassid. iv, 1862, p. 284.

Body oblong, parallel-sided. Colour black, except the five or six basal joints of the antennæ, and the front margin of the prothorax or at least the middle portion of it, which are brown.

Head with the clypeus elevated and coarsely punctate. The antennæ are strong and not so long and slender as in *Laccoptera*, the six basal joints being shining and sparsely hairy, the rest more hairy and thicker; the first joint is long and club-shaped, the second very small and rounded, the third about twice the length of the second; the fourth, fifth and sixth gradually diminish in length and increase in breadth. *Prothorax* semicircular, with the edges very slightly reflexed, the basal margin bisinuate on either side. The surface is very uneven and wrinkled, the explanate margin being very rugose. *Scutellum* smooth, shining, triangular; in the type specimen the whole surface is depressed, in another specimen there is a transverse line across near the apex. *Elytra* with the sides parallel. The sculpturing greatly resembles that of *Sindia clathrata*, but in the present species the costæ and punctures are much less accentuated; the surface is punctate-striate, but the striæ are much interrupted by strong transverse costæ, which with one or two irregular longitudinal costæ form deep foveæ; behind the scutellum on either side of the suture there is a deep depression, similar to those that occur at the same place just below the hump in *Laccoptera*. The explanate margins are comparatively narrow and rugose. *Underside* black; the labrum, coxæ and claws are more or less rufescent; the abdominal sternites are slightly punctate and sparsely hairy, and on either side of each there is a reddish transverse depression.

Length, 8 mm.; breadth, $5\frac{3}{4}$ mm.

Northern India. Burma: Tavoy.

Type in the British Museum.

In Gemminger and Harold's Catalogue this species is placed in the genus *Aspidomorpha*, probably owing to the comb-like structure at the base of the claws. In his recent catalogue Dr. Spaeth puts it in *Laccoptera*. The shape of the body, the width of the prothorax in relation to that of the base of the elytra, the relative length of the third joint of the antennæ, the sculpturing of the elytra and the absence of a comb on the outer side of the claw, are all characters that distinguish it from *Laccoptera*, but closely resemble those of *Sindia*. I therefore include it in the latter genus.

296. Sindia sedecimmaculata, *Boh.*

Cassida sedecimmaculata, Boheman, Cat. Col. Ins. Brit. Mus. ix, 1856, p. 119; id., Mon. Cassid. iv, 1862, p. 290.

Sindia sedecimmaculata, Spaeth, Verh. Zool.-bot. Ges. Wien, li, 1901, p. 347.

Body ovate, convex. Colour testaceous and shining, with two

round black spots on the pronotum ; the elytra with two round common spots, one behind the scutellum and the other, a smaller one, at the apex of the suture, besides which on each elytron there are six similar spots ; the middle of the prosternum and the abdominal segments black.

Head with the clypeus convex. The first joint of the antennæ is long and stout, the second small and more or less rounded, the third to fifth subequal in length, the sixth to eleventh becoming thicker and with whitish hairs. *Prothorax* as broad at base as the elytra, semi-elliptical, with the basal margin gently bisinuate on either side and edged with black. The upper surface is convex, although not uniformly so, smooth, with a few punctures ; in the middle nearer the base there is a short longitudinal impression, on either side of which there is the round black patch ; the explanate margin bears large circular impressions on the surface. *Elytra* with the basal edge gently bisinuate on either side, toothed and black. The surface is smooth and broadly and closely punctate, there being about four or five rows of punctures from the suture outwards, after which the punctures are confused, becoming reticulate on the apical area ; on the black patches they are much smaller. The six black spots on each elytron are disposed as follows :—one on the humerus, two behind it, of which the smaller one is on the explanate margin, another in the middle of the elytron more towards the suture, another at a little distance behind this, and the last on the outer edge spreading over the explanate margin. *Underside* smooth, shining, impunctate. The middle portion of the femora is inclined to be darker.

Length, 7 mm. ; breadth, 5 mm.

SIKKIM : Mungphu (*Atkinson*).

Type in the Stockholm Museum.

Genus **SINDIOLA**, *Spaeth.*

Sindiola, Spaeth, Ent. Tidskr. i, 1903, p. 112.

GENOTYPE, *Sindiola parallelipennis*, Spaeth.

In the above journal Spaeth published a description of *Sindiola parallelipennis* on which he founded *Sindiola* as a subgenus of *Aspidomorpha* in a short note. Afterwards it was given the rank of a genus. The characters on which the genus was erected are:—(1) the parallelsidedness of the elytra, (2) the characteristic humeral angles, which are drawn forwards to enclose the prothorax, and (3) the elevated clypeus with its sides rounded. The prosternum is curved before the front coxæ, and at the base there is a small lancet-shaped groove in the middle. The claws are toothed both on the inner and outer sides, having four teeth on the former and two on the latter.

This genus resembles *Sindia* in the general form of the body and in the roughness of the elytral sculpturing, but differs in the

fact that the latter has claws which are toothed on the inner side only.

Range. Burma.

Only a single species is known at present.

297. Sindiola parallelipennis, *Spaeth.*

Sindiola parallelipennis, Spaeth, Ent. Tidskr. i, 1903, p. 111.

Body oblong-ovate, shining. Colour yellowish red, with black patches on the elytra; the prothorax without markings.

Head completely concealed under the explanate front margin of the prothorax. The clypeus is moderately elevated above the front, without any frontal line, smooth, shining, and with a small median groove. The antennæ are strong and reach the humeral angles; the third joint is longer than the fourth by one-half and is more than double the length of the second joint. *Prothorax*

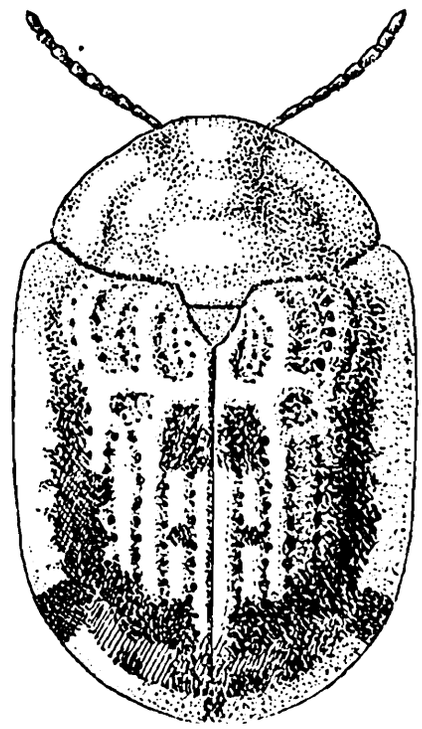


Fig. 109.—*Sindiola parallelipennis*, Spaeth (after Spaeth).

narrower at the base than the elytra, rather small, elliptical, being more rounded at the front margin than behind, so that the completely rounded angles are situated behind the centre. The disc is shining, with fine scattered punctures, and separated by a line from the wide and flat explanate margin. *Scutellum* equilaterally triangular. *Elytra* parallel-sided, strongly convex, and irregularly punctate-striate. The interstices are narrower than the punctures, curved and smooth, the second and fourth being raised into costæ, and the outer ones indistinct and interrupted by the transverse ridges formed by the grooves of the deep punctures, the second costa sends to the post-scutellar hump a thick branch, in front of which the basal

triangle is impressed. The explanate margin is very convex, being almost horizontal in its inner part in front and dropping steeply towards the sides. Anterior and posterior to the humeral elevation there is a deep impression. The surface of the explanate margins has large superficial punctures. The black pattern on the elytra consists of (1) a very narrow basal margin, which extends from the scutellum as far as the humeral elevation, (2) a large common spot posterior to the elevated hump, interrupted by the first row of punctures, (3) on each elytron one very small patch on the first interspace behind the middle, and (4) a wide stripe along the edge of the disc, beginning at the back of the humeral elevation and there covering the sixth to tenth rows of punctures, becoming wider in the middle and extending up to the fourth row, and then turning towards the suture; on the explanate margin there is a quadrate patch at the posterior curve and a common apical spot.

Length, 10 mm.; breadth, 7 mm.

BURMA.

Type in the Stockholm Museum.

Genus **LACCOPTERA**, *Boh.*

Laccoptera, Boheman, Mon. Cassid. iii, 1855, p. 55; Chapuis, Gen. Col. xi, 1875, p. 408; Weise, Deut. Ent. Zeits. 1897, p. 205, and Arch. f. Naturg. lxv, 1899, 1, p. 246.

GENOTYPE, *Laccoptera excavata*, Boh. (South Africa).

Body more or less triangular, broadest at the base of the elytra and narrowed towards the posterior end. The prothorax is elliptical in shape, the longer axis being transverse, and is distinctly narrower than the base of the elytra. At the base on the inner side of the claws there is a well-developed comb-like structure, consisting of about four teeth, the basal one being the smallest and the others gradually increasing in length (fig. 110); on the outer side of the claw the comb when well developed consists of about three similar teeth, but in some cases it is greatly reduced and only indicated by a small groove. So far as the species within our faunistic limits are concerned, I am of opinion that those having the above-mentioned claw character, together with the more or less triangular form of the body, should be included in this genus. When the outer side of the claw is simple it is noticeable that the form of the body and other structures, such as the sculpturing etc., are different; this is the case in the African species, for which Weise erected a subgenus, *Orphonda*, and Spaeth another, *Orphondella*. I am inclined to separate them altogether.

Head more or less imbedded in a cavity beneath the prothorax. The clypeus in most cases has a triangular elevation on its surface. The antennæ are long and slender, the six basal joints being shiny and very sparsely hairy, the five apical ones generally thicker and more hairy; the first joint is always long and stout; the third joint is very long, many times longer than the small rounded

second joint and also longer than the fourth; the fifth and sixth gradually decrease in length. *Prothorax* always uneven, sometimes with wrinkles and sometimes quite smooth. *Scutellum* always triangular, with the apex acute. *Elytra* with rough sculpturing; generally the interstices are inclined to be raised, and in most of the species the first two alternate ones from the suture are more pronounced, the second terminating abruptly without reaching the apex. There is always a low hump posterior to the scutellum. The explanate margins are not very broad.

Range. Africa, India, Malaya, S. China.

Key to the Species.

1.	The explanate margins of elytra at the base with a patch of the same colour as that of the disc and bordered behind with black, the rest of the margin being paler and hyaline	*quadrimaculata*, Thunb., [p. 347
1′	There is no difference in colour between the base of the elytral explanate margins and the rest of their surface	2.
2.	Anterior lateral angles of the elytra sharp; the spots deep black, rounded and well defined	*fruhstorferi*, Spaeth, p. 350.
2′.	Anterior lateral angles of the elytra rounded . . .	3.
3.	The pronotum with two spots .	4.
3′	The pronotum with four or six spots.	*vigintisexnotata*, Boh., p. 352.
4.	Elytra without an apical spot. . .	*tredecimpunctata*, F., p. 350.
4′.	Elytra with an additional apical spot	*quatuordecimnotata*, Boh., [p. 352.

298. Laccoptera quadrimaculata, *Thunb.*

Cassida quadrimaculata, Thunberg, Nov. Ins. Spec. v, 1789, p. 86, pl. v, f. 94.

Laccoptera chinensis, Boheman (*nec* F.), Mon. Cassid. iii, 1855, p. 71.

Laccoptera nepalensis, Boheman, Mon. Cassid. iii, 1855, p. 76.

Laccoptera tredecimpunctata, Weise (*nec* F.), Deut. Ent. Zeits. 1897, p. 104.

L. quadrimaculata var. *bohemani*, Weise, Verh. Naturf. Ver. Brünn, xlviii, 1910, p. 42; Spaeth, Ann. Mus. Nat. Hung. xi, 1913, p. 46.

Laccoptera thunbergi, Spaeth, Suppl. Ent. iii, 1914, p. 15.

The colour varies from dark brown to light brown: the explanate margins of the prothorax and the elytra are hyaline, except the base of the elytral expansions, which has the same colour as that of the disc; behind this there is generally a black patch, and behind the middle another black patch; the post-scutellar hump (which is low) bearing a black spot, and the apex of the suture black; there are other spots and patches on the elytra and pronotum which are extremely variable; a broad transverse black patch on the metasternum.

Head: the antennæ are long and slender; the apical joint is black, but sometimes only its dorsal surface; in six specimens from

the Darjiling district the apical joint and a portion of the next joint are black. *Prothorax* with the basal margin bisinuate on either side and edged with black; the surface is uneven and wrinkled, and generally has two round black spots, which may be obsolescent. *Scutellum* granular and depressed towards the apex. *Elytra*

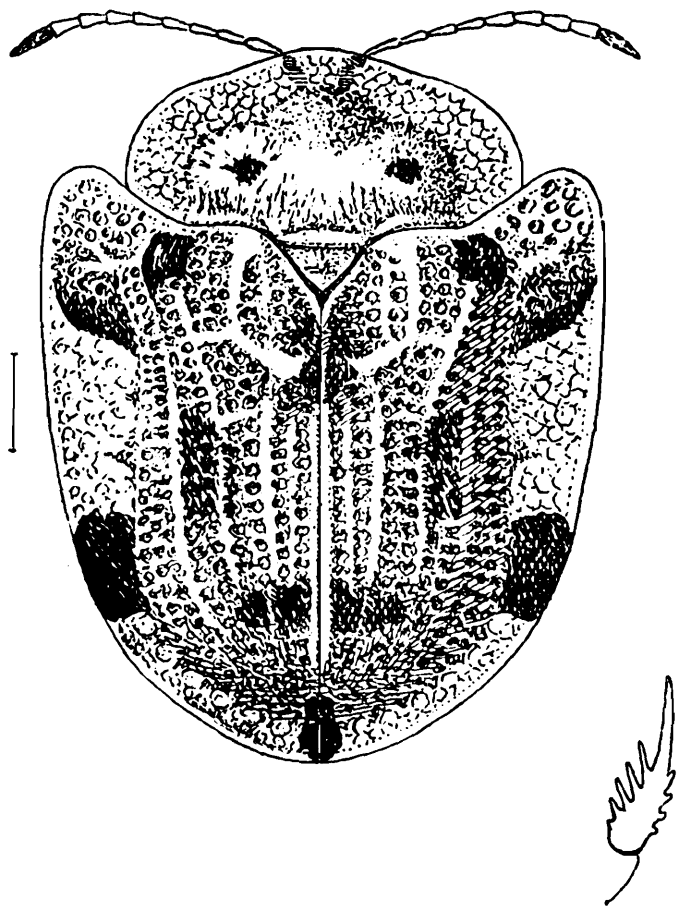


Fig. 110.—*Laccoptera quadrimaculata*, Thunb., and claw.

punctate-striate, the interstices more or less raised, the second and fourth being more pronounced and the latter not reaching the apex; there are nine rows of punctures across the middle, the punctures being large, quadrate or transverse and very often coalescing; the explanate margins have the same kind of sculpturing. The basal edge is bisinuate on either side, black and serrate; the suture is raised. The black markings are as follows:—besides the four patches on the explanate margins, the common spot on the hump, and the small apical spot mentioned above, there are on each elytron three patches, the first covering the humeral callus, the second a large (sometimes disintegrated) patch occupying the middle of the elytron, and the third situated posterior to it and nearer the suture. These spots are very variable, there being sometimes only a trace of them; in the Andaman specimens they are quite prominent; in the Chinese variety the spots on the pronotum are absent; in the Nepalese variety the pronotal spots are very faint; in some specimens the two patches on the explanate margin of the elytron coalesce with the largest elytral spot. *Underside* rough, subnitid, and very sparsely hairy. The claws of the fore legs have the

comb-like structure well developed on the inner side, but so reduced on the outer side that it is hardly distinguishable; the claws of the mid and hind legs have a well-developed internal comb and reduced external comb.

Length, 8–9 mm.; breadth, $6\frac{1}{2}$–$7\frac{1}{2}$ mm.

MADRAS: Trichur, Cochin State, 300 ft., x. 1914 (*F. H. Gravely*); Parambikulam to Kavalai, Cochin State, 1000–2000 ft., ix. 1914 (*F. H. Gravely*). BOMBAY: Castle Rock, North Kanara district, x. 1916 (*S. Kemp*). PORTUGUESE INDIA: Mormugao, ix. 1916 (*S. Kemp*). UNITED PROVINCES: Naini Tal, ix. 1907 (*Annandale*); Bhim Tal, Kumaon, 4500 ft., ix. 1907 (*Annandale*); Almora, 5500 ft., x–xii. 1914 (*C. A. Paiva*). BENGAL: Calcutta; Murshidabad; Katihar, x. 1907 (*C. A. Paiva*). SIKKIM: Dam-Dim, Siliguri; Mungphu, Darjiling, 4700 ft. (*H. H. Mann*); Pashok, 3500 ft., v. 1914 and vi. 1916 (*F. H. Gravely*), v–vi. 1912 (*Lord Carmichael*). ASSAM: Sibsagar; Shillong. BURMA: Tavoy; Maymyo; Sadon, Myitkyina district, 2500–3500 ft., v. 1911 (*E. Colenso*). ANDAMAN IS. MALAY ARCHIPELAGO. S. CHINA.

Type in the Upsala University Museum.

The species is very numerous in individuals. In the Indian Museum there are ninety-three examples collected from the above localities.

L. quadrimaculata var. **plagiograpta**, nov.

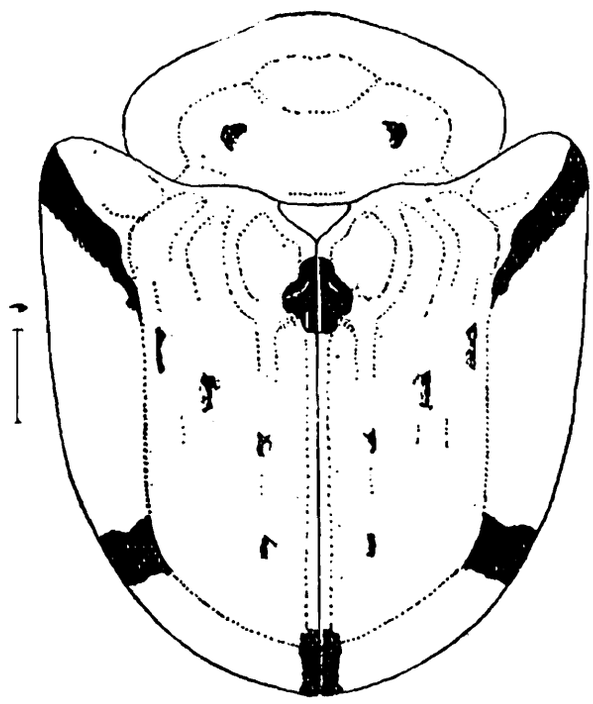


Fig. 111.—*L. quadrimaculata*, var. *plagiograpta*, Maulik.

Two specimens, one from Sadon, Upper Burma, 4000 ft., iv. 1917 (*E. Colenso*) and another from North Shan States, Upper Burma, iv–v. 1914 (*Mackwood*), differ from the others in having (1) sculpturing of the elytra much softened, (2) the pronotal spots

almost obsolescent, (3) the four patches on the elytral explanate margins oblique, (4) a ridge from the humerus to the basal angles of the elytra, (5) the whole of the underside black, and all the spots on the upper side except the common spots on the hump and apex almost obsolescent. The characters (4) and (5) are common to *L. fruhstorferi*, Spaeth.

Type of variety in the Indian Museum, Calcutta.

299. **Laccoptera fruhstorferi**, *Spaeth.*

Laccoptera fruhstorferi, Spaeth, Verh. Zool.-bot. Ges Wien, lv, 1905, p. 117.

Closely related to *L. quadrimaculata*, but differs in having sharper anterior lateral angles to the elytra, an oblique carina on the explanate margin of the elytra, the underside black, and sharply rounded, deep black spots on the elytra.

Head light yellow. The antennæ, with the exception of the last four joints, deep yellow. *Prothorax* light yellow, with a finely wrinkled appearance owing to long striations, and with two small black spots. *Elytra* regularly punctate-striate, with the interstices more or less raised, the second and fourth being strongly elevated; from the sharp basal angle of the elytra to the humerus there is an oblique carina. The explanate margins light yellow; the following markings deep shining black:—a common patch on the elytral hump and another at the apex, and on each elytron two small spots behind the middle on the second interstice, and one or more irregular larger spots further in front on the fourth and the outer interstices, and on each explanate margin two sharply defined obliquely transverse bands. Of the latter the anterior one is outwardly broader and inwardly narrower, being limited in front by the oblique carina on the explanate margin and behind by the edge of the disc; while the posterior one is similar in shape, but spreads over the disc. *Underside* black, the abdominal sternites being light yellow. The claws on the inner side with a long comb, that on the outer side reduced.

Length, 8½ mm.; breadth, 7½ mm.

BURMA: Tandong, Tenasserim, 4000 ft. (*Fruhstorfer*).

Type in Dr. Spaeth's collection, Vienna.

300. **Laccoptera tredecimpunctata**, *F.*

Cassida tredecimpunctata, Fabricius, Syst. El. i, 1801, p. 398.
Laccoptera tredecimpunctata, Boheman, Mon. Cassid. iii, 1855, p. 73.
Cassida miliaris, Herbst (*nec* F.), Natursyst. Käf. viii, 1799, p. 312, pl. 135, f. 8.
Aspidomorpha philippinensis, Blanchard, Voy. Pôle Sud (d'Urville), iv, 1853, p. 321, pl. 18, f. 14.

Body almost triangular, subnitid. Colour brown, with two black spots on the pronotum, one common spot on the hump and

five on each elytron; on the underside the spots on the metasternum are sometimes obsolescent; the last two joints of the antennæ, and sometimes a portion of the ninth, black.

Head with the clypeus simply convex. *Prothorax* much narrower than the elytra at the base, more or less elliptical in shape, with the base bisinuate on either side and edged with black. The surface is uneven, longitudinally wrinkled, and has a few

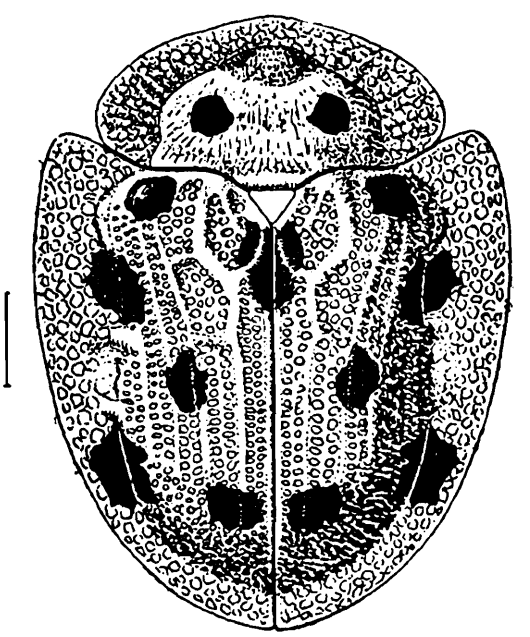


Fig. 112.—*Laccoptera tredecimpunctata*, F.

punctures on the two black spots. *Scutellum* more or less wrinkled towards the apex. *Elytra* with the basal margin bisinuate on either side, black and dentate, and with a low hump behind the scutellum. The suture, the second and fourth interstices are raised, the last not reaching the apex; across the middle on each elytron there are ten rows of punctures, which are large and round, becoming transverse towards the margins. The distribution of the black spots is shown in the figure. *Underside* smooth and shining; the four black marginal spots on the elytra show through; on the metasternum there is a black patch on each side, which may be much reduced in some specimens. The claw-joint projects beyond the bilobed joint; the claws of the front tarsi have the comb well developed on the inner side, that on the outer side being so reduced as to be hardly recognisable. The comb on the outer side of the claws of the middle and hind tarsi is also reduced but easily recognisable.

Length, 9½ mm.; breadth, 7½ mm.

MADRAS: Parambikulam, Cochin State, 1700–3200 ft., ix. 1914 (*F. H. Gravely*—Ind. Mus.); Nagody, South Kanara district 2500 ft., ix. 1913 (*T. V Ramakrishna*). SUMATRA (type). JAVA. BORNEO. PHILIPPINES.

Type in the Copenhagen University Museum.

301. Laccoptera quatuordecimnotata, *Boh.*

Laccoptera quatuordecimnotata, Boheman, Mon. Cassid. iii, 1855, p. 64; Maulik, Rec. Ind. Mus. ix, 1913, p. 113.

Body subrotundate, either dull or shiny. Colour reddish brown, with two black spots on the prothorax, five on each elytron, and one spot on the hump and one at the apex which are common to both elytra—in all fourteen spots; on the underside the metasternum is black, and the five spots on the explanate margin show through. The spots are distinct, bold and well defined, and do not vary in number and position.

Head with the clypeus triangularly raised and set with long bristly hairs, the semicircular labrum rising abruptly from it. The last joint of the antennæ is long, black and pointed. *Prothorax* more or less elliptical, with the basal margin bisinuate on either side. The disc convex, transparent enough to show the eyes and antennæ through, and with fine punctures on the two black patches and elongate striations all round them; the explanate margins are honeycombed with large hyaline patches. *Scutellum* granulate. *Elytra* much broader at the base than the prothorax and convex, each having across the middle eleven rows of large contiguous punctures, which are sometimes quadrate. The suture is strongly raised; the alternate interstices are also raised, especially the second and fourth, the former reaching the apex but not the latter; near the base the first costa forms a fork with the scutellar margin enclosing a cavity which is full of punctures; the explanate margins are honeycombed with hyaline areas. The black patches on the elytra are disposed as follows:—a large postscutellar common spot, covering a good deal of the convex area, and a small common apical spot; on each elytron there are five patches, viz., one on the humeral callus, a large one in the middle of the elytron, a smaller one on the apical declivity, and finally two large ones on the explanate margins, the anterior being larger than the posterior patch; these lateral patches always reach the extreme margin of the elytra, except in specimens from Ceylon. *Underside* finely punctate, each puncture having a short whitish hair. The claws have a large comb-like structure on the inner side, but on the outer side this is considerably reduced, being indicated only by notches or grooves.

Length, 10–12 mm.; breadth, 8–9 mm.

MADRAS: Wynaad; Nilgiri Hills (*Sir G. F. Hampson*). BOMBAY: Talewadi, near Castle Rock, N. Kanara district, x. 1916 (*S. W. Kemp*—Ind. Mus.). CEYLON.

302. Laccoptera vigintisexnotata, *Boh.*

Laccoptera vigintisexnotata, Boheman, Mon. Cassid. iii, 1855, p. 66; Maulik, Ann. Mag. Nat. Hist. (9) i, 1918, p. 318.
Var. *Laccoptera novemdecimnotata*, Boheman, l. c. p. 67.
Var. *Laccoptera hospita*, Boheman, l. c. p. 68.
Var. *Laccoptera multinotata*, Boheman, l. c. p. 70.

Body subtriangular. Colour brown, with black spots on the