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VIII.—*A Revision of the Genus Jauravia Mots. (Coleoptera Coccinellidæ).* By A. P. KAPUR, M.Sc., F.R.E.S., Imperial Institute of Entomology.

THE genus *Jauravia* Motschulsky (1858), which alone constitutes the tribe Clanini, seems to be confined mainly to Ceylon and South India, although two species extend northwards into Assam and Burma. The beetles and their grubs are predaceous on mealy bugs, Aleurodidæ and the phytophagous mites. The present revision is based on the collection in the British Museum (Natural History) and on the material submitted for identification by the Imperial Entomologist, New Delhi, India. I wish to record my gratitude to Dr. S. A. Neave, C.M.G., O.B.E., Director, Imperial Institute of Entomology, for the opportunity afforded to me for this study and for numerous other facilities. I am also grateful to Dr. S. Maulik, Dr. T. H. C. Taylor and Dr. O. W. Richards for their encouragement and help.

Genus JAURAVIA Motschulsky (1858).

Jauravia Motschulsky, 1858, p. 117; Crotch, 1874, pp. 273, 274; Chapuis, 1876, p. 258; Weise, 1892, p. 24, 1900, p. 431; Korschevsky, 1931, p. 222.

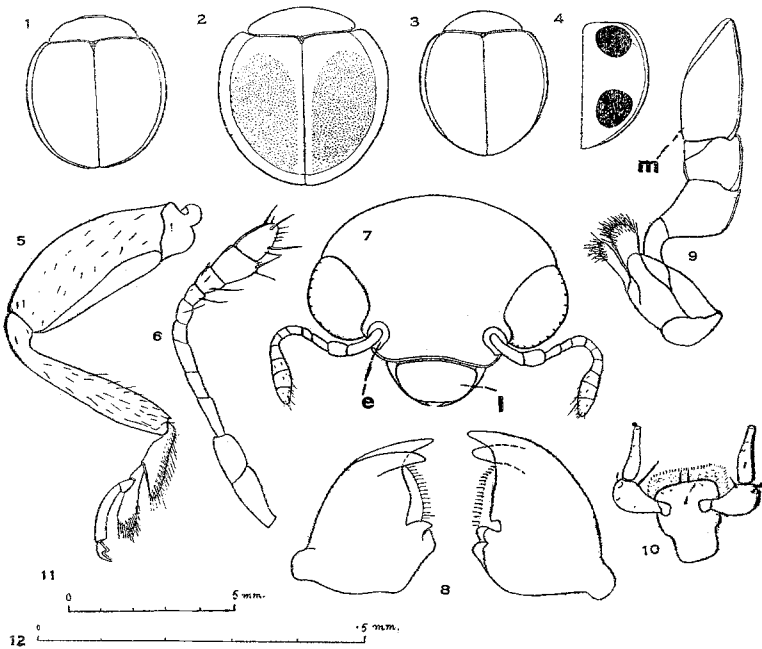
Clanis Mulsant (not Hübner), 1850, pp. 949, 999; Crotch, 1874, p. 273; Chapuis, 1876, pp. 211, 214; Weise, 1892, p. 24, 1900, p. 431.

Apparently without knowing that the generic name *Clanis* was preoccupied in Lepidoptera (Hübner [1819]), Mulsant used it in describing his new genus with *Coccinella*
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pubescens Fabr. as the genotype. In 1858, Motschulsky erected *Jauravia* for two new species, *J. pallidula* and *J. limbata*, of which the former was fixed as genotype by Crotch (1874). Chapuis (1876) gave a detailed description of this genus as well as that of Mulsant's *Clanis* separately. In 1892, Weise sunk *Jauravia* as a synonym of *Clanis* Mulsant, but Korschefsky (1931) revived the former because the name *Clanis* was preoccupied, as stated above.

The genus may be redescribed as follows:—Small to medium-sized species. Body rounded oval and convex to hemispherical (figs. 1–3). Upper surface usually smooth, moderately to strongly shining, sometimes coraceous and matt. General colour varies from very light yellowish brown to reddish brown in different species, some of which are provided with fuscous to large black patches or spots on the elytra. Upper and under surfaces punctate and pubescent and varying considerably in these characters in different species. Head (fig. 7) moderately dilated laterally, interocular space and clypeus flat, base of antenna exposed by the circular emargination of the clypeus around it, the latter margined and impunctate at the anterior border. Eyes large, glabrous, coarsely faceted, slightly emarginate near the antennal base and usually black, rarely grey. Antenna (fig. 6) long, extending as far back as the middle of the sides of prothorax, 11-segmented, segments 1–2 thick, nearly twice as long as broad, 3–5 slender and long, 6–8 slender but short, 9–11 forming the fusiform club which is as broad as long, with the terminal segment conical and provided with greater number of sensory hairs than any one of the preceding four segments. Labrum (fig. 7, *l*) well developed, slightly narrower anteriorly, rounded on the sides and with long hairs on the dorsal surface. Mandibles (fig. 8) bidentate at the apex, with a bicuspidate tooth at the base and a finely ciliated prostheca on the underside. Maxillæ (fig. 9) small, clusters of hairs on galea and lacinia, short maxillary palpus fairly well developed, with the terminal segment (fig. 9, *m*) nearly twice as long as either of the preceding two, and though very obliquely truncate and strongly pointed in the apical half, nevertheless securiform. Mentum and labium (fig. 10) small, the latter quadrangular, and truncate anteriorly; labial palpus well developed,

two-segmented and club-shaped with the proximal end of the first and the distal of the second narrower, hypopharynx delicate, finely ciliated. Pronotum transversely



- Fig. 1.—Outline of *Jauravia pubescens* Fabr.
 Fig. 2.—*J. dorsalis* Ws.
 Fig. 3.—*J. indica*, new species.
 Fig. 4.—Elytron of *J. quadrinotata*, new species.
 Figs. 5–10.—Parts of *J. pubescens*.
 Fig. 5.—Leg.
 Fig. 6.—Antenna.
 Fig. 7.—Front of the head.
 Fig. 8.—Mandibles.
 Fig. 9.—Maxilla.
 Fig. 10.—Labium and hypopharynx.
 Fig. 11.—0.5 mm., scale applicable to figs. 5, 7, 13–30.
 Fig. 12.—0.5 mm., scale applicable to figs. 6, 8–10.

developed, moderately to strongly emarginate anteriorly, slightly rounded to straight laterally and tightly fitted to elytra at the base. Scutellum very small, triangular, with one or two punctures and hairs. Elytra at the base wider

than the base of pronotum, the lateral border moderately to very broadly expanded, slightly raised at the shoulder and distinctly margined. Prothoracic epipleuron with distinct fovea near the anterior margin on either side of the prosternum, which has two widely separated carinae at the base. The carinae diverge anteriorly in straight or curved lines which may reach, or stop short before, the anterior margin of the segment. Elytral epipleuron wider anteriorly, gradually narrowing towards the apex, slightly sloping, without fovea for the reception of tips of femora and bases of tibiae. Meso- and metasternum separated by a slightly posteriorly bent transverse line. Abdomen with five sternites, the first longest, femoral lines incomplete and running along the posterior margin of the segment, the following three segments nearly equal to one another in length and shorter than the last or fifth segment which is very slightly notched in the middle of the posterior margin in males. As a general rule the sternites are slightly narrower in females than in males. Legs moderately long, in repose not extending beyond the boundary of the body, femora slightly expanded on the outer side to form a shallow channel for the reception of only a part of the slender tibia, tarsi thickly clothed with hairs except the last segment which bears a pair of simple claws each with a basal tooth.

Male genitalia (fig. 13) consist of an elongate penis (*p*) usually expanded and flattened towards the apex, which is in some species narrower than the base; basal plates (*bp*) short; paramera (*pa*) long, slightly compressed, and bearing a few sensory hairs distally; trab (*t*) spatulate, short and distally attached by muscles with the siphon (fig. 14) which is elongate, bent and expanded into a siphonal capsule (*c*) proximally, more or less curved and pointed distally. The rod (*r*) for muscles connecting the basal piece and the ninth sternites narrow and irregularly bent. Shape of penis and of siphon varies in different species. Of the female genitalia (fig. 19) the last segments are elongate and form a sort of tubular structure which does not present sufficient variation for identification purposes, spermatheca likewise not distinctive for classification as it is insufficiently chitinized.

Weise (1900) erected a separate tribe Clanini for this genus which, as he himself stated, agreed with the tribe

Sticholotini Ws. (now synonymized with *Pharini* Casey) in the form of the body, shape and emargination of the eyes, etc. The points of difference stated were as follows :— The yellowish-brown to ferruginous coloration, pubescent upper surface, sharp separation of the middle and hind sterna by a transverse groove, the form of the last segment of the maxillary palpus in being comparatively less expanded but nevertheless axe-shaped, and lastly the margined and expanded elytral border. On an examination of a large number of species of this genus and those of *Sticholotini*, I think these distinguishing characters do not justify the maintenance of a separate tribe for this genus. The characters of colour and pubescence are variable even within the different genera. The shape of the last segment of the maxillary palpi, though an important character, is usually variable from genus to genus. In the genotype species, *Sticholotis substriatus* Crotch, for instance, the maxillary palpi, though slightly more pointed than those of *Jauravia* spp., are, however, axe-shaped. Similarly the character of the elytral border is in my opinion only of generic value, and I propose that the genus *Jauravia* be placed near *Sticholotis* in the tribe *Pharini*, of which the tribe *Clanini* Ws. be regarded as a synonym.

Key to the Species of *Jauravia*.

- | | |
|--|---------------------------|
| 1. Rounded oval, lateral borders of elytra moderately to narrowly expanded | 2. |
| Circular, lateral borders of elytra broadly expanded | 7. |
| 2. Elytra yellowish brown to brown, without black patches or spots | 3. |
| Elytra brown, with black patches or spots | 5. |
| 3. Elytral pubescence moderately long, golden, suberect and not dense, punctation medium, rather shallow, interspaces twice as wide as the punctures, smooth and shining, penis broad towards the apex (fig. 13) | <i>pubescens</i> (Fabr.). |
| Elytral pubescence short and whitish | 4. |
| 4. Broadly oval, small, brown, punctures fine deep and close, pubescence dense, penis narrower towards the apex (fig. 15) | <i>pallidula</i> Mots. |
| Slightly narrower, medium sized, golden brown, punctures very fine and deep but sparse, interspaces wide and glossy, penis slightly wider towards the apex (fig. 28) | <i>indica</i> , sp. n. |
| 5. Elytra with the large discoidal area and metasternum black | <i>limbata</i> Mots. |
| Elytron with one or two black circular spots | 6. |

6. Strongly convex, elytron with one spot about one-third as long as elytron, nearer base than apex; punctures coarse, deep and close, pubescence short and sparse *kanarensis*, sp. n.
 Less convex, elytron with two large spots, one situated near the base, the other post-medial; punctures sparse, pubescence long and sparse (fig. 4) *quadrinotata*, sp. n.
7. Elytral pubescence short, as long as on pronotum, moderately dense, punctures fine and close, interspaces wrinkled, upper surface light brown, matt *simplex* (Walk.)
 Elytral pubescence long, suberect and rather sparse 8.
8. Elytral punctures large and coarse, interspaces brightly shining, pubescence golden 9.
 Elytral punctures fine, interspaces coriaceous, shining like a greasy surface, pubescence whitish 10.
9. 2.8-3.0 mm., long, upper surface very light yellowish brown, pronotum deeply emarginate in front, having acute angles on either side of the eyes; punctures coarse but shallow, moderately close, penis nearly as broad at the base as towards the apex (fig. 26) *albidula* Mots.
- 2.5 mm. long, or less, upper surface yellowish brown to brown, pronotum moderately emarginate in front, lateral angles not acute, punctures coarse but deep and rather sparse, penis narrower at the base (fig. 17) *piloscula* (Ws.).
10. Upper surface reddish brown to reddish testaceous, carinae reaching the anterior margin of prosternum *soror* (Ws.).
 Upper surface reddish brown, with the disc of elytron fuscous, carinae not reaching the anterior margin of prosternum *dorsalis* (Ws.).

I have transferred *limbata* Mots. back to this genus from *Sticholotis* as the specimens before me from the type-locality, which agree with Motschulsky's description, undoubtedly belong to this genus. Weise (1900) transferred this species to *Sticholotis* presumably on account of its black markings on the discal area of the elytra which he thought were without markings in *Jauravia*. The following species formerly associated with the genus belong to other genera :—

(1) *Scymnus* (? *Clanis*) *uninotata* (Gorham, 1894). The two co-types present in the British Museum belong neither to *Jauravia* (*Clanis*) nor to *Ortalia*. Gorham himself pointed out the resemblance of this species to *Scymnus* but doubted whether it actually belonged therein because he thought that the thorax at the base was

narrower than the bases of the elytra. I find that it does belong to *Scymnus* and that its thorax is not narrower at the base. The eyes are neither deeply emarginate as in *Ortalia* nor coarsely faceted as in *Jauravia*. There are six sternites, and the femoral lines are in a complete arc, unlike those in *Jauravia*.

(2) *Pharoscymnus* (*Clanis*) *suturalis* (Sicard, 1912). An examination of the type shows that the clypeus is produced anteriorly so as to cover partially the base of the antennæ.

(3) ? *Pentilia testivestis* Mulsant, 1853. I have not been able to examine the type of this species. Motschulsky sent an example to Mulsant who named it as ? *Pentilia testivestis* and published (1853) a description of it. Motschulsky (1866) apparently did not see Mulsant's description and thought that this species should belong to *Jauravia*. *Pentilia* is a glabrous genus, while *Jauravia* is pubescent. Motschulsky was wrong in putting it in *Jauravia*. On the other hand, *Pentilia* is mainly a New World genus. Nothing can be finally settled until the type is examined.

(4) *Sticholotis* (*Clanis*) *binotata* (Gorham), 1894. An examination of the type in the British Museum shows that it belongs to *Sticholotis* Crotch. Further remarks on this species have been made under *Jauravia kanarensis* described in this paper.

Jauravia pubescens (Fabricius), 1798. (Fig. 1.)

Coccinella pubescens Fabricius, 1798, p. 77, 1801, p. 357; Schönh., 1808, p. 15.

Clanis pubescens (Fabr.) Mulsant, 1850, p. 999; Gorham, 1894, p. 204, 1903, p. 347; Weise, 1892, p. 25, 1900, pp. 431, 433; Subramaniam, 1924, p. 108; Schilder and Schilder, 1928, p. 238.

Jauravia pubescens (Fabr.), Korschevsky, 1931, p. 222.

Subhemispherical, upper surface yellowish brown to brown with the eyes black and the external border of elytra somewhat paler. Underside slightly lighter with the epipleuræ and legs rather yellowish brown. Head with very fine and sparse punctures and with moderately long, delicate, golden and dense pubescence. Pronotum moderately emarginate anteriorly, the antero-lateral angles and the sides moderately rounded; punctures, especially towards the sides, coarser than those on the head, pubescence similar to that on the head. Elytra with the

external border (fig. 1) narrowly expanded, distinctly margined and slightly elevated at the humeral angles; punctures moderately fine, tending to be rather coarser on the top of the disc, deep but not close; interspaces smooth, brightly shining and wider than those on the pronotum; pubescence similar to that on pronotum but suberect and sparser. Prosternal carinæ reaching the anterior margin of the segment. Underside with minute and very sparse punctures and rather short, golden, subdepressed and sparse pubescence. Penis (fig. 13 *p*) gradually widening from the base towards the apex for nearly four-fifths its length, then narrowing to a very broadly rounded apex; it differs in this respect from that of *J. pilosula* (Ws.), which has a narrower, rather pointed apex. The siphon (fig. 14) is curved slightly at the distal end and the siphonal capsule is broad with a widely open hook (*h*) on the inner side.

Length 2.5 mm., width 2.3 mm.

Geographical Distribution.—Type-locality mentioned is "Oriental India." The examples before me are from the following localities:—

INDIA: Nilgiri Hills, South India (*H. L. Andrewes*); Madura, South India (*H. L. Andrewes*); Balasore, Orissa Province (2. viii. 1915); Belgaum, Bombay Province (*H. L. Andrewes*).

Reported by Subramaniam as feeding on *Pulvinaria maxima* (Coccidæ) in India.

Remarks.—Also recorded from Ceylon (Gorham, 1894), but I have not seen an example from there. This appears to be a common Indian species which extends from South India northwards into Bombay and Orissa Provinces.

Jauravia pallidula Mots., 1858.

Jauravia pallidula Motschulsky, 1858, p. 117; Crotch, 1874, p. 274; Chapuis, 1876, p. 258; Korschefsky, 1931, p. 122.
Clanis pallidula Mots., Weise, 1892, p. 25, 1900, pp. 431, 433; Gorham, 1894, p. 206; Sicard, 1910, p. 385.

Broadly oval and convex; mature specimens deep testaceous, immature ones lighter in general colour; head in the former testaceous with the clypeus, mouth-parts and antennæ light fulvous, eyes black, rest of the upper surface deep testaceous. Underside testaceous with the epipleuræ light fulvous. Head with very fine and sparse punctures and short, whitish and sparse pubescence. Pronotum

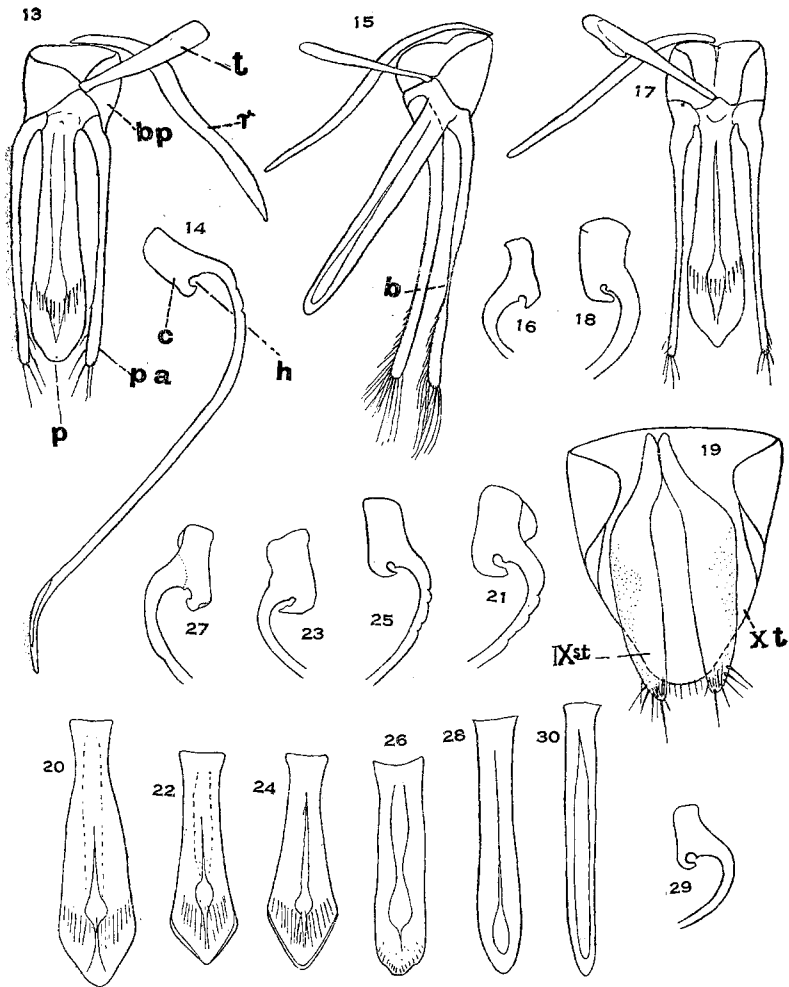


Fig 13.—Male genitalia of *J. pubescens*. *p*, penis; *bp*, basal plates; *pa*, paramera; *t*, trab; *r*, connecting-rod.

Fig. 14.—Sipho of *J. pubescens*. *c*, siphonal capsule; *h*, hook.

Fig. 15.—Male genitalia of *J. pallidula* Mots.

Fig. 16.—Siphonal capsule of *J. pallidula* Mots.

Fig. 17.—Male genitalia of *J. pilosula* Ws.

Fig. 18.—Siphonal capsule of *J. pilosula* Ws.

Fig. 19.—Terminal segments of female *J. albidula* Mots. *ix.st.*, ninth sternites; *x.t.*, tenth tergite.

Figs. 20–21.—*J. dorsalis* Ws. Outline of penis and siphonal capsule respectively.

Figs. 22–23.—*J. soror* Ws.

Figs. 24–25.—*J. simplex* Walk.

Figs. 26–27.—*J. albidula* Mots.

Figs. 28–29.—*J. indica*, new species.

Fig. 30.—*J. limbata* Mots.

moderately emarginate anteriorly, sides almost straight and the antero-lateral angles slightly rounded; punctation fine and close, pubescence whitish, short and dense. Elytron without a prominent humerus; sides sloping gradually and only moderately expanded; elytral punctures fine, deep and close, interspaces narrow, smaller than or as wide as punctures; pubescence whitish, short and dense. Carinae straight, reaching the anterior margin of the prosternum. Underside finely and sparsely punctate, pubescence yellowish white, very delicate, short and sparse. Male genitalia (figs. 15, 16): basal plates comparatively broad and well developed; penis narrowing slightly from base towards rounded apex; paramera elongate and in side view (fig. 15 *b*) appearing constricted for a short distance near the middle, the apical part densely beset with long sensory hairs; siphon (fig. 16) more strongly curved proximally, siphonal capsule narrower with a broad hook on the inner side.

Length 2.2–2.4 mm., width 1.8–2.0 mm.

Geographical distribution.—The type-localities mentioned are Ceylon and the Indian Continent. The examples before me are from the following localities:—

INDIA: Cuddalore, Madras Province (feeding on Diaspines on guava, 5 . xii . 1944, *G. Sam.*); Chetpat-Palur, Madras (15 . iv . 1931, *P. S. Nathan.*); Belgaum, Bombay Province (*H. L. Andrewes.*); Calcutta, Bengal (*Fry's bequest.*).

Remarks.—Weise in 1892 synonymized this species with *J. pubescens* (Fabr.), but in 1900 recognized it as distinct. It is a small species, distinct in having a fine but very close punctation and short and dense pubescence. Its nearest relative is *J. limbata* Mots., which is, however, easily recognized by its black discoidal patches.

Jauravia limbata Mots., 1858.

Jauravia limbata Motschulsky, 1858, p. 188, 1866, p. 424; Crotch, 1874, p. 274; Gorham, 1891, p. 206.

Clanis limbata (Mots.) Weise, 1900, pp. 432, 433.

Sticholotis limbata (Mots.) Weise, 1908, p. 227; Korschefsky, 1931, p. 212.

Broadly oval and convex. Head testaceous with the eyes black, clypeus and other appendages yellowish brown. Pronotum pale testaceous, scutellum fuscous; elytra black, except the broad testaceous lateral and apical

borders, the border extending from base to apex, throughout as broad as the distance between the external margin and the humerus. Underside and legs yellowish brown except the meso- and metasternum and the first two abdominal sternites. Head and pronotum finely and closely punctate, densely pubescent with whitish fairly long hairs. Elytral punctures slightly coarser than those on the pronotum, deep and dense; interspaces narrow, smooth and shining; pubescence similar to that on the pronotum, slightly, if at all, longer. Underside with fine and sparse punctures except on the posterior middle part of metasternum and on the abdominal sternites where they are coarser and closer; pubescence delicate, short and sparse. Male genitalia of the same type as *J. pallidula* but with penis (fig. 30) a little less narrow towards the apex, paramera not constricted in the middle, siphonal capsule broader, with a circular hook.

Length 2.3–2.5 mm., width 1.9–2.1 mm.

Geographical distribution.—The type-locality is Ceylon. The examples before me are from the following localities:—

CEYLON: Dikoya (3000–4200 ft., 6. xii. 1881–16. i. 1882, *G. Lewis*); Kandy (vii. 1908, *G. E. Bryant*); Ceylon (*Thwaites*).

INDIA: Malabar (*Fry's bequest*).

Remarks.—The species is closely related to *J. pallidula*, of which it may possibly be a variety, but owing to the small differences in punctation, pubescence and structure of genitalia, I have considered it advisable to keep it as a separate species.

Jauravia indica, sp. n. (Fig. 3.)

Broadly oval, moderately pointed towards the apex, convex. Upper surface bright yellowish brown with the eyes black and the narrow external border of pronotum and of the elytra lighter in colour. Underside yellowish brown, not quite so bright, legs and epipleuræ slightly lighter. Head with very fine, deep and sparse punctures and golden, delicate, and sparse pubescence which is short except on the clypeus. Pronotum emarginate anteriorly and moderately arched on either side of the head; sides slightly rounded, punctation similar to that on the head, interspaces smooth and shining;

pubescence golden, fine, short and sparse. Elytron with a fairly distinct humerus; external borders moderately expanded anteriorly and gradually narrowed towards the apex. Elytral punctures very fine, deep and more sparse than those on the pronotum; interspaces wider, smooth and shining; pubescence golden, short, sparse and rather subdepressed. Prosternal carinæ straight, diverging slightly and reaching the anterior margin of the segment. Underside with fine, deep and sparse punctures and short, delicate, golden and sparse pubescence. Male genitalia: basal plates comparatively longer than in the preceding species, penis (fig. 28) only slightly expanded towards the narrowly rounded apex, paramera uniformly elongate with about half a dozen strong sensory hairs towards the tip, obtusely bent at distal end, siphonal capsule (fig. 29) less expanded and with a circular hook on the inner side.

Length 2.4 mm., width 2.16 mm.

Type and four paratypes (with ♂ genitalia in one case mounted separately) in the British Museum.

Geographical distribution.—The type locality is:—

INDIA: Nilgiri Hills, South India (*H. L. Andrewes*).

Remarks.—This species is distinguished from the others by its narrower build, very fine deep and sparse punctation, short and sparse pubescence and smooth and shining upper surface.

Jauravia kanarensis, sp. n.

Rounded oval, strongly convex, upper surface testaceous except the black eyes and a black spot on each elytron. The spot rounded oval about one-third as long as the elytron, only slightly narrower than long and situated immediately before the transverse middle line of the elytron. Undersurface very light yellowish brown excepting the fuscous metasternum.

Head finely and moderately closely punctate, sparsely pubescent with whitish, short hairs. Pronotum moderately emarginate in front, slightly curving down at the sides, antero-lateral angles and the sides broadly rounded; punctures slightly coarser and closer than, but the pubescence same as, on the head. Elytra convex, humerus not prominent, the sides gradually sloping and distinctly margined; punctures coarser than those on pronotum, deep and close, the interspaces narrower than

punctures but shining, pubescence whitish, rather short and sparse. Prosternal carinæ reaching the anterior margin of the segment. Underside finely and sparsely punctate excepting the meso- and metasternum and the abdominal sternites which are coarsely punctate; pubescence short, delicate and sparse throughout. Genitalia unknown.

Length 2.3 mm., width 2.0 mm.

Type in the British Museum.

Geographical distribution.—The type-locality as follows:—

INDIA: Kanara, South India (*H. L. Andrewes*).

Remarks.—Described from one ♀ specimen which I have found among eight placed under *Jauravia binotata* by Gorham in the collection of the British Museum. Seven specimens, including the one marked type, are glabrous and belong to the genus *Sticholotis*. The one on which the present description is based is pubescent and belongs to *Jauravia*. Gorham thought that the glabrous specimens had their pubescence rubbed off. The other obvious difference which escaped Gorham is the relative position of the elytral spot which is median in *Sticholotis binotata* and premedian in *Jauravia kanarensis*.

Jauravia quadrinotata, sp. n.

Broadly oval and convex. Head brown with the labrum slightly paler, and the eyes grey. Pronotum and elytra brown, the latter with a slightly darker discal area and each with two large round, usually subequal black spots situated one behind the other, slightly nearer the suture than the external border (fig. 4). The anterior spot extends from the base to one-fourth the length of the elytron and the posterior one extends apically from the transverse middle line to nearly three-fourths the length; posterior spot smaller in one example. Underside testaceous with the elytral epipleuræ flavotestaceous and the metasternum and the base of first sternite dark brown to piceous. Head with fine, rather sparse punctures, and whitish, short and sparse pubescence; pronotum moderately emarginate anteriorly and rounded on the lateral side; punctation slightly coarser, deeper and closer than that on the head but with similar pubescence. External border of elytra narrowly expanded; punctures

coarser, deeper and less dense than those on pronotum ; interspaces smooth, shining and wider than on pronotum, pubescence whitish, long, sparse, rather subdepressed. Prosternal carinæ straight, reaching the anterior margin of the segment, punctures moderately coarse, sparse and deep on the metathorax and the abdominal sternites and fine and sparse on the rest of the underside, which is sparsely pubescent with short delicate hairs. Male genitalia : penis in general outline similar to that of *J. indica*, but slightly broader, siphon moderately bent distally ; siphonal capsule greatly expanded, with a widely open hook.

Length 2.5 mm., width 2.16 mm.

Type and three paratypes in the British Museum.

Geographical distribution.—Locality as follows :—

INDIA : Patkai Mountains, Assam (*Doherty*).

Jauravia simplex (Walker), 1859.

Coccinella simplex Walker, 1859, p. 219.

Scymnus simplex (Walker) Gemminger and Harold, 1876, p. 3797.

Clanis simplex (Walker) Sicard, 1912, p. 505.

Jauravia simplex (Walker) Korschefsky, 1932, p. 588.

Clanis opaca Weise, 1900, pp. 430, 433.

Jauravia opaca (Weise) Korschefsky, 1931, p. 222.

Subhemispherical ; upper surface light brown with the external border of elytra lighter, matt throughout ; underside comparatively bright yellowish brown excepting metasternum which is darker. Head very finely, rather closely punctate, fairly densely pubescent with short yellowish-white hairs, which are longer on margin of epistoma. Pronotum moderately and regularly emarginate anteriorly, slightly rounded on the sides with sometimes a slight swelling at each of the antero-lateral angles ; punctures fine, rather close, uniformly distributed except at the anterior angles where they are coarser and closer ; pubescence yellowish white, short and only moderately dense. Elytra with the external border broadly expanded and distinctly margined, punctation fine and close, interspaces strongly coriaceous and about twice as wide as the punctures ; pubescence similar to that on the pronotum but a little more erect. Underside finely but sparsely punctate, pubescence delicate, short and sparse. Male genitalia : penis (fig. 24)

widening from the base towards the apex to about three-fourths its length and gradually narrowing to a rounded point in the apical one-fourth, siphon long and slender, moderately curved, siphonal capsule (fig. 25) expanded, weakly chitinized and with hook on the inner side circular.

Length 2.2–2.5 mm., width 2.0–2.3 mm.

Type.—In the British Museum.

Geographical distribution.—Type-locality : Ceylon. The examples before me are from :—

CEYLON : Dikoya (3800–4200 ft., 6. xii. 1881–16. i. 1882, *G. Lewis*) ; Galle (on coastal level, 27. xi.–4. xii. 1881, *G. Lewis*) ; Henaratgoda (? xii. 1889, *H. P. Green*) ; Peradeniya (9. x. 1914, feeding on Cecidomyid larva on Coffee, *A. R.*).

INDIA : Belgaum, Bombay (*Andrews*).

Remarks.—The species is closely related to *J. soror* (Ws.), and *J. dorsalis* (Ws.), from both of which it is easily separated by the differences in the punctation and pubescence. Walker's type in the British Museum agrees with the description of *J. opaca* (Ws.), the type-locality of which is also Ceylon. Weise (1900) was apparently unaware of *simplex*, which was originally placed under *Coccinella* and later transferred to *Scymnus* by Gemminger and Harold (1876). In 1912 Sicard suggested that *soror* should be regarded as a synonym of *simplex*. While agreeing with him that the latter is a species of *Jauravia*, I differ from him in regarding the two species as synonymous, because the upper surface of *simplex* is rather coarsely wrinkled, matt and with shorter and denser pubescence, while in *soror* it is smoother, shining like a greasy surface and with long and sparse pubescence. They differ also in size, *simplex* being smaller than *soror*.

Jauravia albidula Mots., 1866.

Jauravia albidula Motschulsky, 1866, p. 424 ; Weise, 1900, p. 433 ; Korschefsky, 1931, p. 222.

Clanis pubescens Weise (not Fabr.), 1892, p. 25, 1900, p. 432 ; Korschefsky, 1931, p. 222.

Hemispherical, very light yellowish brown excepting the black eyes, the dark-brown external margins of elytra and the brownish metasternum and the first abdominal sternite. Head finely and sparsely punctate and with

golden, delicate and sparse pubescence; hairs short except for a transverse row of long ones situated a little before the anterior margin of the clypeus. Pronotum deeply emarginate anteriorly, sides not rounded but almost straight, antero-lateral angles pointed; punctation fine, fairly deep and sparse; interspaces somewhat coriaceous, and not very bright; pubescence golden, short, slightly erect and sparse as on the head. Lateral borders of elytra very broadly expanded, slightly raised at the humeral angle, and distinctly margined; punctation coarse but shallow, moderately close; interspaces smooth and very shiny, pubescence light golden, nearly twice as long as that on pronotum, sparse, erect, brittle and easily brushed off. Carinæ not reaching the anterior margin of the prosternum. Underside with very fine and sparse punctures except on the meso- and metasternum and the sternites, where they are rather coarser; pubescence golden, fine, short and sparse. Penis (fig. 26) nearly uniformly broad from the base towards the apex, which is slightly emarginate on either side of the broadly rounded median part. Siphon nearly straight, not curved at the distal end, siphonal capsule (fig. 27) moderately expanded and with a broad hook on the inner side. The last segments of the abdomen of a female adult elongate, as shown in fig. 19.

Length 2·8–3·0 mm., width 2·8–3·0 mm.

Geographical distribution.—Type-locality, Ceylon. The four examples before me are from the following locality:—

CEYLON: Dikoya (3800–4200 ft., 6. xii. 1881–16. i. 1882, G. Lewis).

Remarks.—At first sight the very light yellowish-brown colour of the beetles gives an impression of their being immature specimens. An examination of the darker brown colour of the extreme margins of elytra and of the thoracic and abdominal sternites, however, seems to suggest that the general body colour of the mature specimens remains very light yellowish brown as originally described by Motschulsky. The species resembles *J. dorsalis* Ws. in outline and shape but is easily distinguished by its distinctly coarser and very shallow punctation on the elytra, the golden pubescence, the angular shape of pronotum and the structure of the male genitalia.

Jauravia pilosula (Weise), 1900.*Clanis pilosula* Weise, 1900, pp. 429, 433.*Jauravia pilosula* (Weise) Korschefsky, 1931, p. 222.

Subhemispherical; colour from light to deep testaceous with the elytral epipleuræ paler. Head and pronotum with fine, deep and fairly close punctures, interspaces rather dull, much less bright than those of elytra, pubescence whitish, short and sparse. Pronotum moderately emarginate anteriorly, the sides fairly rounded, antero-lateral angles broadly rounded. Elytra with broadly expanded lateral borders, very coarsely, deeply but sparsely punctate, interspaces smooth and very bright, pubescence fine, golden, sparse and nearly twice as long as that on the pronotum. Prosternal carinæ reaching anterior margin of segment. Underside very finely and sparsely punctate except for the meso- and metasternum and the abdominal sternites, which have coarser punctures; pubescence fine, yellowish, short, sparse and subdepressed. Male genitalia (fig. 17): penis broader towards apex for about two-thirds its length, after which the sides run rather subparallel before converging to a small rounded apex; siphon slightly bent distally, the siphonal capsule (fig. 18) expanded and with a narrow hook on the inner side.

Length 2.3–5 mm., width 2.2–2.4 mm.

Geographical distribution.—Type-locality Ceylon; the examples before me are from the following localities:—

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

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

Remarks.—The species resembles *J. albidula* Mots. in the coarse punctation and long, erect pubescence, but differs in having the punctures deeper. The two species are also distinct in body form, shape of pronotum and structure of the male genitalia.

Jauravia soror (Weise), 1892.

Clanis soror Weise, 1892, p. 25, 1895, p. 155, 1900, p. 433; Gorham, 1894, p. 204; Lefroy, 1909, p. 308, pl. cxxxii. fig. 11; Misra, 1913, p. 315, 1924, p. 135; Schilder and Schilder, 1928, p. 238.

Jauravia soror (Ws.) Korschefsky, 1931, p. 222.

Subhemispherical; upper surface reddish brown to reddish testaceous, excepting the lighter external borders of elytra which are shining like a greasy surface; underside brown, excepting the yellowish-brown epipleuræ

of prothorax and of elytra, and the legs. Head very finely and fairly densely punctate; pubescence whitish, fairly long but sparse. Pronotum deeply emarginate anteriorly, slightly rounded laterally, anterolateral angles also rounded; punctation fine and close; pubescence, whitish, long and rather sparse. Elytra with the external borders broadly expanded and distinctly margined, punctures fine, shallow and less dense, as compared to those on the pronotum; the interspaces coriaceous, and shining like a greasy surface; pubescence whitish, long, suberect and sparse. Underside finely and sparsely punctate, pubescence yellowish white, short, delicate, subdepressed and rather sparse. Male genitalia: penis (fig. 22) similar to that of *J. simplex* except that it is not so acutely narrowed towards the apex as in *simplex* and expands from the base to nearly four-fifths its length instead of three-quarters, as in *simplex*. Siphon is without undulations near the siphonal capsule (fig. 23), which has a narrow hook on the inner side.

Length 2.5–2.8 mm., width 2.4–2.65 mm.

Geographical distribution.—Type-locality Mandar, near Ranchi, Bihar Province, India.

The examples before me are from the following localities:—

INDIA: Chetpat Polur, Madras Province (15. iv. 1931, *P. S. Nathan*); Nilgiri Hills, Madras Province (*H. L. Andrewes*); South Mysore (*H. L. Andrewes*); Koil-patti, Pudukkottai State, S. India (feeding on *Hemaspidopectus cinereus* (Gr.) (Coccidæ) on citrus, 23. x. 1944, *V. P. Rao*); Malabar, Bombay Province (*Fry's bequest*).

Remarks.—Recorded from Ceylon by Gorham (1894), but I have not seen an example from that locality. It appears to be the commonest Indian species of the genus and has spread from South India northwards to Bombay Province. Its biology has been given by Lefroy (1909) and Misra (1913, 1924), who report it as feeding on the mite *Tetranychus bioculatus* Wood-Mason and *Dialeurodes citri* Ril. & How. (Aleurodidæ).

Jauravia dorsalis (Weise), 1908. (Fig. 2.)

Clavis dorsalis Weise, 1908, p. 227; Sicard, 1912, p. 505.

Jauravia dorsalis (Weise) Korschevsky, 1931, p. 222.

Hemispherical; general colour of the body usually reddish brown, the immature specimens being pale

testaceous. Head and its appendages testaceous, excepting the dark grey eyes. Pronotum and elytra reddish brown, the latter each with the discal area (fig. 2) fuscous. Underside lighter in colour, with the greater part (excepting the external border) of the elytral epipleuræ pale testaceous. Head finely and densely punctate, pubescence greyish white, moderately long and close. Pronotum also finely punctate except towards the antero-lateral angles where the punctures are rather coarse and tend to fuse with one another; pubescence similar to that on the head, but slightly longer; elytra with the lateral border very broadly expanded; coriaceous, with the punctation very fine and close and the interspaces smooth; pubescence distinctly longer than that on the pronotum and head, ashy white, suberect, sparse and rather brittle. Prosternal carinæ not reaching anterior margin of segment. Underside with the punctation very fine and sparse and the pubescence white, short and sparse. Penis (fig. 20) slightly broader a little below the base but narrowing in the apical one-fourth to a rounded point; siphonal capsule (fig. 21) large, with a wide circular hook on the inner side.

Length 2·7–3·0 mm., width 2·7–3·0 mm.

Geographical distribution.—The type-locality is Pondichery, South India. The examples before me are from the following localities :—

INDIA: Madras Province, Coimbatore (predaceous on *Fiorinia plana* (Coccidæ), 19. xi. 1928, *C. K. S.*); Ketti (19. 4. 1929, *M. S. K.*); Paidapalle, Chandragiri, February–March, 1928, *M. S. K. Coll.*); Nilgiri Hills (*H. L. Andrewes*; *A. K. W. Downing*).

Also recorded by Sicard (1912) from Burma.

Remarks.—This species is close to *J. soror* Ws., from which it may be distinguished by the fuscous disc of the elytra, and by the structure of the prosternal carinæ and the male genitalia.

SUMMARY.

All the previously known species of the genus are re-described; the new species described are *Jauravia indica* and *J. kanarensis* from South India and *J. quadrinotata*

from Patka Mountains, Assam. The following synonyms and transfers are proposed :—

The tribe Clanini Weise (1900) should be regarded as synonymous with Pharini Casey (1899) and its only genus, *Jauravia* Mots., placed nearer *Sticholotis* Crotch; *J. opaca* (Ws.) should be regarded as a synonym of *J. simplex* (Walk.) which is a distinct species and not a synonym of *J. soror* (Ws.); *limbata* Mots. is transferred back to *Jauravia* from *Sticholotis*. The following species formerly associated with *Jauravia* are transferred to other genera: *Scymnus univittata* (Gorham), *Pharoscymnus suturalis* (Sicard), ? *Pentilia testivestis* Mulsant, *Sticholotis binotata* (Gorham).

The following new records of the hosts of the various species are made: *J. dorsalis* (Ws.) predaceous on *Fiorinia plana* Green (Coccidæ) in South India; *J. pallidula* Mots. on Diaspines on guava in South India; *J. simplex* on Cecidomyiid larvæ on coffee in Ceylon; *J. soror* on *Hemaspidoproctus cinereus* (Green) (Coccidæ) in South India.

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IX.—Taxonomic Notes on Curculionidæ (Col.).

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BRACHYDERINÆ.

Siderodactylus puellaris and *delectans* Pasc. belong to the genus *Ischnotrachelus* Schönh., and the former is a synonym of the latter (types compared). Moreover, *Ischn. argentatus* Fst. is also a synonym of *delectans*.

Miostictus Pasc. (Bull. Ent. Soc. Belg. xxx. 1886, p. cliv) appears to have been omitted from the Coleopt. Catalogus. Pascoe placed it in the Leptopinæ, but it belongs to the Tanymecini somewhere near *Chlorophanus*.

Canedorus, n. n., for *Canephorus* Kirsch, 1889, nec Erichson, 1846 (Vermes).

OTTORHYNCHINÆ.

Mylocerus rusticus Pasc. (1869), from Australia, has been wrongly treated in the Col. Cat. as if it were the same as *rusticus* Fst. (1897), from India, which is a quite distinct species and needs a new name, viz., *infaustus*, n. n.

Hustache (Mission Scient. de l'Omo, v. fasc. 50, 1939) has transferred *Xestorrhinus favosus* Aur. and *X. costatus* Mshl. to *Seneciobius*, but according to his own key they should remain in the former genus because they lack the deeply impressed hind coxæ and the apex of the rostrum is deeply excised, and these are the two essential characters that separate *Xestorrhinus* from *Seneciobius*. *Costaseneciobius* Hust. will therefore sink as a synonym of *Xestorrhinus*.

Similarly *Xestorrhinus brevirostris* Aur. should not be included in *Seneciobius*, because the hind coxæ are not deeply impressed and the structure of the base of the elytra is very different. *Strictoseneciobus* Hust. (1939) should therefore be treated as a distinct genus.