

matter is, it seems to me, that the property discovered must belong to the curve with which alone we are concerned, and must also be represented by the differential equation to be interpreted. We miss the mark, if we bring in any other curve which is totally foreign to our purpose. I believe, then, that though the theorem enunciated by Professor Sylvester is perfectly correct, it is *not* the geometrical interpretation of the Mongian equation as contemplated by Boole; what Boole sought for in vain, has yet to be discovered.

26th June 1887.

XII.—*Notes on Indian RHYNCHOTA, HETEROPTERA, No. 2.*

By E. T. ATKINSON, B. A., PRESIDENT.

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Fam. PENTATOMIDÆ.

Subfam. SCUTELLERINA, Stål.

En. Hem. i, p. 4 (1870); iii, p. 3 (1873):—*Scutellerides*, *Pachycorides*, *Tetyrises* and *Eurygastrides*, pt, Am. & Serv., Hist. Nat. Ins. Hém. pp. 25-51 (1843):—*Praanguli* pt, Amyot, A. S. E. F. (2 s.) iii, p. 401 (1845):—*Pachycoridæ* and *Eurygastridæ*, Dallas, List Hem. i, p. 3, 43 (1851); Walker, Cat. Het. i, p. 1, 61 (1867):—*Scutellerida*, Stål, Hem. Afric. i, p. 32, 33 (1864); Hem. Fabr. i, p. 9 (1868).

Primary and subtended veins of wings distant, including a broad area in the middle: hamus present: scutellum very large, without frena.

Div. ELVISURARIA, Stål.

Meso- and meta-sternum with two high wrinkles or ridges, those on the former higher forwards: thorax and scutellum at base, together gradually convex; thorax, at base, produced hindward between the basal angles of the scutellum: second joint of rostrum much shorter than the two apical joints taken together, and a little longer than the apical joint: venter furrowed, without stridulatory strigose spots, incisures gradually curved on the disc.

Genus OXYPRYMNA, Stål.

En. Hem. iii, p. 5 (1873):—*Elvisura*, Stål (nec Spinola) Hem. Afric. i, p. 35 (1864.)

Venter with a distinct broad furrow continued through it: scutellum with a small spine at the apex. In *Elvisura*, the spine is wanting.

58. OXYPRYMNA SPINOLÆ, Sign.

Elvisura spinollæ, Sign., A. S. E. F. (4 s.) i, p. 55, t. 2, f. 5 (1861); Walker Cat. Het. i, p. 61 (1867).

Oxyprymna spinolæ, Stål, En. Hém. iii, p. 5 (1873).

Black shining: the head, pronotum, scutellum and especially the abdomen, covered with a grey, powdery, pubescence: pronotum and scutellum with round yellow spots. Head stout, rounded in front, the tylus not extending beyond the juga; the lateral margins weakly sinuate; eyes a little prominent; ocelli equally distant from the eyes and the median line and somewhat near the posterior border; entire head, above and below, except some weakly convex portions, covered with a greyish pubescence which when removed discloses an extremely fine punctuation: anterior border of pronotum straight, sides scarcely sinuated, posterior border strongly rounded, and extending over the scutellum; posterior angles obtusely rounded; near the anterior border are some depressions in which is the grey pubescence, also on the sides and behind the posterior angles; on the disc are some small, round, yellowish marks: scutellum acuminate at the tip, reaching the end of the abdomen, and furnished with a strong median ridge; on each side, near the lateral borders, are depressions clothed with the grey pubescence, and on the disc 6-7 small yellowish patches like those on the pronotum, and towards the second-third a punctured, yellowish band: hemelytra extending weakly beyond the scutellum: abdomen with a strong median groove and covered with a silken grey pubescence, very abundant: feet short, stout, covered with the same pubescence. (*Sign.*) Long, 16; broad 9 mill. Reported from India.

Genus SOLENOSTETHIUM, Spinola.

Solenosthedium, Spinola, Ess. p. 360 (1837); Dallas. List Hem. i, p. 36 (1851)). *Solenostethium*, Am. & Serv., Hist. Nat. Ins. Hém. p. 26 (1843); Mayr, Reise Novara, Hem. p. 13 (1866); Stål, En. Hem. iii, p. 5 (1873). Includes *Cæloglossa*, Germar, Zeitschr. i (i) p. 130 (1839); Herr. Schöff., Wanz. Ins. v, p. 59 (1839); Stål, Hem. Afric. i, pp. 35, 52 (1864).

Body obovate: head a little convex, triangular, rather inclined and flattened; eyes rather stout, globose; ocelli more distant from each other than from the eyes; tylus longer than the juga; antennæ, slender, 5-jointed, somewhat short, second joint shortest, 3-5 joints successively increasing in length: first joint of rostrum not extending beyond the lower surface of the head, fourth joint reaching the end of the rostral canal, between the third pair of feet: thorax sexangular, basal produced part truncate, basal margin straight, posterior and lateral angles round-

ed : scutellum very large, as broad as the abdomen : sterna and venter furrowed, the sternal furrow ended on both sides by a high ridge, the mesosternal ridges not produced anteriorly : venter in ♂ with two large, opaque, remotely somewhat-pilose spots : tibiæ cylindrical, above slightly bisubsulcate, furnished with a median ridge, margined on both sides (*Spin., Stål*).

59. *SOLENOTETHIUM RUBRO-PUNCTATUM*, Guérin.

Scutellera rubro-punctata, Guérin, Voy. Coq. Zool. ii. (2) p. 157 (1838).

Solenosthedium rubro-punctatum, Dallas, List Hem. i, p. 7 (1851).

Solenostedium rubro-punctatum, Voll., Faune Ent. l'Arch. Indo-Néer. i, p. 4, t. 1, f. 1 (♂) (1843) : Walker, Cat. Het. i, p. 4 (1867).

Solenostethium rubropunctatum, Stål, En. Hem. iii, p. 6 (1873) : Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Head, thorax and scutellum of a rather deep reddish brown : head triangular, immaculate, with a small longitudinal elevation in the middle ; antennæ black : thorax sprinkled with numerous, very small, indistinct, green dots ; three round orange spots on each side, of which one on the anterior margin immediately behind the eyes, another in the middle and a third near the posterior margin ; anteriorly a seventh spot in the middle : the scutellum is without green dots and has six orange spots at the base at an equal distance from each other, and four in the middle behind these, also at an equal distance from each other : body beneath ferruginous yellow with a small black spot on each side of each segment of the abdomen : femora reddish, with the tibiæ and tarsi black (*Guérin*). Long, 13 ; broad $8\frac{1}{2}$ mill.

Reported from China, Java, Assam. The Indian Museum has specimens from Naga hills, Sikkim. The ♂ has 10, the ♀ 8 spots on the scutellum. *S. chinense*, Stål, is probably only a local variety, as the links between it and *S. rubro-punctatum* are nearly complete.

Div. SPHÆROCORARIA, Stål.

Meso- and meta-sternum without ridges, sometimes furrowed. Body above very convex, beneath very slightly so : head transverse, very much inclined or perpendicular : thorax and scutellum at the base, together, gradually longitudinally convex, basal margin of thorax obtusely rounded towards the basal angles of the scutellum, posterior angles usually obtusely rounded, not distinguishable as angles : second joint of the rostrum much shorter than the two apical together : venter without stridulatory, strigose spots, incisures gradually curved towards the middle.

Genus *HYPERONCUS*, Stål.

Ofvers. K. V.-A. Förh. p. 615 (1870); En. Hem. iii, p. 7 (1873).

Body obovate, above much, beneath slightly convex: head much inclined, triangular, with the eyes broader than long, very slightly convex, lateral margins slightly sinuate near the eyes: rostrum reaching the apex of the third ventral segment, second and third joints almost equally long, first and fourth shorter than them: antennæ 5-jointed (?), first joint not reaching the apex of the head: thorax sexangular, anterior margin very broadly sinuate between the eyes, anterior lateral margins subacute not retusely-sinuated before the lateral angles, basal margin straight, posterior angles obtusely rounded: scutellum as broad as the abdomen, gradually less convex towards the posterior part, anterior margin of prostethium obtusely roundly-dilated towards the coxæ: mesosternum slightly sulcated: odoriferous openings continued outwards in a long furrow: venter longitudinally, slightly furrowed before the middle, sides flat, margins acute, incisures gradually curved in the middle: feet somewhat shortish, tibiæ furnished with two furrows above. Differs from *Sphærocoris* in having the anterior lateral margins of the thorax not retusely sinuated at the lateral angles, the sixth ventral segment in ♂ is roundly produced at the apex and covers the genital segment and in ♀ is arcuately sinuate, leaving the genital valvules free, also the tibiæ above are slightly somewhat 2-furrowed, with a distinct wrinkle between the furrows.

60. *HYPERONCUS LATERITIUS*, Westwood.

Sphærocoris lateritia, Westw., Hope, Cat. Hem. i, p. 13 (1837).

Sphærocoris lateritius, Germar, Zeitschr. i (i) p. 79 (1839): Dallas, List Hem. i, p. 10 (1851); Walker, Cat. Het. i, p. 6 (1867).

Hyperoncus lateritius, Stål, En. Hem. iii, p. 7 (1873).

Obscurely rufescent, much punctured: pronotum with four dots arranged in a transverse line; scutellum with twelve (six, four, two); body beneath antennæ and feet, rufescent; abdomen with a large basal spot (*Westw.*). Body long 11-11½ millims.

Reported from China: there is a doubtful specimen in the Indian museum from the Dikrang valley (Assam).

Div. *SCUTELLARIA*, Stål.

Meso- and meta-sternum without wrinkles or ridges, sometimes furrowed: body beneath distinctly convex, generally above and below equally convex or beneath more convex. Thorax at the base backwards, scutellum at the base forwards, more or less convexly-inclined

which is best seen from the side; thorax generally distinctly truncated posteriorly before the entire base of the scutellum, basal angles generally very distinct, situate before or outside the basal angles of the scutellum: venter without stridulatory strigose spots, rarely in ♂ with two opaque spots, incisures gradually curved towards the middle: second joint of rostrum generally shorter and often much shorter than the two apical joints taken together.

Genus CANTAO, Am. & Serv.

Hist. Nat. Ins. Hém. p. 29 (1843); Dallas, List Hem. i, p. 3, 17 (1851); Walker, Cat. Het. i, p. 14 (1867); Stål, Hem. Afric. i, p. 33 (1864); En. Hem. iii, pp. 8, 10, (1873); Mayr, Reise Novara, p. 14 (1866).

Body narrowly obovate, elongate: head narrow, elongate, lateral margins slightly sinuate; rostrum not extending beyond the first segment of the abdomen: pronotum broader than long, basal margin straight towards the sides, posterior angles very distinct, dentated, no transverse furrow; scutellum as broad as the abdomen, longer, distinctly impressed at the base near the angles, somewhat truncate or flattened at the tip; exterior margin of corium straight; membrane extending beyond the end of abdomen; anterior margin of propleura entirely obtuse, somewhat callous, posterior margin not sinuate at the angles: venter without opaque spots, with a longitudinal groove in the middle, sides more or less convex, genital segment in ♂ duplicate or divided into two parts, the basal rounded at its tip, the other extremely trilobed and truncate at the tip; vulvar plates in ♀, narrow.

61. CANTAO OCELLATUS, Thunberg.

Cimex ocellatus, Thunberg, Nov. Ins. Spec. iii, p. 60, f. 72 (1784): Gmelin, ed. Syst. Nat. i (4), p. 2133 (1788).

Cimex dispar, Fabr., Ent. Syst. iv, p. 81 (1794); Donovan, Ins. China, Hem., t. 13, f. 1 (1798), sec. Dallas: Stoll, Punaies, p. 143, t. 37, f. 260 A. & B. (1788).

Tetyra dispar, Fabr., Syst. Rhyng. p. 129 (1803); Schiödte, Kroyer's Nat. Tidsskr., iv, p. 281 (1842).

Callidea dispar, Burm., Handb. ii (i) p. 394 (1835); Herr. Schäff., Wanz. Ins. iii, p. 99, t. 105, f. 324 (1835).

Calliphara dispar, Germar, Zeitschr., i (i) p. 123 (1839).

Callidea ocellata, Westw., Donovan l. c. p. 47, t. 20, f. 1. (1842).

Scutellera dispar, Blanchard, Hist. Nat. Ins. iii, p. 158, Hém. t. 8, f. 2 (1840).

Cantao dispar, Am. & Serv., Hist. Ins. Hém. p. 29 (1843).

Cantao rufipes, Dallas, List Hem. i, p. 17 (1851); Walker, Cat. Het. i, p. 14 (1867).

Cantao ocellatus, Dallas, l. c. p. 17 (1851); Vollen., Faune Ent. l' Arch. Indo-Néerl., i, p. 10 (1863); Walker, l. c., p. 14 (1867); Stål, Hem. Fabr., i p. 9 (1868); Ofvers. K. V.-A. Förh. p. 616 (1870); En. Hem. iii, p. 10 (1873); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Orange yellow or carneous: head yellow, the base and antennæ cœrulean: pronotum and scutellum carneous, the former with sometimes many, sometimes fewer flavescent spots, some with a black point scutellum large, with a small impressed moon-shaped black spot on each side at the base, then three yellow rings marked with a black point, the median larger, behind the middle are two small yellow lunules spotted black and posteriorly rings with a black point in the middle: pectus cyaneous: abdomen carneous with four cyaneous macular striæ; of which the median are larger: feet cyaneous, femora rufous: varies with the sex, with thorax having on both sides a very acute, incurved porrect spine, yellow at base, black at apex (*C. dispar*, Fabr.). Long 14-23 mill. Very variable in the colour above, from a pale sordid yellow to a deep rich orange-red, and in the spots on the pronotum and scutellum, from almost immaculate with merely traces of spots, to the full number; all these varieties occur in India.

Reported from Java, Sumatra, Philippines, China, India. The Indian Museum has specimens from Assam, Sikkim, N. India, Malabar, Ceylon, China.

Genus *PÆCILOCORIS*, White, Dallas.

Pæcilochema, White, Trans. Ent. Soc. iii, p. 84 (1842): Stål, En. Hem. iii, p. 11 (1873): *Pæcilocoris*, Dallas, Trans. Ent. Soc. v, p. 100 (1848); List Hem. i, p. 4 (1851); Stål, Hem. Afric., i, p. 33 (1864); Mayr, Reise Novara, Hem., p. 17 (1866); Walker, Cat. Het. i, p. 8 (1867). The name *Pæcilochema* was used by Stephens in 1829 for a Lepidopterous genus of *Tortrices*, and Dallas with White's consent changed the name of the Hemipterous genus to *Pæcilocoris* in 1848 and described it for the first time, so that for very good reasons, the new name must stand.

Body ovate, convex: head rather large, broad, the lateral margins sinuated before the eyes: antennæ about half the length of the body, 5-jointed; basal joint short, robust; second, shorter and most slender; 3-5 joints each as long as, or longer, than the two basal united, nearly equal, compressed, broad and furrowed longitudinally on the sides: rostrum usually extending beyond the second segment of the abdomen, sometimes nearly to its apex: scutellum slightly truncated at the apex: abdomen with a more or less distinct furrow beneath; the three penultimate segments in the ♂ not bearing the dull space on each side which exists in *Tectocoris*, Hahn, and the anal plate, in ♂, simple, formed of one piece, sinuated at the tip and fringed with hairs (*Dallas*).

62. *PÆCILOCORIS HARDWICKII*, Westwood.

Tectocoris Hardwickii, Westwood, Hope, Cat. i, p. 13 (1837).

Tectocoris affinis, Westwood, l. c. p. 13 (1837).

Pachycoris nepalensis, Herr. Schäff. Wanz. Ins. iv, p. 1. t. 109, f. 339 (1839).

Scutellera Hardwickii, Germar, Zeitschr. i (i) p. 135 (1839).

Pæcilochroma Hardwickii, Stål, En. Hem. iii, p. 12 (1873); Distant, A. M. N. H. (5 s.), iii, p. 44 (1879).

Pæcilocoris Hardwickii, Dallas, Trans. E. S. v, p. 107, t. 13, f. 8 (1848): List Hem. i, p. 13, (1851); Walker, Cat. Het. i. p. 8 (1867).

♂, ♀. Ovate, convex, above yellowish orange or red, opaque, rather finely and thickly punctured, head black, thickly and strongly punctured; eyes and ocelli brownish: pronotum with the anterior portion and two large spots on the disc, black: scutellum slightly wrinkled transversely at the base; normally, with eleven black spots, placed, three at the base of which the median one is large and elongated-triangular, a small round one on each side of the apex of this, a transverse row of four across the disc, behind the middle, the two intermediate of which are the largest and the two smaller towards the apex; these spots are generally more or less confluent or partially obsolete, forming several varieties: margins of the hemelytra black piceous: abdomen beneath orange-red, very faintly wrinkled, the basal segment entirely, the second (except the middle), the third and fourth on the lateral margins, the terminal segment, except its lateral margins, (and in the ♂, the base) and the anal apparatus, violet-black; the penultimate segment is entirely red: pectus black, tinted with violet, finely punctured; the lateral angles of the prostethium and part of the antero-lateral margins, red: legs violet-black: antennæ and rostrum black. Dallas remarks that in *P. nepalensis*, Herr. Schöff., the spots have become confluent so that the general colour of the upper surface is black: the pronotum is nearly covered by the two spots on the disc which extend forwards to the black anterior margin and posteriorly to the hinder margin; the five spots at the base of the scutellum are united, forming a large waved band across the base, from the middle of which the apex of the triangular basal spot projects, while the two intermediate spots of the transverse row are joined to one another and to the two subapical ones, forming a large, rounded lobate patch. In *P. affinis*, Westwood, the two subbasal and the two subapical spots are wanting and the two spots on the disc are sometimes obsolete. There are numerous varieties between these, but all are distinguishable by the uniform red colour of the fifth abdominal segment (*Dallas*). Body long, 17-20 mill. a very variable species: in some the spots are large and confluent so as to make the general appearance of the upper surface of the scutellum black, and in others red is the prevailing colour. *P. nepalensis*, Herr. Schöff., if not specifically different, forms a well marked variety. Obovate, moderately convex; black, shining, finely and closely punctured, on the antennæ, feet and the underside, bright shin-

ing violet: the posterior greater part of the thorax (except two round black spots), a broad transverse band above the middle of the scutellum having forwards four and hindwards three obtuse teeth, and the apical margin of the scutellum, sanguineous. In it, the subbasal spots on the scutellum are confluent so as to form a black band more or less broad, posteriorly dentate; whilst in *T. affinis*, Westwood both the sub-basal and sub-apical spots are wanting. *P. hardwickii* in Dallas' figure, forms the mean between these two extremes.

Reported from India, Nepál, Silhat: the Indian Museum has specimens from the Khasiya and Nága hills, Sibságar and Sikkim.

63. *PÆCILOCORIS LATUS*, Dallas.

Pæcilocoris latus, Dallas, Trans. Ent. Soc. v, p. 101, t. 13, f. 4 (1843); List Hem. i, p. 12 (1851); Walker, Cat. Het. i, p. 9 (1867).

Pæcilochema lata, Stål, En. Hem. iii, p. 12 (1873).

♂, ♀, Rounded-ovate, not very convex; above yellow, clouded with orange-red, thickly punctured: head violet, shining, thickly and strongly punctured; eyes brown; ocelli red: pronotum thickly punctured, somewhat rugose, with the anterior angles, and two large spots on the disc, extending to the posterior margin, deep blue-violet: scutellum thickly and finely punctured, slightly wrinkled transversely at the base; with a spot in each basal angle, a large, irregular, transverse patch in the middle of the base, and a transverse row of four spots of which the two intermediate are by much the largest, across the disc, behind the middle, deep blue-violet; the surface around all the spots clouded with orange-red: margins of hemelytra, black: abdomen beneath red, immaculate, thickly and finely punctured, and slightly pilose, with a strong median furrow at the base: anal apparatus reddish: pectus thickly punctured, yellowish, variegated with blackish violet, the prostethium pale red, with a violet-black spot at the base of the anterior legs: femora testaceous, [sometimes violet-black] their apices with the tibiæ and tarsi shining violet-black: head beneath yellowish in the middle, with its margins violet: antennæ black, the two basal joints with a violet tinge: rostrum testaceous with the two last joints black, the tip reaching the base of the fourth ventral segment. In some the fine spots in the middle of the base of the scutellum are confluent but normally they are as in *P. Druræi*, Dallas. Body, long 19-21 mill.

Reported from China, Assam. The Indian Museum has specimens from Assam. The variety with the five spots at the base of the scutellum confluent agrees with *P. donovani*, Burm. in this particular, and also in the absence of the two subapical spots and the length of the rostrum, but differs in form and general colouring.

64. *PÆCILOCORIS ORNATUS*, Dallas.

Pæcilocoris ornatus, Dallas, List Hem. i, p. 15 (1851); Walker, Cat. Het. i, p. 9 (1867).

Pæcilochema ornata, Stål, En. Hem. iii, p. 12 (1873); Scott, A. M. N. H. (4 s.) xiv, p. 289 (1874).

Above orange-yellow, finely punctured with black: head rather short, the tylus considerably longer than the juga, with the apex slightly turned up; vertex black, with three rows of golden green punctures of which the lateral are broadest, and include the ocelli; front of head, deep red, punctured with violet and green; the apex orange: thorax with the anterior and lateral margins and two large spots on the posterior margin, black, leaving only a narrow transverse band and a longitudinal median line, orange; scutellum with fine confluent black spots on the basal half, forming a broad, irregular W; four others across the middle, united in pairs; forming a band interrupted in the middle, and two close to the apex; all the black spots are tinted with violet and brassy green; abdomen beneath ochreous, very finely punctured, with a large strongly punctured golden-green spot, on each side of every segment; ventral furrow reaching the apex of the fifth segment; pectus testaceous, variegated with golden-green: femora of the same colour with golden-green reflections; tibiæ brown, slightly metallic; tarsi piceous: rostrum yellowish-brown, with the tip black, reaching the middle of the fourth ventral segment: antennæ violet black; basal joint orange-black at the tip (*Dallas*). Long 15—15½ mill.

Reported from N. India, Japan.

65. *PÆCILOCORIS DRURÆI*, Linn.

Cimex druræi, Linn., Mant. Pl. ii, p. 534 (1771); Drury, Ill. Ins. i, p. 94, t. 42, f. 1 & 5, a, b (1770); Sulzer, Gesch. i, p. 95, t. 10, f. 5 (1776); Fabr., Syst. Ent. p. 697 (1775); Spec. Ins. ii, p. 339 (1781); Mant. Ins. ii, p. 281 (1787); Ent. Syst. iv, p. 83 (1794); Gmelin ed. Syst. Nat. i (4), p. 2129 (1788); Stoll, Punaies, p. 147, t. 37, f. 267 (1788). India.

Tetyra druræi, Fabr. Syst. Rhyng. p. 132 (1803); Burm. Nov. Acta Leop. xvi, Suppt. i, p. 287 (1834).

Scutellera druræi, Germar, Zeitschr. i (i), p. 135 (1839).

Pæcilocoris druræi, Dallas, Trans. Ent. Soc. v, p. 103, t. 13, f. 6 (1848); List Hem. i, p. 12 (1851); Walker, Cat. Het. i, p. 8 (1867).

Pæcilochema druræi, Stål, En. Hem. iii, p. 12 (1873); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Scarlet: head and antennæ black; antennæ 5-jointed, a little longer than the thorax, the two first joints, shortest: thorax convex, the lateral margins slightly reflexed, two suboval spots which form an obtuse angle with the head and are truncated on the sides, black:

scutellum with two black bands formed of confluent spots [not always confluent], the basal allowing two scarlet spots to be seen, that just below the middle, irregularly indented on both sides and two round black spots at the apex: hemelytra opaque, membrane fine and with the wings semi-transparent: abdomen beneath scarlet, with an oblong black spot at the anus, and four others on each side reaching the margin: pectus, rostrum and legs blue-black (*Drury*). Long 18 mill.

Dallas remarks that the normal condition of this species exhibits the typical colouring of the genus: in it the spots on the scutellum are arranged,—five basal, of which the median one is somewhat triangular and rather short, the two intermediate smallest; two behind these, placed opposite the intermedial basal ones, a row of four across the disc, rather behind the middle and two towards the apex: the seven spots at the base are frequently confluent, forming a large basal patch with three large notches in its posterior margin (as in *Drury's* figure); the row of spots across the disc is also often united to form a transverse band. The narrow basal segment of the abdomen and generally the second segment also, are violet-black; the stigmata of the other segments are surrounded by spots of the same colour which generally occupy the entire lateral margins of the segments and thus form a black border to the abdomen; the terminal segment, except the posterior and lateral margins, is black.

Reported from Hong-Kong, Silhat, Assam: the Indian Museum possesses specimens from Sikkim and Assam.

66. *PÆCILOCRIS OBSOLETUS*, Dallas.

Pæcilocris obsoletus, Dallas, Trans. Ent. Soc. v, p. 104 (1848); List Hem. i, p. 12 (1851); Walker, Cat. Het. i, p. 8 (1867).

♂. Ovate, above bright velvety-red, thickly punctured: head and eyes, black; ocelli reddish: thorax with the anterior and lateral margins smooth, shining, rather coarsely and irregularly punctured; two indistinct yellowish patches within the anterior angles, and faint indications of two elongated violet spots on the disc: scutellum slightly wrinkled transversely at the base, and with indications of eleven violet spots, placed five at the base, two behind these, and four in a transverse row across the middle; the apical portion orange, finely reticulated with red; margins of hemelytra bright red, thickly and coarsely punctured: abdomen red, shining, with a few scattered punctures, and a faint longitudinal furrow at the base; the basal segment pitchy black, a small spot around each of the stigmata, and a large crescent-shaped one, on the terminal segment, black: anal apparatus red: pectus violet-black,

shining, finely and sparingly punctured, a dull space on each side of the meso- and meta-stethium; the antero-lateral margins and the lateral angles red: femora brownish, slightly tinted brassy, their apices, the tibiæ and tarsi, brassy black; head beneath shining violet, punctured, yellowish at the base: antennæ black, the three basal joints tinted with violet and brassy, the two apical covered with short greyish hairs; rostrum pitchy (*Dallas*). Long, 19 mill.

Reported from Hong-Kong: I possess specimens from Assam and Sikkim. Dr. Stål united this species with *P. druræi*, and, although the indications of spots are arranged in exactly the same manner as in *P. druræi*, the two subapical ones are generally wanting, whilst the red colour of the margins of the hemelytra, the colour of the legs, the peculiar texture of the margins of the thorax, and the clothing of the two last joints of the antennæ, mark it as a distinct species. In some, beneath, the colouring is exactly as in the preceding, whilst, in others, the pectus and venter are entirely brassy green, and only the anal apparatus and the antero-lateral and lateral margins of the pectus are red.

67. *PÆCILOCORIS INTERRUPTUS*, Westwood.

Tectocoris interrupta, Westwood, Hope, Cat. Hem. i, p. 14 (1837).

Scutellera interrupta, Germar, Zeitschr. i (i), p. 134 (1839): Herr. Schäff., Wanz. Ins. v, p. 73, t. 172, f. 531 (1839).

Pæcilocoris interruptus, Dallas, Trans. Ent. Soc. v, p. 102 (1848): List Hem. i, p. 12 (1851); Walker, Cat. Het. i. p. 8 (1867).

Pæcilochema interrupta, Stål, En. Hem. iii, p. 13 (1873).

Broadly ovate, rather flat; above brassy black, thickly and finely punctured: eyes pale brown, ocelli red: pronotum with the posterior margin and a curved longitudinal line on each side, within the lateral angles, bright [orange] red: scutellum with a narrow, transverse line on the disc near the middle, interrupted in the middle, and the apical margin, bright [orange] red: margins of hemelytra brassy black, of the abdomen black, variegated with bright red; abdomen beneath, black, shining, slightly brassy, the bases of 2-5 segments in the middle, and a marginal spot on the junction of each segment, red: anal apparatus, black, margined with red in the ♀: pectus brassy black, thickly and finely punctured: antennæ, rostrum and legs, black (*Dallas*). Dallas remarks that in a long series of this insect there is no indication of distinct spots, but it is probable that the anterior margin and two spots on the disc of the pronotum are black, and that the spots on the scutellum are arranged much as in *P. hardwickii*. Body long 15-19 mill.

Reported from Nepál, India. The Indian Museum has a specimen.

68. *PÆCILOCORIS PURPURASCENS*, Westwood.

Tectocoris purpurascens, Westwood, Hope, Cat. i, p. 14 (1837).

Scutellera purpurascens, Germar, Zeitschr. i. (i), p. 135 (1839).

Pæcilocoris purpurascens, Dallas, Trans. Ent. Soc. v, p. 103, t. 13, f. 5 (1848); List Hem. i, p. 13 (1851); Walker, Cat. Het. i. p. 8 (1867).

Pæcilochema purpurascens, Stål, En. Hem. iii, p. 13 (1873).

♂, ♀. Ovate; above variegated with violet and black, thickly and strongly punctured: head nearly smooth, shining, slightly wrinkled and punctured at the base and the apex; eyes and ocelli brown: pronotum with a small red spot in the middle of the anterior margin, a corresponding one on the posterior margin and a small streak of the same colour on each side towards the lateral angles: scutellum with a small transverse streak on each side before the middle, a smaller longitudinal one towards the apex and an oblique one on each side of this, on the lateral margins, bright red: margins of hemelytra violet-black: abdomen beneath slightly wrinkled, shining brassy-green, the margins violet with an irregular, transverse, red streak on each side of the 2-5 segments: anal apparatus brassy black: pectus violet and green, shining, finely punctured, with a dull black patch on the meso- and meta-stethium: legs violet-black: head beneath violet and green, shining, punctured: antennæ and rostrum, black (*Dallas*). Dallas observes that the normal arrangement of the spots (indicated by the strong violet tints on various parts of the surface) is the same as in *P. druræi*. Body long 17—19 mill.

Reported from Nepál, Sikkim.

69. *PÆCILOCORIS PULCHER*, Dallas.

Pæcilocoris pulcher, Dallas, Trans. Ent. Soc. v, p. 105, t. 13, f. 7 (1848): List Hem. i, p. 13 (1851): Vollenhoven, Faune Ent. l'Arch. Indo-Néer. i, p. 5, t. 1, f. 2, 2a, (1863); Walker, Cat. Het. i. p. 8 (1867).

Pæcilochema pulchra, Stål, En. Hem. iii, p. 13 (1873).

♂ Ovate, deep velvety purple, closely and finely punctured: head above of a vinaceous purple, below violet and green, shining, orange at the base, with four longitudinal impressions along the tylus and two oblique dotted hollows at the inner side of the eyes, blackish along the margins of the lobes: eyes brownish, ocelli small, reddish: 1-2 joints of antennæ violet, smooth, rest black, pubescent: pronotum broadly margined with red laterally and anteriorly, and with a narrow, median longitudinal line of the same colour, on the disc, reaching the posterior border: scutellum deep purple with the base (irregularly), a transverse band across the disc before the middle, and a narrow median line uniting these one to the other, also a small spot on each side of the latter (sometimes

wanting), shining violaceous : margins of the hemelytra brownish purple : abdomen with a strong furrow at the base, bright red, with a violet reflection, smooth, shining, very finely and moderately punctured ; a black spot around each of the stigmata and a faint band of the same colour across the terminal segment : anal plate red : pectus purple variegated with violet and greenish tints, shining, thickly and finely punctured, the antero-lateral margins and lateral angles, red : femora brassy purple ; tibiæ, shining violet ; tarsi black : rostrum brassy black, basal joint pale pinkish violet. Spots as in *P. druræi* except that the two subapical ones are wanting, others easily traced in the violet tints of the base, and the broad band across the middle of the scutellum. (*Dallas*). Body long 18-19 mill.

Reported from Malabar, Sumatra.

70. *PÆCILOCORIS CHILDRENI*, White.

Tectocoris childreni, White, Charlesworth Mag. N. H. iii, p. 542 (1839).

Tectocoris (Pæcilochroma) childreni, White, Trans. Ent. Soc. iii, p. 84, t. 7, f. 1 (1838).

Pæcilocoris childreni, Dallas, Trans. Ent. Soc. v, p. 106 (1848) ; List Hem. i, p. 13 (1851) : Walker, Cat. Het. i, p. 8 (1867).

Pæcilochroma childreni, Stål, iii, p. 13 (1873).

Head (including eyes, antennæ, and rostrum) black, distinctly margined ; ocelli yellow : thorax and scutellum yellowish-fulvous, the former in front black, the black colour extending in a narrow line along the slightly raised lateral margin, with four transverse black spots, the two dorsal ones larger and rather quadrate : legs green : scutellum obtuse, with eleven black spots, three at the base, the median one triangular and largest, two behind these sub-rotundate, four in the middle (the two inner largest) and two near the tip : hemelytra black, somewhat shining : body beneath, purplish black, sides of abdomen with four transverse yellow lines, sometimes confluent at the base and forming a yellow patch, end of abdomen green (*White*). Long, 18 ; breadth of pronotum, 11 mill.

Reported from Nepál, Sikkim.

The spots on the scutellum are placed,—three basal, of which the median one is large, triangular and produced on each side at the base, in such a manner that it appears as though in the normal state there would be an additional spot on each side, as in *P. druræi* ; two behind these, a row of four across the disc, rather behind the middle and two subapical. Distinguished from *P. druræi* by the broad, black anterior margin of the pronotum and the black anal plates : from *P. hardwickii* by the margins of all the segments of the abdomen being violet-black

and from both, by the presence of four spots on the disc of the pronotum and by the entire pectus being violet-black. It is possible that in the normal condition the disc of the abdomen may be yellow or orange margined with black (*Dallas*).

71. *PÆCILOCORIS OBESUS*, Dallas.

Pæcilocoris obesus, Dallas, List Hem. i, p. 13 (1851); Walker, Cat. Het. i, p. 9 (1867).

Pæcilochema obesa, Stål, En. Hem, iii, p. 13 (1873).

Convex, rather short: above bright red, shining, very finely and rather sparingly punctured, with the head, the fore-part of the thorax and three or more less distinct spots at the base of the scutellum, brassy green: thorax slightly excavated on the anterior margin, the impression strongly punctured and with a strong impression about the middle of each antero-lateral margin: body beneath, antennæ and legs bright brassy green; the antero-lateral margins of the pectus and a spot in the middle of the abdomen, red: rostrum black, reaching the middle of the third segment of the abdomen (*Dallas*). Body, long $13\frac{1}{2}$ - $14\frac{3}{4}$ mill.

Reported from Assam, N. India.

72. *PÆCILOCORIS RUFIGENIS*, Dallas.

Pæcilocoris rufigenis, Dallas, List Hem. i, p. 14 (1851); Walker, Cat. Het. i, p. 9 (1867).

Pæcilochema rufigenis, Stål, En. Hem, iii, p. 13 (1873).

Above orange-yellow with violet reflections, thickly and finely punctured: head purplish red with the base and the whole of the tylus black: thorax with the anterior and lateral margins violet and with a black spot within each anterior angle: scutellum with a narrow black band across the base and a black triangular spot on each side before the middle, touching the lateral margin, its base faintly wrinkled; basal angles strongly rugosely-punctate: margins of hemelytra, black: abdomen beneath and anal plate reddish orange tinted with violet, smooth, shining, very faintly punctured, the terminal segment violet-black, except its margins and a transverse streak of the same colour on each side of the rest of the segments, except the basal one: ventral furrow distinct, reaching apex of the fifth segment: breast shining violet, with the antero-lateral margins, red: legs brassy black: rostrum black, reaching the base of the terminal segment of the abdomen: head, beneath red; with the rostral canal violet-black: antennæ black (*Dallas*). Long, 19 mill.

Reported from Assam.

73. *PÆCILOCORIS ANISOSPILUS*, Walker.

Pæcilocoris anisospilus, Walker, Cat. Het. i, p. 9 (1867).

Black: head smooth, with a punctured furrow on each side between the eyes, and with another on each side in front: thorax bright red, with a black spot on each side on the disc and with a smooth black band along the anterior margin which is largely punctured: pectus with a lanceolate red streak along each side: scutellum bright red, with three bands of black marks: the first band of five spots of which the median is large and triangular reaching the fore border, the inner pair are small and isolated, the outer pair large and lateral and touching the anterior margin: of the second band of four black spots, the inner pair are large, the outer pair, small and lateral; the third band is composed of two black points: abdomen beneath red, black at the base and at the tip (*Walker*). Rather shorter than *P. dives*, Guérin; differs in the markings on the thorax and scutellum and the abdomen beneath has no black spots on each side. Possibly only a small variety of *P. ornatus*, Dallas. Long, 13 mill.

Reported from Cachar (Assam).

Genus TETRARTHIA, Dallas.

List Hem. i, p. 3, 20 (1851): Stål, Hem. Afric. i, p. 33 (1864); En. Hem. iii, p. 8, 13 (1873): Mayr, Reise Nov. Hem. p. 12 (1866): Walker, Cat. Het. i, p. 18 (1867).

Body elongate, sericeous: head rather long, convex, especially anteriorly, lateral margins somewhat acute before the middle and sinuated, no longitudinal impression near the eyes, tylus longer than the juga: rostrum long, reaching the posterior margin of the fourth ventral segment, first joint very short, second and fourth about equal in length, twice as long as the first, second joint compressed, third longest, about equal in length to the first and second taken together; antennæ 4-jointed, second joint about thrice longer than the basal joint which does not reach the apex of the head: posterior angles of thorax obtusely rounded, entire anterior margin of the propleura obtuse, elevated, posterior margin straight at the angles: scutellum rounded at the apex, covering nearly the whole of the hemelytra: venter with a long furrow, sides flattish, anteriorly somewhat convex, posterior margin of segments straight on both sides, the furrow of the orifices long, straight or very slightly curved, abruptly produced forwards at the apex or emitting forwards a wrinkle or ridge: pectus without a furrow for the reception of the rostrum or projecting flaps covering the base of the antennæ; legs moderate: tarsi 3-jointed, second joint shortest (*Dallas*).

74. TETRARTHIA LINEATA, Walker.

Tetrarthia lineata, Walker, Cat. Het. i, p. 18 (1867).

Ferruginous-red, fusiform, bright-red beneath: four stripes on the head and beneath on both sides, five stripes on thorax, of which the outer pair are oblique, its anterior and lateral margins, a dot on each side of the anterior margin of the scutellum and two oblique streaks which converge hindward and a broad stripe on each side of pectus, emerald-green: antennæ piceous, fourth joint pale yellowish towards the base: scutellum with a luteous dot on each side at two-thirds of the length: abdomen beneath with two rows of black spots on each side and with a black subapical patch: legs pubescent; tibiæ and tarsi above and femora towards their tips tinged with green: wings brown: costa of the corium purple. Var.? No emerald-green markings: head bluish-black: thorax bluish-black in front and on each side: scutellum with no luteous dot: pectus blackish (*Walker*). Long, $14\frac{3}{4}$ mill.

Reported from Hong-Kong; variety from Burma.

75. TETRARTHIA VARIEGATA, Dallas.

Tetrarthia variegata, Dallas, List Hem. i, p. 20, t. 1, f. 1 (1851); Stål, Ofvers. K. V.-A. Förh. p. 616 (1870); En. Hem. iii, p. 14 (1873).

Tetrarthia margine-punctata, Vollenhoven, Faune Ent. l'Arch. Indo-Néer. p. 13, t. 1, f. 6 a-b (1863); Walker, Cat. Het. iii, p. 508 (1868).

Tetrarthia quinquemaculata, A. Dohrn, Stettin Ent. Zeit. xxiv, p. 347 (1863).

Head black, with some scattered, coarse punctures, the lateral margins and two parallel longitudinal lines brassy-green; eyes pale brown; thorax with a large, semicircular brassy green patch on the disc, touching the posterior margin, and surrounded by a broad dull red band which runs from one posterior angle to the other; four spots on the disc, near the posterior margin, of which the two intermediate are largest, and the anterior and lateral margins black: scutellum brassy green in the middle, the margins dull red, punctured and thickly clothed with fine golden hairs, with a large black patch in the middle of the base, two small spots of the same colour immediately behind this, and two large ones on the lateral margins immediately behind the middle; a large T-shaped black patch occupies the disc of the scutellum, formed by a transverse band, before the middle, and a median longitudinal one which reaches nearly to the apex, and is furcate posteriorly: abdomen beneath red, with broad black margins: rostrum red: legs black with the basal half of the femora bright red: antennæ black with the basal joint reddish and a pale band near the base of the fourth joint (*Dallas*). Varies in having the scutellum and thorax rufous-testaceous: anal segment in ♂ truncate at apex; finely erosulous and in the middle with a somewhat prominent tooth. Long, $16\frac{3}{4}$ mill.

Walker remarked that *T. margine-punctata*, Voll. was probably only a variety of *T. variegata*, Dallas; and it is now recognized as such. The type of this variety has the borders of the body above and the entire body below covered with a grey villosity; head a little punctured, with a glossy chocolate-brown line in the middle; two longitudinal lines and the border of the eyes, golden-green; antennæ pale brown, pubescent; base of fourth joint whitish: eyes brown, ocelli yellow: pronotum punctured, with a row of deep dots on the anterior border, preceding a transverse glossy space which is of a chocolate-brown, the border being golden-green: disc of pronotum and scutellum purplish black with several obscure metallic-blue lines: border surrounded by a row of yellow triangular patches: body beneath yellow with some golden-green lines on the head and pectus: ventral borders marbled with brown; 5th and 6th segments altogether brown; rostrum pale yellow, with the tip obscure: coxæ and half of femora of a pale yellow, other half deep brown: tibiæ and tarsi, yellowish brown. Long, 15 mill. A Silhat specimen is paler and has the border of the scutellum interrupted at the tip.

Reported from Phillipines, Java, Tondano, Celebes, Silhat. The Indian Museum possesses specimens from Sibságar (Assam).

Genus SCUTELLERA, Lamarck.

Syst. p. 293 (1801): Dallas, List Hem. i, p. 4, 18 (1851): Walker, Cat. Het. i, p. 15 (1867): Stål, Hem. Afric. i, p. 33 (1864); En. Hem. iii, p. 9, 14 (1873): Mayr, Reise Nov. Hem, p. 17 (1866). Includes *Calliphara*, Am. & Serv. Hist. Nat. Ins. Hém. p. 30 (1843), nec Germar.

Body subsericeous or pilosulous, very oblong: head triangular, obtuse, sloped: rostrum extending beyond the second ventral segment: antennæ 5-jointed, second joint not or only a little shorter than the first, fourth the longest: pronotum with a transverse linear impression before the middle, generally strongly punctured, the base distinctly truncated, posterior angles distinct, posterior margin of propleura generally distinctly sinuated at the angles, anterior margin obtuse, thickened, slightly amplified near the prosternum: the meso-sternum furrowed: venter furrowed beyond the middle; the furrow of the orifices very long, gradually curved forwards towards the apex, the part of the metapleura situate before the furrow, smooth, shining: feet rather long.

76. SCUTELLERA NOBILIS, Fabricius.

Cimex nobilis, Fabr. (nec Linn.), Syst. Ent. p. 697 (1775); Spec. Ins. ii, p. 338 (1781); Mant. Ins. ii, p. 280 (1787); Ent. Syst. iv, p. 80 (1794): Gmelin, ed. Syst. Nat. i (4) p. 2128 (1788); Panzer in Voet, Col. iv, p. iii, t. 47, f. 1 (1798); Wolff, Ic. Cim. ii, p. 49, t. 5, f. 46 a-d, (1801): Stoll, Punaies, p. 8, t. 1, f. 1; p. 13, t. 2, f. 7, and p. 20, t. 4, f. 22, 23 (1788).

Tetyra nobilis, Fabr., Syst. Rhyng. p. 129 (1803).

Tectocoris nobilis, Hahn, Wanz. Ins. iii, p. 24, t. 81, f. 247 (1835).

Tectocoris perplexa, Westwood, Hope, Cat. Hem. 1, p. 4 and 15 (1837).

Calliphara nobilis, Germar, Zeitschr. i, (i) p. 124 (1839): Am. & Serv. Hist. Nat. Ins. Hém. p. 30 (1843).

Scutellera nobilis, Lam. Hist. Nat. iii, p. 491 (1816): Burm. Handb. ii, (i) p. 395 (1835); Blanchard, Hist. Nat. Ins. iii, p. 158, Hém. t. 8, f. 3 (1840); Dallas, List Hem. i, p. 18 (1851); Walker, Cat. Het. i, p. 15 (1867); Vollenhoven, Faune Ent. l'Arch. Indo-Néer. p. 11 (1863); Stål, En. Hem. iii, p. 14 (1873); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Oblong; cærulean-golden, spotted black: beneath rufous, with lateral bands shining blue and gold (*C. nobilis*, Fabr.).

Light metallic green, varying to deep blue or even purple: body above and beneath and legs covered with a fine greyish pubescence more abundant on the head and anterior part of pronotum, abdomen and legs: eyes brown, ocelli red: rostrum reddish or brown: first joint of antennæ reddish brown, rest black: pronotum with a deep transverse groove anteriorly, a row of excavated points on anterior margin, lateral margins reddish brown, three irregular spots towards anterior margin, a median longitudinal line, a spot on each side thereof and on the humeral angles, black: scutellum with a median longitudinal line reaching to about the middle and three spots on each side thereof, black, a smaller sublateral spot on each side between the second and third pairs, sometimes also a sublateral spot between the first and second pairs, and sometimes all or some are more or less obsolete: body beneath red with a purplish tint; head beneath, patches on pectus, and oblique transverse bands on abdominal segments, interrupted in the middle and not reaching the margins, golden blue or green: coxæ and femora red, tips of femora, tibiæ and tarsi deep metallic violet. Varies much in size from 14 to 21 mill.

Var.:—Head green with three black spots: first joint of the antennæ black not red: lateral margins of pronotum without a red limbus, first third green, rest blue with traces of five black spots; scutellum blue with ten black spots: abdomen beneath golden green, shining, with a large orange yellow patch on the disc, margin orange, crenulated black: anal plate green (*Voll.*).

Reported from Bengal, Pondicheri, Assam (Silhat, Cachar), Burma, Panjab, India, Siam. The Indian Museum possesses specimens from N. India, S. India, Karachi, Sikkim, Assam, and Calcutta.

77. SCUTELLERA FASCIATA, Panzer.

Cimex fasciatus, Panzer, in Voet, Col. iv, p. 108, t. 46, f. 2 (1798): Stoll, Punaíses, p. 138, t. 36, f. 251; var. p. 34; t. 7, f. 49 (1788).

Tectocoris nepalensis, Westwood, Hope, Cat. Hem. 1. p. 14 (1837).

Calliphara nepalensis, Germar, Zeitschr. i (i) p. 125 (1839).

Calliphara amethystina, Germar, Zeitschr. i (i) p. 124 (1839).

Scutellera amethystina, Vollenhoven, Faune Ent. l'Arch. Indo-Néer. i, p. 12 (1863); Walker, Cat. Het. iii, p. 507 (1868).

Callidea lanius, Stål, Ofvers. K. V.-A. Förh. p. 231 (1854).

Scutellera lanius, Stål, l. c. p. 51 (1856); Walker, l. c. i, p. 15 (1867).

Scutellera fasciata, Dallas, List Hem. i, p. 19 (1851); Walker, l. c. i, p. 15 (1867); Stål, En. Hem. iii, p. 14 (1873).

Body fusiform; pilose on the head; first third of pronotum, body beneath and feet, purple: head wrinkled only on the margins, beneath and two first joints of the antennæ, violet: eyes brown, ocelli red: rostrum, half red, rest black: pronotum deeply grooved and with a row of excavations on the anterior margin, lateral margins greenish or golden; two spots at the anterior angles and four near the base brown or blackish: scutellum with three bands, often interrupted (especially the first), and two small lateral and one large median spot of the same colour, all of them are sometimes more or less obsolete: body beneath red, pectus with several violet spots, venter with two rows of oblique spots, alternately violet and golden: stigmata black: coxæ and femora red: tips of femora, tibiæ and tarsi, deep violet. (*S. amethystina*, Voll.). Body long 18-20 mill.

Westwood describes his *T. nepalensis* as cærulean-green, clypeus golden, head with a median line and two oblique spots between the eyes, black; sides of thorax golden-yellow; dorsum with three interrupted longitudinal lateral lines; scutellum with two round spots at the base, a broad waved band before the middle, two round lateral spots and two others much larger and confluent beyond the middle, and the apex, black. Long 19 mill. Stål makes his *S. lanius* from Java a variety marked by its greater size, more robust, subsanguineous above, slightly shining violaceous, spots unicolorous without the violaceous tinge. Long, 22; broad 9 mill.

Reported from Java, Borneo, Malacca, China, Burma, Assam, Nepál, Sikkim.

Genus BRACHYAULAX, Stål.

Ofvers. K. V.-A. Förh. p. 616 (1870); En. Hem. iii, p. 9, 14 (1873).

Body very oblong, above slightly, beneath very convex, briefly pilose, shining: head triangular, somewhat convex, sides very convex before the eyes, lateral margins sinuate towards the base, rounded towards the apex; bucculæ continuing through it, slightly elevated: ocelli twice more distant from each other than from the eyes: rostrum extending to somewhat behind the last coxæ: antennæ shorter by half

than the body, first and second joints short, the latter extending to the apex of the head and a little shorter than the first, third somewhat longer than the two basal together, fourth and fifth longer than the rest, fourth especially compressed, dilated: thorax sexangular, anteriorly truncated, distinctly transversely impressed before the middle, anterior lateral margins, obtusely sinuated, obtuse: scutellum covering the entire abdomen: prostethium triangularly impressed, margins of impression elevated, subdilated: mesostethium obtusely sulcate: odoriferous apertures continued outwards in an elongated furrow, slightly curved and abruptly abbreviated: sides of venter very convex, incisures gradually curved second segment broadly sulcate in the middle: feet moderate, tibiæ distinctly sulcate above. Differs from *Scutellera*, Lam. in having the furrow of the odoriferous apertures shorter, less curved, and the venter furrowed only at the base (*Stål*).

78. BRACHYLAULAX OBLONGA, Westwood.

Tectocoris oblonga, Westwood, Hope, Cat. i, p. 14 (1837).

Calliphara oblonga, Germar, Zeitschr. i (i) p. 129 (1839).

Scutellera oblonga, Dallas, List Hem. i, p. 19 (1851); Walker, Cat. Het. i, p. 15 (1867).

Brachyaulax oblonga, Stål, En. Hem. iii, p. 14 (1873); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Ovate-oblong, metallic bluish-green; head with three spots between the eyes; thorax with six, three by three, the posterior larger; scutellum with three small basal, two larger rounded, two lateral small, two behind the middle, rounded, large, and one sub-apical spot, or ten in all: body beneath cærulean-green, base of the abdomen in the middle and the sides irregularly fulvous; antennæ black, feet green (*Westw.*). Body long, $13\frac{1}{4}$ mill.

Reported from Java, Assam, China. The Indian Museum has a specimen from Assam which differs from the type in having the large median spots on the scutellum confluent, forming two waved transverse bands (*Dist.*) and in some these are connected by a median, longitudinal arrow-shaped mark.

Genus CALLIPHARA, Germar.

Calliphara, pt, Germar, Zeitschr. i (i) p. 122 (1839): Stål, En. Hem. iii, p. 9, 16 (1873). Includes *Calliphara*, Stål, Hem. Afric. i, p. 34 (1864) and *Lamprophara*, l. c. p. 34 (1864).

Stål distributes the species belonging to this genus amongst the subgenera *Lamprophara*, *Calliphara* and *Chrysophara* to none of which does he assign the only species recorded from India. The third joint of the antennæ is over twice as long as the second: rostrum reaching

at least the middle of the second ventral segment: the ventral segments (at least the last and the penultimate) furnished at the apical angles with a small tooth or spine which is sometimes covered by the hemelytra and then with difficulty distinguished: the scutellum does not cover the exterior margin of the connexivum (*Stål*).

79. CALLIPHARA OBSCURA, Westwood.

Tectocoris obscura, Westwood, Hope, Cat. i, p. 14 (1837).

Calliphara obscura, Stål, En. Hem. iii, p. 18 (1873).

Head and pronotum black-cœrulean; the latter with three posterior spots; scutellum green, with seven spots (two, two subconfluent, two rounded beyond the middle, and one small, subapical); body beneath, black-cœrulean, venter green, with black lateral spots; femora luteous at the base. Body, long $17\frac{3}{4}$ millims.

Reported from Nepál. Stål inquires 'an potius Insulæ Philippinæ.'

80. CALLIPHARA NOBILIS, Linnæus.

Cimex nobilis, Linn., Cent. Ins. i, p. 17 (1763); Amæn. Ac. vi, p. 400 (1763).

Cimex pustulatus, Panzer in Voet, Coll. iv, p. 111, t. 47, f. 11 (1798).

Scutellera Buquetii, Guérin, Voy. Coq. Ins. ii (2), p. 159, 162 (1830).

Callidea nobilis, Dallas, List Hem. i, p. 25 (1851); Walker, Cat. Het. i, p. 32 (1867).

Calliphara buquetii, Stål, Berlin Ent. Zeitschr. x, p. 153 (1866); Ofvers. K V.-A, Förh. p. 618 (1870).

Calliphara nobilis, Stål, En. Hem. iii, p. 17 (1873).

Above light green, shining, in some specimens with violet reflections: head rather small, triangular; eyes brown very prominent; in the middle, a small smooth green elevation, a little dilated hindward and bounded by two small grooves: antennæ in ♂, nearly half the length of the head, in ♀ a little shorter, black, with the joints flattened: thorax almost straight or only a little emarginate on the sides, punctured; on each side in front an impression, black at the bottom, placed obliquely, and four small round black spots, a little beyond the middle; in some specimens there is an oblong red spot between the two anterior impressions, in others there are only two spots on the sides: scutellum slightly grooved at the base, much punctured, with a longitudinal line in the middle having no punctures and feebly marked; three small, round, black spots on each side, and a smaller in the middle and near the tip: thorax beneath, red, with large green spots, confluent on the sides; margin red, partly visible above: abdomen vermillion, sides broadly bordered green and on their external margin are four large black dots, and inwards four black patches less well defined, the extreme external margin is red: rostrum black, red at the base: femora red,

tips partly green; tibiæ and tarsi deep green (*S. buquetii*, Guérin). Long, 16—17; broad, 8—8½ mill. at base of scutellum.

Reported from Philippines, Java, Timor, China, Burma.

Genus CHRYSOCORIS, Hahn.

Wanz. Ins. ii, p. 38 (1834); White, Trans. Ent. Soc. iii, p. 85 (1841-43); Stål, Hem. Afric. i, p. 34 (1864); En. Hem. iii, p. 9, 18 (1873).

Includes *Callidea*, Am. & Serv. (nec Burm.), Hist. Nat. Ins. Hém. p. 31 (1843); pt. Dallas, List Hem. i, p. 22 (1850); Walker, Cat. Het. i, p. 25 (1867):—*Eucorysses*, Am. & Serv., l. c. p. 31 (1843); Stål, Hem. Afric. i, p. 34 (1864); Mayr, Reise Nov. Hem. p. 18 (1866):—*Galostha*, Am. & Serv., l. c. p. 32 (1843):—*Cosmocoris*, Stål, Hem. Afric. i, p. 34 (1864); Mayr, Reise Nov. Hem. p. 18 (1866).

Stål distributes the species belonging to this genus amongst the subgenera *Eucorysses*, *Cosmocoris*, and *Chrysocoris*, all of which are represented in India. Differs from *Calliphara* in having the scutellum covering the whole connexivum, except the basal part. Body above glabrous: the third joint of the antennæ at least twice as long as the second: the three last joints of the rostrum unequal in length: lateral margins of the head neither carinated nor reflexed, anterior margin of the prostethium not callous behind the eyes, obtuse: meso-sternum, at least anteriorly, somewhat sulcated, the furrow generally slightly carinated on both sides: posterior margin of the propleura distinctly sinuated at the posterior angles: the ventral segments, at least the last or the penultimate, furnished at the apical angles with a small tooth, often covered by the hemelytra and then difficult to distinguish.

Subg. EUCORYSSES, Am. & Serv.

Head somewhat large, not much inclined, sides not deeply sinuated: anterior lateral margins of pronotum straight or somewhat so: basal part of the scutellum not, or but very obsoletely, elevated: entire tibiæ above furrowed: sixth ventral segment in ♀, as far as known, obtusely or very obtusely angulately prominulous in the middle of the apex.

81. CHRYSOCORIS GRANDIS, Thunberg, Stål.

Eucorysses grandis, Stål, Berlin Ent. Zeitschr. x, p. 154 (1866).

Chrysocoris (*Eucorysses*) *grandis*, Stål, En. Hem. iii, p. 18, (1873): Scott, A. M. N. H. (4 s.) xiv, p. 289 (1874): Distant, l. c. (5 s.) iii, p. 44 (1879); J. A. S. Ben. xlviii, (2) p. 37, (1879).

Var. *a*:—*Cimex grandis*, Thunberg, Nov. Ins. Spec. p. 31, t. 2, f. 46 (1783): Gmelin, ed. Syst. Nat. i (4), p. 2133 (1788).

Calliphara grandis, Germar, Zeitschr. i (1), p. 128 (1839).

Callidea grandis, Dallas, List Hem. i, p. 23 (1851): Vollenhoven, Faune Ent. l'Arch. Indo-Néerl. p. 18 (1863): Walker, Cat. Het. i, p. 32 (1867).

Eucorysses superbus, Uhler, Proc. Ac. Nat. Sci. Phil. p. 221 (1860).

Callidea distinguenda, Uhler, l. c. p. 286 (1861).

Var. *b*.:—*Cimex baro*, Fabr., Ent. Syst. Suppt. p. 528 (1798).

Tetyra baro, Fabr., Syst. Rhyng. p. 129 (1803); Schiödte in Kröyer's Nat. Tidsskr. iv, p. 279 (1842).

Calliphara baro, Germar, Zeitschr. i (1) p. 127 (1839).

Callidea baro, Dallas, List Hem. i, p. 22 (1851); Walker, Cat. Het. i, p. 26 (1867).

Tetrarthia tetraspila, Walker, l. c. i, p. 19 (1867).

Var. *c*.:—*Eucorysses pallens*, Am. & Serv. Hist. Nat. Ins. Hém. p. 31, t. 1, f. 4 (1843).

Callidea baro, Vollenhoven, l. c. p. 17 (1863).

Head and spots on pectus at the coxæ, flavescent, the head sometimes shining purplish, median streak and basal intraocular part, black: rostrum reaching the middle of the third ventral segment.

Var. *a*. Large, elongate, tumid, glossy, violet beneath, sanguineous above with black spots: head blue with the median line and antennæ black: pronotum sanguineous, much swollen, the anterior margin fringed with violet, at the base, black: a dot on each side behind the anterior angle and a large spot on the disc, black: scutellum sanguineous, the black of the pronotum appears to extend over the base; five black spots on the scutellum one rounded on the median line near the base, two others costal appearing like a band interrupted in the middle, another forms a band abbreviated on two sides and the fifth is near the anal margin: a sanguineous spot sometimes occurs in the middle of the venter: feet black (*Cimex grandis*, Thunb.). Body long, 25 mill.

Var. *a*. ♀, sec. Stål:—Black, thorax, scutellum, spots on pectus at coxæ and transverse median spot on 4—5 ventral segments, yellow-testaceous: margins of thorax and of scutellum shining-violaceous: entire narrow margin, discoidal spot and lateral angles of thorax, basal limbus, spot near base, lateral transverse spot on both sides before middle, abbreviated band behind middle and obsolete subapical spot on scutellum, black: spot on basal angles of ventral segments, yellow-testaceous, much tinted violaceous.

Var. *b*.:—Body large: head pale; antennæ, median line and margin black-cyaneous: thorax pale, shining, with a large ovate spot reaching anterior margin, cyaneous: scutellum large, smooth, pale, shining, with three cyaneous-black spots, the median one cordate: pectus cyaneous: abdomen pale with cyaneous bands: feet cyaneous (*Cimex baro*, Fabr.) Stål describes this variety as flavescent or yellow-testaceous: antennæ, rostrum, anterior spot on thorax, basal limbus and three spots before middle of scutellum, pectus, lateral posterior band on segments, basal streak and apical spot on venter and the feet, black: six spots on the pectus, three at the coxæ and three at the lateral margins, flavescent.

Var. *c.*:—♂. Pale yellowish, shining above: head with a median longitudinal line and its posterior part, shining black: lateral margins of the pronotum slightly sinuate in the middle, a patch of shining black rounded hindwards, touching the anterior margin: two oblong, black, transverse patches on the disc of the scutellum, its base having on each side a similar black spot: body beneath shining black-bluish with transverse lateral bands of a pale shining yellow which unite on the two penultimate ventral segments: anal plate pale shining yellow, feet black metallic-bluish: antennæ black (*E. pallens*, Am. & Serv.). Long, 25 mill.

All these varieties occur in India and are represented in the Indian museum collection. Reported from Japan, China, Siam, Assam, (Silhat), Bengal, Tenasserim, Java.

82. CHRYSOCORIS IRIS, Germar.

Calliphara iris, Germar, Zeitschr. i (i), p. 128 (1839): Herr. Schöff., Wanz. Ins. V, p. 80, t. 171, f. 526 (1839). Bintam.

Callidea sexmaculata, Dallas (nec Leach), List Hem. i, p. 23 (1851); Vollen., Faune Ent. l'Arch. Indo-Néerl., p. 18, t. 1, f. 7 (1863): Walker, Cat. Het. i, p. 31 (1867). Java.

Chrysocoris (Eucorysses) iris, Stål, En. Hem. iii, p. 19 (1873).

Purpurascient, shining violaceous: antennæ and feet black, three spots on thorax also its posterior margin, and six spots on scutellum, black (*Germar*). Schäffer observes that in the example figured by him the ground colour appears to be brown, lighter posteriorly; head, thorax and base of scutellum of a rich violet with rosy red, turning to green on the sides of the thorax and scutellum: feet and antennæ darker. His figure shows anterior and posterior margins of thorax black, a median longitudinal streak proceeding from the anterior margin and posteriorly behind the middle confluent with a short transverse, streak, black: four spots on scutellum joining an arcuate interrupted transverse band before the middle, and two larger oblong transverse spots behind the middle. Long, 24 mill. It is like *C. sexmaculatus*, Leach, but differs in its smaller size, body (especially the head) purpurascient-flavescent, smooth head and shorter rostrum which somewhat reaches the apex of the third ventral segment.

Body above purple with silvery blue reflections: head transversely wrinkled at the apex, vertex of a bronzed blackish green; eyes brown, ocelli brown-yellowish: beneath, the sheath of the rostrum of a metallic green, labrum yellow: antennæ black, second joint one-sixth of the following: thorax punctured, most strongly in the middle of the anterior margin which is of a bronzed green and on the disc, the space between these two is smooth; a cordiform spot on the disc, an abbreviated

band along the posterior border and two small spots at the lateral angles, black, these angles slightly, acuminate: scutellum punctured, more strongly at the anterior angle, basal elevation smooth: two bronzed-black spots behind the basal elevation, a black spot at each anterior angle, another pair much larger, almost quadrate behind these near the lateral margin, and a transverse band interrupted in the middle, black; hemelytra black, with the costal margin purple; pectus varied with green, black and red: venter red with purple margins; a large basal spot, a smaller anal spot, an oblique stria on the sides, shining black: feet metallic black, pubescent (*C. sexmaculata*, Voll.). Body long, 24 mill.

Reported from Java, Bintam, Singapore, Tenasserim.

Subg. COSMOCORIS, Stål.

Head somewhat large, not much inclined: pronotum with the anterior lateral margins more or less distinctly sinuated in the middle, furnished in the ♂ anteriorly with a rather deep triangular impression, scutellum transversely elevated at the base: tibiæ above towards the apex somewhat flat or furrowed.

83. CHRYSOCORIS COXALIS, Stål.

Callidea coxalis, Stål, A. S. E. F. (4 s.) iv, p. 47 (1864): Walker, Cat. Het. i, p. 28 (1867). Tringany.

C. (Cosmocoris) coxalis, Stål, En. Hem. iii, p. 19 (1873).

♀ Brassy-green, shining, feet more obscure, of the colour of steel: antennæ and rostrum black; a small spot towards the ocelli and a median stripe on the head, five spots on the pronotum and eight on the scutellum, subviolaceous-black; disc brassy-black varying in breadth: coxæ, trochanters and base of femora sordid yellow-whitish. Head moderate, distinctly sinuate before the eyes: second joint of antennæ one-third shorter than basal, the fourth (in ♂ at least) dilated, furrowed; pronotum sparingly and finely punctured, disc before the middle a little more distinctly punctured; antero-lateral margins very slightly sinuate, narrowly and distinctly reflexed, with two anterior transverse spots, one orbicular on each side at the lateral angles, and three large median elongate reaching the base, the median one in the form of a continued stripe, the other two extended forwards beyond the middle of the pronotum: scutellum as broad as the abdomen, not so densely punctured, slightly transversely elevated at the base, there smooth, with eight spots, the subbasal median one formed like the letter T, the rest, transverse, large: sixth ventral segment in ♀, posteriorly obtusely sinuate (Stål). Long, 13-15; breadth of pronotum, 7-8 mill.

Reported from Singapore, Tringani, Tenasserim (?).

Subg. CHRYSOCORIS, Hahn.

Head somewhat small, bending much forwards, sides generally strongly sinuated: thorax in ♂ without an anterior triangular impression: basal part of the scutellum not or only slightly elevated: tibiæ above towards the apex flat or furrowed. Stål still further divides this subgenus into the sections *Chlorolampira* including *C. germari*, Esch.; *Chlorochrysa*, including *C. stockerus*, Linn. and *Chrysocoris* including *C. dilaticollis*, Germar.

As the species of this subgenus are not readily distinguishable I adopt the following scheme partly from Stål (Hem. Fabr. i, p. 11) as some help to identification:—

1-2. Venter without any flavescent spot or mark.—*C. atriventris*, mihi.

2-1. Venter with disc, at least, flavescent.

3-17. Lateral margins of pronotum straight or nearly so.

4-16. Pronotum posteriorly with a single black spot in the middle, sometimes wanting, the antero-lateral margins entirely or nearly entirely reflexed.

5-9. Disc of venter flavescent, with four long rays occupying the apical part of the segments, terminated anteriorly inwards by a black transverse spot that reaches the base of the segments and is remote from the black-irised spiracula.

6-8. Ventral limbus cœrulean or brassy-green: posterior margin of pro- and meso-stethium concolorous: femora flavescent beyond the middle.

7-8. Pronotum with ten black or black-cœrulean spots.—*C. elatus*, Stål.

8-6. Ventral limbus, rufescent or purplish, rarely flavescent and purple: posterior margin of parts of pectus, flavescent: femora beyond the middle, minaceous.—*C. patricius*, Fabr.

9-5. Almost entire venter or a very great part of the disc flavescent, with on both sides short rays that occupy the base and the apex of the segments and are not terminated by a transverse black spot: scutellum typically with the apex black or obscurely violaceous, no sub-apical rounded spot.

10-8. Posterior black spots on the pronotum remote from the base, rather small; ventral limbus brassy-green, or cœrulean, or purplish-violaceous.

11-12. Pronotum with 5 or 7 black spots, that on the lateral angles very small or wanting: femora beyond the middle, flavescent.—*C. purpureus*, Westw. *C. viridis*, mihi.

12-11. Pronotum with 7 or 8 black spots, the anterior median one

sometimes wanting, 3 large median posterior spots, reaching the base.—*C. stolii*, Wolff.

13-12. Spots larger and broader, colour more purplish above.—*C. porphyricolus*, Walk.

14-12. Pectus without flavescent spots and lines.—*C. ornatus*, Dallas.

15-12. Scutellum broadly orange at the apex.—*C. andamanensis*, mihi.

16-4. Pronotum with 11 black spots and posteriorly in the middle with 2 oblong spots, antero-lateral margins somewhat acute posteriorly, and a little reflexed.—*C. marginellus*, Westw.; *C. pulchellus*, Westw.

17-3. Lateral margins of anterior part of the thorax, depressed, flat, rounded.—*C. eques*, Fabr.; *C. dilaticollis*, Guérin.

84. CHRYSOCORIS ATRIVENTRIS, Atkinson.

Proc. A. S. B. p. 11, (1887).

Closely allied to *C. hypomelæna*, Voll. from Borneo, differs in the markings on the thorax and in the entire venter being almost wholly deep black. Brassy-green, irrorated golden, shining, closely punctured: head beneath and feet lighter brassy-green, very shining: venter deep black, smooth, slightly shining. Head much inclined, obtusely triangular, rounded at the apex; except the tylus, irrorated golden: eyes, ocelli, antennæ and rostrum, black; 3-5 joints of antennæ somewhat flattened; rostrum reaching almost the apex of the second ventral segment, extremity of tip brownish: thorax with three black spots towards the anterior margin, the lateral subovate-oblong, transverse, impressed, smoothish, the median irregularly triangular, smallest; towards the posterior margin three larger spots, of which the lateral oblong, longitudinal, and the median obtusely triangular, smallest; lateral margins reflexed, a very small black spot on the slightly prominulous posterior angles: scutellum with the basal elevation smooth, shining, and with seven black spots; on each side three lateral, of which the two first are ovate-oblong, transverse, and the third is somewhat rounded posteriorly, also one subbasal median, obtusely-triangular, having its apex pointing hindwards. Head beneath and pectus very bright, shining, brassy-green; antennæ black: entire venter intensely black, smooth, slightly shining; barely traces, under the microscope in the sun, of a slightly purplish limbus and a slightly brassy-green margin to the stigmata: feet blackish, femora tinted brassy-green towards the apex; tibiæ finely ciliated, externally of a blue-steel colour. Long 14; breadth of pronotum, 8 mill.

Example from Delhi.

85. CHRYSOCORIS ELATUS, Stål.

Callidea Stockerus, Germar, Zeitschr. i (i) p. 114 (1839), excl. syn.

Chrysocoris elatus, Stål, Hem. Fabr. i, p. 11 (1868); En. Hem. iii, p. 20 (1873).

Thorax with ten bluish-black or black spots: discoidal spot on scutellum narrow, linear or somewhat so; disc of venter flavescent with four long rays, occupying the apex of the segments and terminated anteriorly inwards by a black transverse spot that reaches the base and apex of the segments, remote from the black-cinctured spiraculan, ventral limbus cœrulean or brassy-black; posterior margin of pro- and meta-stethium concolorous; femora flavescent beyond the middle.

Reported from India.

86. CHRYSOCORIS, Fabricius.

Cimex patricius, Fabr., Ent. Syst. Suppt. p. 527 (1798); Stoll, Punaies, p. 125, t. 32, f. 222A (1788).

Tetyra patricia, Fabr., Syst. Rhyng. p. 131 (1803); Schiödte in Kröyer's Nat. Tidsskr. iv, p. 286 (1842).

Scutellera patricius, Guérin, Voy. La Coquille, Ins. p. 159 (1830).

Callidea bengalensis, Westwood, Hope, Cat. Hem. i, p. 15 (1837); Germar, Zeitschr. i (i), p. 118, (1839); Dallas, List Hem. i, p. 28 (1851); Walker, Cat. Het. i, p. 27 (1867).

Callidea basilica, Germar, Zeitschr. i (i), p. 117 (1839); Walker, l. c. i, p. 28 (1867).

Callidea patricia, Germar, l. c. p. 121 (1839); Walker, l. c. i, p. 28 (1867).

C. (Chrysocoris) patricius, Stål, Hem. Fabr. i, p. 11 (1868); En. Hem. iii, p. 20 (1873).

Oblong, one-third the size of *S. nobilis*: head, thorax and scutellum cœrulean blue: head shining, with a dorsal line and a spot on each side at the base, black: thorax with a dorsal line and four spots on each side, black: scutellum large, with nine spots arranged 3, 3, 2, 1, black: body flavescent, marginal bands cœrulean, and the margin of the abdomen, red: feet black, femora rufous (*Fabr.*). Dark greenish-blue; pronotum with seven spots, scutellum with eight large black spots; femora rufous, apex and tibiæ green; trochanters whitish; abdomen palely luteous, margin purplish-rufous, with oblong, transverse, greenish-black spots (*C. bengalensis*, West.), a somewhat ovate median oblong spot, with a longitudinal row of three rounded spots on both sides and a rounded spot before apex black. Pectus shining, sparingly punctured, brassy-green or cyaneous, six spots at the insertion of the feet and anterior and posterior margins of meso- and meta-sternum, yellow; posterior margin of pro-sternum, yellow, lateral margin and posterior angles, red: lobes of anterior margin very short, truncate, externally angulate. Hemelytra black-cœrulean, internally fuscous

their exterior margin yellow towards the base; membrane and wings fuscous-black. Feet pubescent; coxæ, trochanters and femora, red, the femora cyaneous at apex, tibiæ with a small groove before apex, cyaneous; tarsi-black: venter moderately convex with the sides punctured, shining, yellow, margin above the black stigmata red or luteous, a large quadrate spot occupying the middle of the three anterior segments and another rounded on penultimate segment, black or fuscous; 2-5 segments with a brassy-green spot on each side: anal segment horizontal, ænescent, thrice broader than length, deeply transverse-ly impressed, the apex broadly emarginate.

♀. The ♀ has the antennæ more slender, shorter than head and pronotum, two basal joints longer than the eyes, 3-5 joints with small obsolete grooves: sides of pronotum more narrowly margined before the eyes, margin not dilated in the middle: anal segment of venter deep red (*Schiödt*). Long, $7\frac{1}{2}$ -8 mill., humeral breadth, $4\frac{3}{4}$ mill.

The discoidal spot in the scutellum is broader than in *C. elatus*, Stål, gradually amplified forwards before the middle: genitalia in ♂ more reflexed behind the middle than usual: subapical rounded spot in the scutellum black.

Reported from Bengal, Tranquebar: the Indian museum has specimens from Calcutta and Ceylon.

♂. Antennæ a little longer than the head and pronotum together, stoutish; two basal joints much shorter than the head, scarcely as long as the eyes, either black, or fuscous, or rufescent; second joint very short, one-fourth the length of the basal; remaining joints black, pubescent, almost of the same length, depressed, with a small groove on the upperside; third thrice as long as the basal, fourth and fifth with a deep groove on the lower side. Head deflexed much shorter than broad, obtusely three-angled, and a little convex, smooth, shining, cœrulean greenish or cyanean; clypeus obscurely cyaneous, at the extreme apex ruddy; eyes of moderate size, prominent; clypeus linear, obtusely prominulous at apex; margins of the rostral groove, narrowly elevated: rostrum reaching the base of the abdomen subcylindrical, piceous, rufescent at base, second joint a little longer than the rest. Pronotum broader than long, convex at the base, as high as the scutellum, more sparingly punctured, denser towards the somewhat elevated humeri, anteriorly convexly sloped, smooth, within the apex depressed and rather densely punctured; entirely brassy-green or shining cyaneous, sometimes purpurascens at the sides, with three longitudinal rows of black spots of which the median row is composed of two large quadrate spots and the lateral rows of three smaller, rounded spots: the humeral protuberances are also black and the lateral margins

before the obtuse-angled, rounded humeri somewhat straight. Scutellum ovate almost twice as long as the pronotum, almost one-half longer than basal breadth, shorter than abdomen, moderately convex, basal semilunar elevation rather high, flatly inclined at the sides, posteriorly convexly sloped, somewhat depressed and truncate at the extreme apex; densely punctured, basal callus smooth, shining cœrulean or cyaneous, sides and apex more or less purple.

87. CHRYSOCORIS PURPUREUS, Westwood.

Cimex stockerus, Fabricius, (nec Linn.) Syst. Ent. p. 696 (1775); Spec. Ins. ii, p. 338 (1781); Mant. Ins. ii, p. 280 (1787); Ent. Syst. iv, p. 79 (1794); Wolff, Ic. Cim. ii, p. 47, t. 5, f. 44 (1801); Stoll, Punaies, p. 17, f. 15, 16A. (1788).

Tetyra stockerus, Fabr., Syst. Rhyng. p. 131 (1803).

Scutellera stockerus, Latr., Gen. Ins. iii, p. 131 (1807).

Callidea stockerus, Burm., Handb. ii (i) p. 394 (1835): Westwood in Donovan's Ins. China, p. 48, t. 21, f. 1 (1842).

Callidea purpurea, Westwood, Hope, Cat. Hem. i, p. 15 (1837): Germar, Zeitschr. i (i) p. 115 (1839); Dallas, List Hem. i, p. 26 (1851); Vollenhoven, Faune Ent. l'Arch. Indo-Néer. i, p. 31 (1863); Walker, Cat. Het. i, p. 26 (1867).

C. (Chrysocoris) purpureus, Stål, Hem. Fabr. i, p. 10, 11 (1868); En. Hem. iii, p. 21 (1873); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Cærulean-purple: pronotum with 5 and scutellum with 6-7 spots, antennæ and tarsi, black; body beneath, luteous, margined purple and with purple stigmata; anus golden; femora luteous with apex and tibiæ purple; tarsi black (*C. purpureus*, Westw.) Stål notes that in his examples the pronotum has only two spots anteriorly and the discoidal spot on the scutellum is smallish and oblong. Vollenhoven gives the colour above as deep blue, head slightly tumid, and transversely wrinkled, eyes blackish, ocelli yellowish-brown; antennæ black, first joint blue, orange at the base, second joint one-fourth the length of the third in the ♀: basal half of the rostrum yellow, rest brown, reaching second ventral segment: pronotum rather elevated, without a transverse groove, strongly punctured, with five (2 and 3) black spots: scutellum strongly punctured (except at the basal elevation which is almost smooth,) with six black spots arranged in two rows and a median triangular spot which is sometimes obsolete and is replaced by a green reflection: body beneath yellow or orange with the exception of the head and the margins of the pectus which are violet, of the margin of the abdomen which is purple and of a basal spot on the venter and small stigmatal spots which are black: feet orange as far as two-thirds of the femora, remainder violet, tarsi black. Body long. 15-17 mill.

Reported from Bengal, Bombay, Assam. Specimens from Assam vary in colour from purplish to sanguineous above. The Indian museum has specimens from Utakamand, S. India and Bihár.

88. *CHRYSOCORIS VIRIDIS*, Atkinson.

Proc. A. S. B. p. 12, (1887).

Allied to *C. purpureus*, Westw. Above light brassy-green, densely punctured: antennæ black, basal joint brown, rostrum almost reaching apex of second ventral segment: head and pronotum irrorated golden, the latter with a smoother transverse band close to, and parallel with anterior margin, and bearing slight traces of three blackish spots also traces of three median distant spots, lateral margins slightly reflexed, posterior angles slightly prominulous: scutellum with a steel-blue, smooth, semi-circular, basal elevation; on each side, three smallish black spots, the basal resting on the basal elevation, no discoidal or apical mark; beneath very sordid flavescent turning into ferruginous, sides of pectus brassy-green, stigmata black, irrorated green, base of anal segment slightly black, no black spot on basal segment: feet somewhat ferruginous, apex of femora, and tibiæ externally, brassy-green. Differs from *C. purpureus* in colour and markings above, in the less-obtuse apex of scutellum, and absence of purple border and black basal patch on the abdomen. Long, 15-16 mill.

From the Panjab,

89. *CHRYSOCORIS STOLLII*, Wolff.

Cimex stollii, Wolff, Ic. Cim. ii, p. 48, t. 5, f. 45 (1801).

Scutellum stockerus, Guérin, Voy. La Coquille, Ins. ii, p. 159 and 161 (1830).

Callidea stollii, Germar, Zeitschr. i (i) p. 114 (1839); Dallas, List Hem. i, p. 26 (1851); Walker, Cat. Het. i, p. 27 (1867), excl. syn.

C. (Chrysocoris) stollii, Stål, Hem. Fabr. i, p. 11 (1868): En. Hem. iii, p. 21 (1873).

Antennæ 5-jointed, black, first joint ferruginous: head, thorax and scutellum cœrulean: head very shining with a longitudinal streak and a spot on both sides at the fuscous eyes, black; two small impressed lines on the apex: rostrum 4-jointed, black, flavescent at the base: thorax with six black spots, the anterior three small, the posterior three large, oblong; posterior angles rather prominulous, black: scutellum shining greenish, margin and apex purple; with eight black spots, three on each side, one in the middle oblong and large, and one at the apex (sometimes obsolete) transverse: hemelytra black, shining cœrulean; exterior margin, rufous; interior margin broadly whitish: membrane fuscous, striated externally black: wings hyaline with a large black spot on the apex: abdomen beneath flavescent, throughout very finely impressly punctured, margin purple, on both sides with five black points on some of which is a small line: pectus flavescent with three violaceous spots on each side: anus with a black spot: feet unarmed; femora

flavescent, at the apex violaceous; tibiæ violaceous (*Wolff*). Long, $13\frac{1}{2}$ —14 mill.

Reported from China, Cambodia, Siam, Tenasserim, Burma, Assam, N. India.

Differs from *C. purpureus*, Westw. in its smaller, narrower body, thorax more elevated posteriorly, scutellum deeply impressed at the base and the number of the spots.

The discoidal spot on the scutellum is broadish and obovate.

90. CHRYSOCORIS PORPHYRICOLUS, Walker.

Callidea porphyricala, Walker, Cat. Het. i, p. 29 (1867).

Chrysocoris porphyricolus, Distant, J. A. S. Ben. xlviii (2), p. 37 (1879).

Gilded green, nearly fusiform, minutely punctured: head with a blackish stripe which has on each side of it a blackish spot and is bordered by two deep parallel furrows: pronotum with three longitudinally elongated purple spots in front of which there are three transversely elongated spots; a small cupreous spot on each angle near the hind border; scutellum with three large purple spots on each side; a slight transverse furrow which is curved to the anterior border on each side, tip purple: abdomen beneath red with black dots along each side of it and with a black subapical patch: legs red; femora towards their tips and tibiæ purple; tarsi black. (*Walker*.) Body long, 15 mill.

Reported from India, the Indian museum has specimens from Tenasserim and Sikkim: differs from preceding in the purplish tint more or less throughout above and the larger size of the spots.

91. CHRYSOCORIS ORNATUS, Dallas.

Callidea ornata, Dallas, List Hem. i, p. 27 (1851).

C. (Chrysocoris) ornatus, Stål En. Hem. iii, p. 21 (1873).

Above brilliant golden-green, becoming purplish after death(?), thickly and rather strongly punctured: head impunctate with a black spot on the vertex: pronotum with three small black spots close to the anterior margin, three large ones touching the posterior margin and one in each lateral angle: scutellum with the basal elevation smooth nearly impunctate, with a large triangular black patch on the disc, a large oblong black spot on each side of this, at the middle of the scutellum, and two smaller ones towards the apex: abdomen bright orange-red with the margins crimson; the stigmata and a large spot at the base and the apex, black: pectus violet, tinged with golden green: legs, rostrum and antennæ black, the legs tinged with violet (*Dallas*). Body long, $13\frac{1}{2}$ –14 mill.

Reported from China, Assam. Not strongly distinct from *C. stollii*, pectus without flavescent spots and lines, entire feet cœrulean-black.

92. *CHRYSOCORIS PULCHELLUS*, Dallas.

Callidea pulchella, Dallas, List Hem. i p. 25 (1851): Walker, Cat. Het. i, p. 26 (1867).

Chrysocoris pulchellus, Stål, En. Hem. iii, p. 22 (1873).

Closely allied to *C. marginellus*, Westw., but differs in its smaller size, in having the antennæ much broader and thicker and the second joint smaller than in that species; the head, in addition to the median longitudinal line has a small black spot on each side in front of the ocelli; the black spots also occupy more of the surface than in *C. marginellus* and are arranged precisely in the same manner; namely, nine on the pronotum of which three small ones on the anterior margin, one in each lateral angle and four large oblong ones on the disc towards the posterior margin; eight on the scutellum, placed, two, close to the base, forming an interrupted transverse band, a somewhat triangular one on middle of disc, one on each side of this, two behind the middle and one close to the apex: abdomen yellow with the margin crimson; stigmata, black, with a row of golden green spots within them and within these, another row of black ones; a black patch at the base and apex of abdomen: pectus violet and green: coxæ yellow: femora red with their tips, tibiæ, tarsi, rostrum and antennæ black. (*Dallas.*) Body long, $12\frac{1}{2}$ mill.

Reported from India, Silhat.

93. *CHRYSOCORIS ANDAMANENSIS*, Atkinson.

Proc. A. S. B. p. 12, (1887):

Above deep blue turning into purplish or into green, or green, shining, deeply and densely punctured: eyes and ocelli brown: antennæ black, basal joint flavescent (except the apex): rostrum flavescent, reaching posterior coxæ: thorax densely punctured, transversely sulcate before the middle, with a broad smooth band close to anterior border, marked by three black, oblong, transverse spots, also between the band and the base, three large, longitudinal, black spots of which the median is triangular with its apex pointing forwards; margins slightly reflexed, posterior angles slightly prominulous and blackish: scutellum with a semicircular basal elevation, smooth, immaculate; three rounded spots on each side, of which the last is the largest, and a linear longitudinal median basal streak, black; broad apical limbus bright orange: body beneath flavescent, sides of pectus, stigmata, and trans-

verse streaks therefrom on anterior margin of each segment on both sides, apex of femora and tibiæ externally, steel-blue; anal segment violet-black. Easily distinguished by its size and the broad, orange, apical limbus of the scutellum. Long, 17; breadth of pronotum, 9 mill.

The Indian Museum possesses a long series from the Andaman Islands.

94. CHRYSOCORIS MARGINELLUS, Westwood.

Callidea marginella, Westwood, Hope, Cat. Hem. i, p. 15 (1837); Germar, Zeitschr. i (i) p. 117 (1839); Dallas, List Hem. i, p. 25 (1851); Walker, Cat. Het. i, p. 26 (1867).

Callidea caelestis, Stål, Ofvers. K. V.-A. Förh. xii, p. 181 (1855); l. c. xiii, p. 52 (1856); Walker, l. c. iii, p. 510 (1868).

C. (Chrysocoris) marginellus, Stål, Hem. Fabr. i, p. 12 (1868); En. Hem. iii, p. 21 (1873).

Size of *C. purpureus*, Westw.: cœrulean-green, thorax with twelve spots, two intermediate, oblong; scutellum with nine, and an oblong anterior median stripe, black: thorax beneath golden-green; abdomen palely luteous with golden-greenish submarginal spots, margin broadly purple, stigmata black; femora rufous-fulvous, apex and tibiæ green (*Westw.*). Body long, 13-14 mill.

♂. Obscurely virescent-chalybeous; thorax with 11 black spots; scutellum densely and deeply punctured, with a basal transverse elevation, with 8 black spots of which the median longitudinal: pectus more obscure, yellow at the coxæ; abdomen yellow, each segment having on both sides a chalybeous-violaceous spot, last segment violaceous-black: femora cinnabar, apex and the tibiæ chalybeous: antennæ and tarsi, black. Head green chalybeous, subimpunctate, shining, tylus more obscure: antennæ black, second joint very minute: thorax sinuate anteriorly, sides oblique, broadly obliquely truncate on both sides posteriorly; scarcely so anteriorly, posteriorly (especially on the sides) more punctured, shining, chalybeous; adorned with eleven spots of which 3 anteriorly, 2 basal close together subelongate and 3 on each side placed triangularly, black: scutellum flatly-produced at the apex, densely and roughly punctured especially on the sides, transversely elevated at the base and there impunctate, green-chalybeous, adorned with seven rounded spots (arranged 2, 2, 2, 1) and an elongate median spot sometimes dilated at the base, black: pectus obscurely chalybeous-violaceous, yellow at the coxæ: abdomen roughly punctured on both sides, yellow, adorned with a black basal spot and obscurely chalybeous, transverse, lateral spots, last segment, violaceous-black: femora cinnabar, with apex and the tibiæ chalybeous: tarsi black. Colour sometimes somewhat golden

green, margin of abdomen, weakly violacescent (Stål). Long, 19; broad, 9 mill.

Reported from Madras, Bengal, Bombay, Celebes, Borneo. The Indian Museum has specimens from Chandbali (S. coast of Bengal).

95. CHRYSOCORIS EQUES, Fabricius.

Callidea eques, Dallas, List Hem. i, p. 28 (1851); Walker, Cat. Het. i., p. 32 (1867).

Chrysocoris eques, Stål, Hem. Fabr. i, p. 11, 12 (1868).

C. (Chrysocoris) eques, Stål, En. Hem. iii, p. 21 (1873).

Var. *a. Cimex eques*, Fabr., Ent. Syst. iv, p. 79 (1794). Tranquebar.

Tetyra eques, Fabr., Syst. Rhyng. p. 131 (1803); Schiödte in Kröyer's Tidsskr. iv. p. 284 (1842).

Scutellera eques, Guérin, Voy. La Coquille, Zool. ii, p. 158 (1830). Philippines.

Callidea eques, Burm., Handb. ii (i) p. 394 (1835); Germar, Zeitschr. i (i) p. 112 (1839); Voll., Faune Ent. l'Arch. Indo-Néer. p. 27 (1863).

Galostha eques, Am. & Serv., Hist. Nat. Ins. Hém. p. 33 (1843).

Var. *b. Callidea schwaneri*, Vollenhoven, Faune l'Arch. Indo-Néer. p. 26, t. 2, f. 7 (1863); Walker, l. c. iii, p. 511 (1868). Borneo.

Var. *c. Var. nicobarensis*, Atkinson, Proc. A. S. B. p. 13, 1887). Nicobars.

Callidea eques, Mayr, Reise Novara, p. 24 (1866). Nicobars.

Var. *d. Callidea formosa*, Westwood. Hope, Cat. Hem. i, p. 15 (1837); Germar, Zeitschr. i (i) p. 113 (1839). China.

Callidea dorsalis, White in Gray's Zool. Misc. p. 80 (1842).

Var. *a.* Body ovate, above green: a band on the head between the antennæ emitting a branch up to the base and two small spots, deep black: dorsal line on thorax and four spots on each side (3, 1) deep black: scutellum large with eight deep black spots (2, 2, 2, 1) and the dorsal spot anteriorly bifid: abdomen black, margin green with black points: feet cœrulean (*C. eques*, Fabr.). Long, 11—13 mill.

Var. *b.* Head flat, smooth, green, with the ocular margin blue: the eyes and ocelli brown: antennæ black, very pubescent, the second joint only one-fifth the length of the following: pronotum a little punctured, except perhaps on the anterior angles; lateral margins much dilated, green or blue, disc golden: scutellum very tumid without a basal elevation, much punctured, principally near the anterior angles, a little flattened at the apex; colour green or golden red with a more or less large black spot at the extremity: deep violet beneath, middle of the venter black also the tarsi, or venter green with a large discal streak and small marginal spots, black. This variety has the following subvarieties:—

1. Black spots on the lateral angles of the pronotum.

2. In addition, a black spot on the anterior margin of the pronotum.

3. a T-shaped spot or two small lines on the disc of the scutellum.

4. Seven rather indistinct spots on the pronotum, scutellum with a small median line, two lateral and one anal spot.

5. Five rather distinct spots on the pronotum and five larger on the scutellum (*C. schwaneri*, Voll.).

Long, 11-12 mill. : all from Borneo.

Var. *c. nicobaricus*, mihi, is represented in the Indian Museum by a long series from the Nicobar islands.

Above shining green ; eyes brown ; antennæ black : pronotum with the lateral margins much dilated, semicircularly rounded, edged black ; anteriorly with a transverse row of three black spots of which the median is largest, triangular, having its apex pointing hindward ; three black spots arranged in form of a triangle at the posterior angles, sometimes but two, and then with the basal margin black, on which rests a median triangular spot with its apex turning forwards and meeting the triangular median spot of the anterior row : scutellum without a basal elevation, no discal spot, three black spots on each side and one at the apex : body beneath entirely brassy-green, tinted violet or steel blue, especially on the pectus, a small median transverse patch on the anterior margin of each segment, also the stigmata and base of anal segment violet black : feet of a steel blue, tibiæ internally sordid ferruginous. Long, 11-12 mill.

Mayr describes what is probably the ♂ of this variety, also from the Nicobars, as having the pronotum anteriorly with three black marks of which the median is largest, in the middle with two rounded black marks and near the posterior margin three like them, of which the median is connected by means of a black line with the median mark on the anterior border : scutellum shining green, bluish on both sides with three pair of blackish spots, of which the anterior and median pair are rounded, the posterior transverse ; the median V-shaped mark is wanting and there is hardly any trace of the usual apical black spot : the basal segments of the abdomen are for the most part violet and somewhat green, the median are green with blackish-violet oblong streaks, stigmata violet and base of anal segment black.

Var. *d.* Brassy-green, pronotum with the sides reflexed, broader than the scutellum, spotted black and with two large, rounded dorsal spots, sanguineous ; scutellum sanguineous ; body beneath and feet brassy, the former spotted black, the stigmata deep blue (*C. formosa*, Westw.). Body long, 11-12 mill.

Reported from China.

Reported from Tranquebar, Malacca, Singapore, Banca, Sumatra, Java, Borneo. The Indian Museum has a long series of variety *c.* from the Nicobar Islands.

96. CHRYSOCORIS DILATICOLLIS, Guérin.

Scutellera dilaticollis, Guérin, Voy. La Coquille, Zool. ii, (2) p. 160, 164 (1830).

Chrysocoris stollii, Hahn (nec Wolff), Wanz. Ins. ii, p. 39, t. 44, f. 136 (1834).

Callidea abdominalis, Westwood, Hope, Cat. Hem. i, p. 15 (1837); Germar, Zeitschr. i (i) p. 112 (1839).

Galostha stockerus, Am. & Serv. Hist. Nat. Ins. Hém. p. 34 (1843).

Callidea dilaticollis, Dallas, List Hem. i, p. 28 (1851); Walker, Cat. Het. i, p. 28 (1867); Vollenhoven, Faune Ent. l'Arch. Indo-Néer. p. 28 (1863).

Callidea stockerus, Stål, Ofvers. K. V.-A. Förh. p. 389 (1855).

Chrysocoris stockerus, Stål, Hem. Fabr. i, p. 12 (1868).

Var. *Callidea sumatrana*, Vollenhoven, l. c. p. 28, t. 2, f. 9 (1863).

C. (*Chrysocoris*) *dilaticollis*, Stål, En. Hem. iii, p. 21 (1873).

Above shining blue, more or less greenish: head broad, triangular; eyes prominulous; median longitudinal line, black: antennæ black, in ♂ at least as long as the body, in ♀ shorter, two last joints comparatively stout: thorax anteriorly as broad as the head, abruptly produced posteriorly in a small, fine, rounded dilatation on each side; no depression in front, broader than the scutellum and almost twice broader than long, surface smooth or very weakly punctured; with two rows of three round, rather large black spots, and the lateral dilatation, also, black in the middle: scutellum with seven round, black spots and a large triangular spot towards the base, very broad in front, a little emarginate on the sides and having in some specimens a small green line in the middle; the posterior spot is placed in the middle and near the tip: thorax beneath of a beautiful shining green, with small yellow lines, on the sutures: rostrum green, with the base orange: abdomen bright orange yellow, with a quadrate patch at the base and the anus black-blue; sides green with two rows of four black dots on each side: femora bright orange yellow with their tips, the tibiæ and tarsi blue-green (*Guérin*). Long, 10—12; broad at the base of the scutellum, $5\frac{1}{2}$ —6 mill.

Reported from Java, Sumatra, Celebes, Timor, Malacca, Burma, India, China. The Indian Museum possesses specimens from Arakan in which the abdomen beneath is almost entirely dark brassy-green, the disc of the last three segments alone being orange yellow and in this respect approaches Var. *sumatrana*, Voll.

Genus LAMPROCORIS, Stål.

Hem. Afric. i, p. 34 (1864); Mayr, Reise Novara, Hem. p. 18 (1866): Stål, En. Hem. iii, p. 9, 22 (1873). Includes *Sophela*, Walker, Cat. Het. i, p. 17 (1867).

Stål distributes the species belonging to this genus amongst the subgenera *Lamprocoris* and *Sophela*, both of which are represented in India. Third joint of the antennæ longer than the second; tibiæ cylindrical neither flat nor furrowed above: prostethium impressed behind

the eyes within the anterior margin which is amplified between the eyes and the sternum: anterior margin of the basal angles of the scutellum subreflexed; ventral segments unarmed in the apical angles; near the sides, anteriorly and posteriorly, somewhat convex or tumescent.

97. *LAMPROCORIS LATERALIS*, Guérin.

Scutellera lateralis, Guérin, Voy. La Coquille, Zool. ii (2) p. 159, 160 (1830).

Callidea lateralis, Dallas, List Hem. i, p. 28 (1851); Walker, Cat. Het. i, p. 28 (1867): Vollenhoven, Faune Ent. l'Arch. Indo-Néerl. p. 32, t. 2, f. 11 (1863).

L. (Lamprocoris) lateralis, Stål, Berlin Ent. Zeitschr. x, p. 155 (1866); En. Hem iii, p. 22 (1873).

Head rounded at the tip, triangular, punctured, with two longitudinal grooves in the middle; green, shining, the sides and the space between the grooves of a rich Prussian blue: antennæ black: pronotum and scutellum bluish-green, the former very tumid and very broad behind, punctured, lateral posterior angles rather prominulous; above and anteriorly, with two oblong black spots, placed transversely and trending a little obliquely, towards the tip of a median and longitudinal line of which the extremity reaches their level and which ends at the posterior margin; on each side of this line are three long oblique spots which do not reach the posterior margin: scutellum punctured, with three transverse rows of black marks, of which five are on the anterior margin in the form of a crescent, four towards the middle, of which the two median are much the largest, three behind these, almost united by a weak brown mark, two more behind these last and often a very small transverse spot at the posterior extremity: body beneath is of the same colour as above: abdomen with a broad red band, commencing close to the base and ending near the anus, it occupies half the first segment, the 2-4 and half the fifth segment, and has four black-brown stigmatic dots on the margin: feet concolorous: hemelytra brown; wings transparent, tip alone infusate (*Guérin*). Long, 9—10; broad, 6—6½ mill.

Reported from Java, Sumatra, Assam. The Indian Museum possesses a specimen from Sikkim.

98. *LAMPROCORIS ROYLII*, Westwood.

Callidea Roylei, Westwood, Hope, Cat. Hem. i, p. 16 (1837): Germar, Zeitschr. i (i) p. 119 (1839): Dallas, List. Hem. i, p. 28 (1851); Walker Cat. Het. i, p. 28 (1867).

Var. *Scutellera pulchella*, Westwood, Royle, Ill. Bot. Him. p. liv, t. 10, f. 6 (1839).

Lamprocoris roylei, Stål, En. Hem. iii, p. 22 (1873): Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Rufous cupreous or golden, varied with black : pronotum with the dorsal line, three spots on each side and the humeral angle, black : scutellum with three basal and five apical spots, also a broad lunated band in the middle, black, margined green : body beneath greenish ; abdomen with black band and on the margins rufous spots (*C. Roylii*, Westw.). Body long, $9\frac{1}{2}$ mill.

Brassy or cœrulean-black, shining : disc of pronotum anteriorly and posterior margin tinted cupreous or brassy : scutellum, intensely green and gold, a transverse basal band and another median oblique (interrupted in the middle), and three rounded spots (posteriorly and arranged in form of a triangle), cœrulean black : scutellum covering the abdomen : two basal joints of antennæ short, equal, third almost twice as long as the second, last longest of all. Long, $10\frac{1}{2}$; broad, $6\frac{1}{4}$ mill. (*S. pulchella*, Westw.)

Reported from the Himálaya, Bengal, Nepál, Assam. The Indian Museum has specimens from Sikkim and Mussoorie.

99. LAMPROCORIS OBTUSUS, Westwood.

Callidea obtusa, Westw., Hope, Cat. Hem. i, p. 16 (1837) ; Germar, Zeitschr. i (i), p. 119 (1839) : Voll., Faune Ent. l'Arch. Ind. Néerl. i, p. 32 (1863) : Walker, Cat. Het. iii, p. 510 (1868).

L. (Lamprocoris) obtusus, Stål, En. Hem. iii, p. 22 (1873).

Golden-green : two anterior spots on the thorax, a dorsal line and four other oblique, black : eleven black spots on the scutellum : body beneath and the feet, black with a golden tinge ; margin of abdomen, fulvous, stigmata black (*Westw.*). Long, $9\frac{1}{2}$ mill.

Reported from Java.

100. LAMPROCORIS SPINIGER, Dallas.

Callidea spinigera, Dallas, Trans. Ent. Soc. v, p. 186, t. 19, f. 1 (1849).

Sophela spinigera, Walker, Cat. Het. i, p. 18 (1867).

Lamprocoris (Sophela) spinigera, Stål, En. Hem. iii, p. 22 (1873) : Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Broadly ovate, rather convex ; above brownish testaceous, with violet or brassy reflections, very thickly and finely punctured : head violet, shining, faintly punctured and transversely wrinkled, the tylus darker in colour ; eyes brown, ocelli red : pronotum faintly punctured with the lateral angles produced into a small acute spine on each side, the anterior and lateral margins and in the ♂ the whole anterior portion, cupreous or violet, shining : on each side, towards the anterior margin, is a small transverse fovea, surrounded by a brassy green ring ; scutellum very finely punctured and faintly wrinkled transversely,

especially at the base which is brassy, cupreous or violet : hemelytra with the margins pale testaceous : margins of the abdomen projecting slightly beyond the scutellum, bright red, crenated, each segment bearing two small projections or tubercles ; abdomen beneath, deep blue violet, very smooth and finely punctured, with a strong brassy-green reflection ; a violet line on the margin of each segment, running between the red tubercles ; anal apparatus red, violet at base in ♂ : pectus shining violet, punctured ; the antero-lateral margins and the prominent lateral angles, reddish : legs shining violet, finely pilose ; tarsi black : antennæ and rostrum black, the former covered with short hairs. (*Dallas.*) ♂, long with membrane 15 ; ♀, 16 mill.

Reported from N. India, Assam, Sikkim (Ind. Mus.) : varies somewhat in the colouring above and beneath : above often purplish nacreous, beneath the disc of abdomen shining red.

Div. TETRYARIA, Stål.

En. Hem. iii, p. 3, 24 (1873).

Body beneath distinctly convex, generally above and below equally convex or below more convex : thorax and scutellum at the base conjointly gradually longitudinally convex, very rarely slightly convexly inclined, basal part of thorax somewhat produced backwards between the basal angles of the scutellum or the thorax posteriorly gradually rounded between the lateral angles, basal angles very obtuse or rounded : venter in both sexes with two stridulatory spots, longitudinally very densely and very finely strigose, oblong or elongate, extended through at least the fourth and fifth segments, sometimes difficult to distinguish, intermediate incisures straight on the disc or biundated, abruptly and obtusely subangulately curved at the sides of the disc : orifices very distinct (*Stål*).

Genus HOTEA, Am. & Serv.

Hist. Nat. Ins. Hém. p. 41 (1843) : *Dallas*, List Hem. i, p. 5, 39 (1851) : *Mayr*. Reise Novara Hem. p. 15 (1866) : *Walker*, Cat. Het., i, p. 55 (1867) : *Stål*, Hem. Afric. i, p. 35, 53 (1864) ; En. Hem. iii, p. 24 (1873).

Body nude, above and beneath convex : head altogether convex, with a continued median lobe, bucculæ rather elevated before the middle : second and third joints of the antennæ subequal in length, or the second a little longer than the third : thorax sexangular, anterior lateral margins, distinctly sinuated, lateral angles produced, more or less acuminate, posterior angles rounded, posterior margin straight : scutellum as broad as the abdomen, rounded at the apex, not produced : prostethium dilated anteriorly, covering the base of the antennæ : sterna

slightly sulcated: disc of venter with two sericeous-shining spots, last segment sinuated at the apex: feet somewhat robust, tibiæ above flat (Stål).

101. HOTEA CURCULIONIDES, Herr. Schöff.

Pachycoris curculionides, Herr. Schöff., Wanz. Ins. iii, p. 106, t. 107, f. 331 (1835); Germar, Zeitschr. i (i) p. 106 (1839).

Pachycoris punctulatus, Germar, l. c. p. 105 (1839).

Hotea curculionides, Dallas, List Hem. i, p. 39 (1851); Walker, Cat. Hem. i p. 56 (1867); Vollenhoven, Faune Ent. l'Arch. Indo-Néer. p. 37 (1863).

Hotea (Tylonca) curculionides, Stål, En. Hem. iii, p. 25 (1873); Distant, J. A. S. B. xlviii (2) p. 37 (1879); A. M. N. H. (5 s.) iii, p. 44 (1879).

Ochraceous, deeply and thickly punctured brown or black, except on the vertex and anterior margins of the pronotum where the colour is more yellow: head beneath black, except the borders of the rostral groove: eyes and ocelli greyish yellow, the latter very small: two first joints of the antennæ yellow, the two next brownish and the last, brown: the feet are even more punctured than the body: the tibiæ reddish. This species varies much in the depth of its brown colour and the punctures more or less strong and black; Germar's *H. punctulata* is of a very deep brown; some specimens have three longitudinal lines on the head and thorax less punctured and lighter, and a zigzag transverse band on the scutellum, from the most advanced portion of which proceed three other light lines which reach the margins (Voll.). Long, 8—9 mill.

Schäffer's figure shows the upper surface deep brown without spots. The Calcutta form has four longitudinal patches of a deeper colour proceeding from the anterior margin of the pronotum, the two median are continued obliquely inward almost to the posterior margin where they meet. The scutellum has on each side an oblique small oblong spot near the base on each side, and a large subquadrate patch on each side beyond the middle, and two at the apex, all of a darker colour. Specimens from Tavoy and Assam have the same spots more or less distinct.

Reported from Amboina, Java, Sunda, Celebes, Timor, Ternate, Sumatra, Assam. The Indian Museum possesses specimens from Tavoy, Calcutta and Sikkim.

102. HOTEA NIGRORUFA, Walker.

Hotea nigrorufa, Walker, Cat. Het. i, p. 57 (1867).

Red, short-elliptical, thickly black-punctured, and with numerous small irregular black marks: head with five irregular red lines, and with two longitudinal furrows: antennæ black; first joint red; fourth

red at the tip: thorax with a red longitudinal line; sides luteous; angles acute: scutellum with an apical patch, which is not varied with black: abdomen luteous along each side: legs red, black speckled; tarsi black: hemelytra brown; corium red, with black punctures: wings cinereous. Var. *a.* body red, with the exception of the punctures. Var. *b.* like var. *a.*: punctures red, here and there black. (*Walker*). Body long, $10\frac{1}{2}$ mill.

Reported from India.

103. HOTEA(?) DIFFUSA, Walker.

Hotea (?) *diffusa*, Walker, Cat. Het. i, p. 57 (1867).

Testaceous, elliptical very minutely punctured: head slightly rostriform, with two black longitudinal lines, which in the forepart are accompanied by two slight furrows: thorax somewhat rounded along the hind border, angular on each side, contracted in front; two slight and interrupted black lines; a transverse lanceolate ferruginous-bordered mark on each side near the fore border: scutellum with a short longitudinal streak on each side, composed of minute black speckles. (*Walker*). Body long, $9\frac{1}{2}$ mill.

Reported from India.

DIV. ODONTOTARSARIA, Stål.

En. Hem. iii, p. 4, 26 (1873).

Head longer than broad or equally long and broad: anterior lateral margins of thorax anteriorly not, or but very slightly, rounded: propleura not, or but slightly, impressed near the lateral margins: orifices not distinguishable: second joint of antennæ straight.

Genus ALPHOCORIS, Germar.

Zeitschr. i, p. 58 (1837): Dallas, List Hem. i, p. 5 (1851): Stål, Hem. Afric. i, p. 35, 60 (1844): Mayr, Reise Novara Hem. p. 13 (1866): Walker, Cat. Het. i, p. 59 (1867).

Body stout, especially beneath convex, narrowly oval or oblong, greyish-tomentose: head stout, not margined, very convex, bucculæ rather elevated: antennæ short, somewhat longer than the head: thorax sexangular, posterior angles obtusely rounded, lateral angles not prominent, obtuse: scutellum a little produced at the apex, the produced part sinuate or somewhat sinuate at the apex: prostethium somewhat dilated at the apex: sterna deeply sulcate: ventral incisures curved (*Stål*).

104. ALPHOCORIS LIXOIDES, Germar.

Alphocoris lixoides, Germar, Zeitschr. i, p. 59, t. i, f. 3 (1839): Am. & Serv., Hist. Nat. Ins. Hém. p. 44 (1843): Dallas, List Hem. i, p. 41 (1851): Stål, Hem. Afric. i, p. 60 (1864): En. Hem. iii, p. 26 (1873): Walker, Cat. Het. i, p. 59 (1867).

♂, ♀. Oblong, narrow, yellow-testaceous, beneath with feet (except ventral limb) blackish: above, rather densely and distinctly punctulate, with four obsolete fuscous streaks; apex of scutellum subtruncate or slightly sinuate: disc of venter sometimes yellow-testaceous and adorned with two black streaks (*Stål*). Long, $9\frac{1}{2}$ —10; broad, 3 — $3\frac{1}{2}$ mill.

Reported from North India, Senegal.

Div. EURYGASTRARIA, Stål.

En. Hem. iii, p. 4, 29, (1873): *Eurygastridæ*, pt., Dallas, List Hem. i, p. 43 (1851).

Differs from *Odontotarsaria*, in having the orifices distinct: second joint of antennæ somewhat curved.

Genus EURYGASTER, Laporte.

Subg. id. Ess. Hém. p. 69 (1832): *Eurygaster*, Stål, Hem. Afric. i, p. 61 (1864); En. Hem. i, p. 18 (1870); iii, p. 29, 30 (1873). Includes, according to Stål;—*Bellocoris*, pt., Hahn, Wanz. Ins. ii, p. 42 (1834):—*Eurygaster*, Spin., Ess. p. 365 (1837); Mulsant & Rey, Pun. Scut. p. 59 (1865):—*Tetyra*, Germar, Zeitschr. i, (i) p. 72 (1839): Herr. Schäff. Wanz. Ins. v, p. 48 (1839):—*Eurygaster*, subg. *Platypleurus*, Mulsant & Rey, Pun. Scut. p. 59 (1865).

Body oval or ovate, a little convex above and beneath: head flat or very slightly convex; antennæ short, slender: thorax sexangular: scutellum with the sides parallel, much narrower than the abdomen, leaving the entire costal part of the hemelytra free: abdomen with the sides flattened broader than the thorax: orifices extended in a rather long furrow, abruptly abbreviated; sides of mesosternal furrow neither carinate nor rugose; tibiæ furrowed above. In the section to which *E. maurus*, Linn. belongs, the lateral margins of the pronotum are straight or somewhat so; the scutellum is marked on both sides at the base near the basal angles with an oblong callous spot and the smooth longitudinal line is not callous (*Platypleurus*, M. & R.).

105. EURYGASTER MAURUS, Linnæus.

E. (Platypleurus) maurus, Stål, En. Hem. iii, p. 30 (1873).

Tetyra maura, Fallen, Hem. Suec. Cim., p. 12 (1828): Burm., Handb. Ent. ii, p. 390 (1835): Germar, Zeitschr. i, p. 73 (1839); Rambur, Fauna Andal. ii, p. 100 (1841).

Eurygaster maurus, Am. & Serv., Hist. Nat. Ins. Hém. p. 53 (1843); Dallas, List Hem. i, p. 48 (1851); Fieber, Eur. Hem. p. 370 (1861); Mulsant & Rey, Pun. France, p. 59 (1865); Walker, Cat. Het. i, p. 66 (1867); Stål, Hem. Fabr. i, p. 12 (1868); Douglas & Scott, Brit. Hem. i, p. 65 t. 2, f. 5 (1865); Saunders, Trans. Ent. Soc. p. 119 (1875); T. Sahlb., K. S. V.-A. Handl. xvi, 4, p. 14 (1878); Distant, Trans. Ent. Soc. p. 415 (1883).

Var. *a*.—*Cimex maurus*, Linn., Fauna Suec., p. 246 (1761); Fabr., Syst. Ent., p. 99 (1775); Ent. Syst. iv, p. 87 (1794).

Tetyra maura, Fabr., Syst. Rhyng., p. 136 (1803).

Thyreocoris austriacus, Schranck, Fauna Boioc. ii, p. 68 (1801).

Odontotarsus maurus, Spin., Ess. Hém. p. 363 (1837).

Eurygaster cognatus, Westwood, Hope, Cat. Hem. i, p. 11 (1837).

Var. *b*.—*Tetyra picta*, Fabr., Syst. Rhyng. p. 136 (1803).

Odontotarsus pictus, Spin., Ess. Hém. p. 363 (1837).

Eurygaster orientalis, Westwood, Hope, Cat. Hem. i, p. 11 (1837).

This species varies much in size and colour from brownish tawny without markings to luteous with stripes and patches of brown.

Var. *a*.—Greyish or fuscous, scutellum at the base with two white spots (Linn.). Rufous-brunneous, punctured black: thorax with two diverging streaks, somewhat fuscous: scutellum with two minute basal, whitish spots, and an elevated median line, paler: beneath obscurely luteous, with a black spot before the anus (*E. cognatus*, Westw.). Long, $10\frac{1}{2}$ mill.

Var. *b*.—Head and thorax obscure, a little irrorated with black: scutellum large, obscure; with two callous spots as in *T. maura*, two spots in the middle and a dorsal line bifurcated posteriorly, yellow: connexivum spotted fuscous on both sides (*T. picta*, Fabr.). Fuscous-rufescent, punctured black, variegated paler; a slender line from the head to the apex of the scutellum and two other oblique lines united to it (having the appearance of a triangular scutellum) and a pair of larger spots at the sides of the scutellum: beneath rufescent, punctured black, especially in the middle of the abdomen (*E. orientalis*, Westw.). Long, 9-10 mill.

Reported from Europe, Africa, India, Japan.

Div. ODONTOSCELARIA, Stål.

En. Hem. iii, p. 4, 30 (1873).

Body setose or pilose: head transverse, somewhat semiorbicular, thorax anteriorly broader than the head, anterior lateral margins distinctly rounded: the scutellum very broad: propleura deeply impressed or excavated towards the lateral margins, the part lying beyond the depression a little deflexed: venter without stridulatory strigose spots; orifices not distinguishable (Stål).

Genus ARTOCORIS, Germar.

Pt., Zeitschr. i (i), p. 46 (1839); Stål, En. Hem. iii, p. 31 (1873). Includes, *Irochrotus*, Am. & Serv., Hist. Nat. Ins. Hém., p. 39 (1843); Fieber, Eur. Hem. p. 86, 377 (1861); Mayr, Reise Nov. Hem. p. 18 (1866).

Body thickly clothed with long hairs: lateral margins of thorax incised or sinuated behind the middle, between the sinus a deep transverse impression.

106. ARTOCORIS INCISUS, Stål.

Arctocoris incisus, Stål, En. Hem. iii, p. 31 (1873).

♂. Narrowly subobovate, punctulate, black, turning above into ferruginous, greyish-pilose and subtomentose: thorax before the middle slightly roundly-narrowed, transversely impressed very distinctly in the middle, lateral margins very deeply incised in the middle, anterior angles somewhat prominent forwards. The ♂ has on the ventral disc of 4th, 5th segments on both sides, a deep black opaque, subimpressed, oval spot. Allied to *A. lanatus*, Pallas, but differs in being smaller, narrower, subobovate, narrowed hindwards, thorax only narrowed at the apex, lateral margins very deeply incised, not obtusely sinuated, and with the bucculæ more elevated (Stål) Long 5, breadth of pronotum, 3 mill.

Reported from Bengal.

Species of uncertain position.

107. CALLIDEA FASCIALIS, White.

Callidea fascialis, White, Trans. Ent. Soc. iii, p. 86 (1842); Dallas, List Hem. i, p. 28 (1851); Walker, Cat. Het. i, p. 27 (1867); Stål, En. Hem. iii, p. 31 (1873).

Head short, in front rather blunt, with a large pinkish-violet spot, on the side of the two impressed præocular lines, the space between these, being green: first joint of the antennæ testaceous at base, green at the tip: rostrum reaching the posterior coxæ, black at the tip, yellow at the base: thorax with seven black spots; two distant anterior ones in front connected by a narrow slightly curved black line: five posterior ones, the median, largest, and square, apparently connected together at the base by an obscure band, which has a slight pinkish hue on the posterior blunt angle of the thorax: legs yellow, femora at tip, bluish green, tibiæ rufescent, ciliated: scutellum convex, posteriorly bent down, blunt at apex, with a semicircular impression at the base, deepest on the dorsum; at the base there is a narrow, transverse black band, sinuated on the posterior margin; a little before the middle there is another transverse black band, broadest in the middle beyond which

are three spots, one of them subapical: abdomen beneath, yellow, sides tinged with pink, each segment being marked laterally with a black spot, the inner sides of which are tinged with green. (*White*). Body long, 11 mill.

Reported from India, Assam.

108. *CALLIDEA HISTEROIDES*, Walker.

Callidea histeroides, Walker, Cat. Het. i, p. 28 (1867).

Blackish purple, short-elliptical, largely punctured: head with two longitudinal furrows which diverge between the eyes, space between the furrows somewhat ridged in front: antennæ black; second joint rather more than half the length of the first: thorax with two green stripes, very thinly punctured; punctures mostly along the fore border and along a transverse antemedial furrow; a fusiform, transverse, slightly depressed, ringlet on each side in front of the furrow: scutellum with a green band bordering a transverse furrow which is curved on each side to the fore border: abdomen beneath green, with a purplish band along the fore border of each segment and with a deeply dentate red stripe along each side: legs blackish green; tarsi black. (*Walker*). Long, 8–9 mill.

Reported from Cachar (Assam).

109. *CALLIDEA GIBBULA*, Walker.

Callidea gibbula, Walker, Cat. Het. i, p. 29 (1867).

Purplish black, elliptical, thinly and roughly punctured: head with two longitudinal furrows, which diverge on the vertex: thorax with a very slight transverse furrow, which is curved on each side to the base: abdomen beneath, greenish at the tip, and with two deeply dentate lateral stripes, which do not extend to the base (*Walker*). Long, 8–9 mill.

Reported from the Panjab.

110. *CALLIDEA SCRIPTA*, Walker.

Callidea scripta, Walker, Cat. Het. i, p. 29 (1867).

Purple, short-elliptical, largely punctured: head with two longitudinal furrows, which diverge towards the face and more towards the hind border: antennæ black; second joint nearly as long as the first: thorax with two golden green stripes, which are much abbreviated in front, and thence emit two oblique branches towards the hind angles; a fusiform transverse cupreous ringlet on each side in front: scutellum with a transverse furrow which is curved on each side to the fore

border; four cupreous green-bordered bands: second, third and fourth bands connected on each side; second connected in the middle with the third, forked on each side, fourth apical: pectus blue: abdomen beneath blue; a purple band on the fore border of each segment; a dentate red stripe on each side: legs green; tarsi black (*Walker*). Long, 9—10 mill.

Reported from Cachar (Assam), N. India.

111. *CALLIDEA CONTRARIA*, Walker.

Callidea contraria, Walker, Cat. Het. i, p. 30 (1867).

Gilded green, short, stout, nearly elliptical, rather thinly and roughly punctured: head purple in front with two longitudinal furrows which diverge on the vertex: antennæ black; first joint purple; second more than half the length of the first: thorax with seven short purple stripes, in front of which there is a transverse purple spot on each side: scutellum with three purple spots near the base, and with three purple bands of which the second is interrupted; three hinder transverse spots, one on each side and one subapical: pectus purple: abdomen red; under side with a row of black dots along each side with a purple disc: legs bluish green; tarsi black (*Walker*). Long, 10—11 mill.

Reported from N. India.

112. *FITHA ARDENS*, Walker.

Fitha ardens, Walker, Cat. Het. i, p. 45 (1867).

Gilded green, elliptical, largely punctured: head with two longitudinal furrows, which diverge between the eyes and converge slightly on the hind border; vertex purple between the furrows: antennæ 4-jointed (?), black; first joint reddish at the base: thorax and scutellum mostly brilliant reddish cupreous; the former with six purple spots; the latter with eight purple spots; three on each side; seventh elongated, on the disc near the base; eighth sub-apical: pectus with a transverse yellow streak on each side: abdomen beneath with a bright purple stripe along each side, and with a yellow patch on the disc: legs red; tibiæ and tips of femora blackish green; tarsi black: hemelytra black; space towards the base, except the costa, cinereous, nearly hyaline: wings cinereous, nearly hyaline (*Walker*). Long, 8½ mill.

Reported from India.

113. *CÆNINA VARIOLOSA*, Walker.

Cænina variolosa, Walker, Cat. Het. i, p. 82 (1867).

Aeneous: head with a pale yellow spot on each side: antennæ

yellowish, piceous towards the tips: thorax mostly yellowish, with a pale yellow border; an æneous band in front, containing two quadrate whitish spots, behind which there is an æneous spot; punctures æneous: scutellum yellowish, excepting the punctures and a patch on the disc, and three whitish spots on the fore border: legs whitish; femora at the base and coxæ black: corium yellowish, with æneous punctures (*Walker.*). Body, long, 2 mill.

Reported from Burma.

Subfam. PENTATOMINA, Stål.

Hem. Afric. i, p. 32, 76 (1864); Ofvers. K. V.-A. Förh. (3), p. 31 (1872); En. Hem. v, p. 28 (1876).

(a). The primary and subtended veins of the hemelytra generally close to each other and diverging at the apex, parallel or somewhat so: hamus generally absent: scutellum varying in size, generally furnished with frena: entire basal margin of thorax touching base of the scutellum: rostral furrow anteriorly not or but very slightly narrowed.

(b). Rostrum extended behind the first pair of coxæ, of variable length, 1-2 joints elongate, the second entirely or to the greatest part extended behind the bucculæ.

(c). Scutellum generally reaching or extending beyond the middle of the abdomen, rarely short, and if so, narrow at the apex and only slightly or very slightly produced behind the frena: membrane moderate or small.

(d). Tarsi 3-jointed: tibiæ generally furrowed above.

(e). Rostrum slender, more or less remote from the labrum which is inserted below the apex of the tylus; rostral furrow anteriorly sometimes coarctate: bucculæ usually higher anteriorly, parallel, not united posteriorly.

The divisions of this large sub-family are still only tentative and cannot be satisfactorily arranged by any one working only in India away from the types. I only give when possible what may be considered a probable arrangement after consulting the very considerable literature on the subject.

Div. PODOPARIA, Stål.

En. Hem. v, p. 29 (1876).

Anterior lateral margins of the thorax produced in a tooth or spine before the lateral angles which on this account appear as if sinuate or emarginate: entire antenniferous tubercles or a great part prominulous beyond the lateral margins of the head, generally acutely produced outwards at the apex: first joint of the rostrum not extended behind the

bucculæ which are everywhere equally high or posteriorly higher: eyes strongly prominulous or slightly stylate: frena sometimes occupying one-third the length of the scutellum which generally reaches the end of the abdomen.

Genus SCOTINOPHARA, Stål.

Ofvers. K. V.-A. Förh. p. 502 (1867): En. Hem. v, p. 33 (1876); Horvath, Wien Ent. Zeit. ii, p. 165 (1883).

Body ovate: head somewhat convex, more or less sinuate before the eyes; juga flattened, entirely distant, not narrowed before the anteocular sinus, not converging before the somewhat elevated tylus, rounded at the apex or roundly truncated: antenniferous tubercles placed below the lateral margins of the head and entirely prominulous beyond those margins, acutely produced outwards at the apex; bucculæ continued through, low, everywhere equally high: antennæ somewhat short, basal joint entirely visible from above, second joint distinctly shorter than the third, fifth joint scarcely or only a little stouter than the fourth elongate fusiform: rostrum reaching the last pair of coxæ: thorax transverse, furnished with a gular ring prominulous on both sides in a more or less acute tooth, and armed before the humeral angles with an acute tooth: scutellum large, longer than the corium, reaching the apex of the abdomen, slightly narrowed behind the base, the basal part with frena: prostethium furrowed, the furrow with elevated margins: second genital segment in ♂ entirely hidden, the third segment only visible. (*Horvath.*)

114. SCOTINOPHARA AFFINIS, Haglund.

Scotinophara affinis, Haglund, Stettin Ent. Zeit. xxix, p. 153 (1868); Stål, En. Hem. v, p. 33 (1876).

♀. Fuscous-lurid, beneath blackish, densely and strongly punctured; rostrum, tibiæ (base excepted) and tarsi, rufescent; pronotum anteriorly with a very minute annulated tooth, sides subsinuate, lateral angles very slightly emarginate: scutellum distinctly truncate at the apex, extended to the apex of the abdomen. Closely allied to *S. lurida* Burm. from which it scarcely differs except in the anterior tooth on the pronotum being smaller, sides of thorax more distinctly sinuate, and thorax somewhat more impressed. Rostrum reaching the last pair of coxæ: membrane almost hyaline, margin fuscous: second joint of antennæ rufescent (*Haglund*). Long, 9; broad scarcely 5 mill.

Reported from Rangoon.

115. SCOTINOPHARA LURIDA, Burmeister.

Tetyra lurida, Burm., Nov. Act. Ac. Cæs. Leop. Car. Nat. Cur. xvi, Suppt. (i) p. 288 (1834).

Podops luridus, Germar, Zeitschr. i (i) p. 64 (1839); Dallas, List. Hem. i, p. 52 (1851); Walker, Cat. Het. i, p. 72 (1867).

Scotinophara lurida, Stål, En. Hem. v, p. 33 (1876); Scott, A. M. N. H. (4 s.) xiv, p. 289 (1874); (5 s.) Distant, iii, p. 44 (1879); Trans. Ent. Soc. p. 415 (1883).

Fuscous: head small; eyes free, almost stylate; clypeus produced forwards, with a distinct groove on each side, in which the antennæ lie: antennæ with 1-2 joints of equal length, half as long as the third, 3-5 joints of equal length, the last incrassate: pronotum narrowed forwards, on each side on the anterior angle a small acute spine, a similar one on each humeral angle, a weak, transverse furrow beyond the middle: scutellum a little shorter than the abdomen: rostrum, tibiæ, and feet reddish. (*Burm.*) Long, $10\frac{1}{2}$; broad, $6\frac{1}{4}$ mill.

Reported from Canton, Japan, Assam.

116. SCOTINOPHARA BISPINOSA, Fabricius.

Cimex bispinosus, Fabr., Ent. Syst. Suppt. p. 530 (1798).

Tetyra bispinosa, pt. Fabr., Syst. Rhyng. p. 138 (1803).

Scotinophara bispinosa, Stål, Hem. Fabr. i, p. 21 (1868); En. Hem. v, p. 33 (1876).

♀. Blackish; thorax behind the middle, scutellum, hemelytra and broad ventral limbus fuscous-flavescent, punctured ferruginous-black: antennæ, rostrum, tibiæ and tarsi greyish flavescent; last joint of antennæ, fuscous: spine of anterior and lateral angles of the thorax large, black, pallescent at the apex. Readily distinguished by the great spines of the thorax, almost equally long, pallescent at the apex and the anterior lateral margins of the thorax being straight. Head with the juga and tylus equally long, anteocular spine moderate: third joint of antennæ scarcely twice longer than the second: thorax slightly transversely impressed between the spines of the lateral angles; anterior angles with an acute spine turning outwards and forwards, subequal in length to the first joint of the antennæ; lateral angles with a spine turning outwards scarcely shorter than the spines of the anterior angles; anterior margin depressed, anterior lateral margins straight, entire, unarmed, somewhat callous behind the middle: scutellum reaching apex of abdomen, about 4th basal part somewhat narrowed hindwards, thence lateral margins subparallel, posteriorly rounded, apex obtuse, subsinuate: tubercle of apical angles of ventral segments distinct, pallid (*Stål*). Long, 8; breadth of pronotum, $4\frac{1}{3}$ mill.

Reported from Tranquebar.

117. SCOTINOPHARA COARCTATA, Fabricius.

Cimex coarctatus, Fabr., Ent. Syst. Suppt., p. 530 (1798).

Tetyra bispinosa, pt. Fabr., Syst. Rhyng. p. 138 (1803).

? *Podops bispinosus*, Herr. Schöff., Wanz. Ins. v, p. 45, t. 158, f. 496 (1839)
Dallas, List Hem. i, p. 53 (1851).

Scotinophara coarctata, Stål, Hem. Fabr., i, p. 21 (1868); En. Hem. v, p. 33 (1876).

Body oblong, entirely obscure: very slightly shining; head and anterior part of thorax, black: thorax on each side with two small teeth, one towards the apex, the other towards the base: scutellum coarctate on both sides in the middle (*Fabr.*).

♂ Differs from *S. bispinosa*, Fabr. in having the thorax anteriorly and the head more inclined, thorax scarcely transversely impressed in the middle, teeth of its anterior and lateral angles minute, equal in size; anterior lateral margins straight, slightly rounded anteriorly (*Stål*). Long, 7; broad, 4 mill.

Reported from Tranquebar, Ceylon.

118. SCOTINOPHARA TARSALIS, Vollenhoven.

Podops tarsalis, Voll., Faune Ent. l'Arch. Indo-Néer. p. 42, t. 3, f. 8 (1863); Walker, Cat. Het. iii, p. 520 (1868).

Scotinophara tarsalis, Stål, En. Hem. v, p. 33 (1876); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Body above rather deep brown, covered all over with an immense number of small black dots which have the effect of making it appear almost black: head and pronotum covered with a weak yellowish pubescence: tylus a little more tumid than the juga of which the further angles are weakly prolonged: the spine on the sides of the head rather robust: first joint of antennæ of an obscure brown, the rest of a light brown: eyes blackish; ocelli rather small: pronotum emarginate anteriorly and with two strong, broad spines at the anterior angles; lateral borders weakly widened in the middle, and the lateral angles end in an acute point followed by a small notch: scutellum rather flat, a little narrowed before the middle and oval at the apex, usually with two glossy yellow spots near the basal angles: body beneath, black, punctured, with a sparse yellow pubescence: rostrum light brown: femora and four first tibiæ black, posterior with half of the tibiæ light brown which is the colour of all the tarsi: angles of ventral segments and margins are nodulose (*Voll.*). Long, 6 mill.

Reported from Java, Borneo, Assam. In Assam usually with legs luteous punctured with black.

119. SCOTINOPHARA OBSCURA, Dallas.

Podops obscurus, Dallas List Hem. i, p. 52 (1851); Voll., Faune Ent. l'Arch. Indo-Néer. p. 41, t. 3, f. 6 (1863); Walker, Cat. Het. i, p. 72 (1867).

Scotinophara obscura, Stål, En. Hem. v. p. 34 (1876); Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Above brown, obscure, thickly and rather finely punctured; head rather small, black, narrowed in front; juga longer than the tylus, but not meeting in front of it, a small spine on each side in front of the eyes: thorax blackish in front, with a short spine at each anterior angle, the antero-lateral margins nearly straight, and the lateral angles emarginate: scutellum reaching the apex of the abdomen, distinctly truncated at the apex, constricted a little before the middle: body beneath pitchy black, very thickly and finely punctured and sparingly clothed with short golden hairs: femora black with an indistinct pale band near the apex: tibiæ and tarsi pale brown: rostrum and antennæ pitchy (*Dallas*). Long, 7—8 mill.

Reported from Assam, Tenasserim, Borneo, Java.

120. SCOTINOPHARA NIGRA, Dallas.

Podops niger, Dallas, List. Hem. i, p. 53 (1851); Walker, Cat. Het. i, p. 72 (1867).

Scotinophara nigra, Stål, En. Hem. v, p. 34 (1876).

Pitchy black, somewhat obscure, thickly punctured, sprinkled with yellowish hairs: head rather long, with a strong spine before each eye; tylus as long as the juga, elevated into a tubercle about the middle: thorax gibbous in front, with a faint furrow across the middle; the antero-lateral margins reflexed, rounded; a long spine directed forwards, on each side at the anterior margin, and a small one at each lateral angle; scutellum as long as the abdomen, contracted before the middle, somewhat truncated at the apex, with a small pit in each basal angle: outer margin of the hemelytra and the edge of the abdomen pitchy red: legs concolorous; tarsi ferruginous: rostrum pitchy red, with the basal joint black: antennæ pitchy (*Dallas*). Long, $7\frac{1}{2}$ -8 mill.

Reported from India?

121. SCOTINOPHARA SPINIFERA, Westwood.

Podops spinifera, Westwood, Hope, Cat. Hem. i, p. 16 (1837); Stål, En. Hem. v, p. 125 (1876).

Black, coarsely punctured; head anteriorly attenuated, subtruncate at the apex; a porrect spine on both sides before the eyes: pronotum scabrous anteriorly, abruptly elevated, sides acutely serrate and furnish-

ed with a lateral tooth; posterior angles of the abdominal segments, acute (*Westw.*). Long, $8\frac{1}{2}$ mill.

Reported from Bengal.

122. SCOTINOPHARA LIMOSA, Walker.

Podops limosus, Walker, Cat. Het. i, p. 72 (1867).

Tawny, punctured, piceous beneath: head carinated: pronotum with an obliquely porrect spine on each side in front; hind angles forming two acute teeth: scutellum extending almost to the tip of the abdomen, much narrower than the breadth of the abdomen which is tawny along each side, beneath: femora piceous (*Walker*). Long, 6-7 mill.

Reported from N. India: the colour distinguishes it from *S. nigra*, Dallas, with which it agrees in structure.

Genus STORTHECORIS, Horvath.

Wien. Ent. Zeit. ii, p. 296 (1883).

Body briefly oval: head transverse, slightly convex, gradually dilated forwards before the anteocular sinus: juga flattened, entirely distant, not converging before the somewhat elevated tylus: antenniferous tubercles produced outward in a conical spine placed in the same plane with the lateral margins of the head; bucculæ continued through, low, everywhere equally high: antennæ shortish, basal joint altogether visible from above, stoutish, second joint much shorter than the third, fourth joint somewhat shorter than the third, fifth joint a little stouter than the fourth, elongate-fusiform: thorax transverse, anterior lateral margins acute, irregularly serrated, furnished with a process behind the anterior angle, produced in an acutish tooth before the humeral angles, disc transversely impressed in the middle, anterior lobe somewhat rugose, furnished on each side with a transverse furrow behind the anterior margin which gradually disappears towards the anterior angles and there approaches the anterior margin: scutellum large, longer than the corium, reaching the apex of the abdomen (σ) or nearly reaching it (φ), slightly narrowed behind the base, thence slightly amplified; frena short: prostethium furrowed, furrow with moderately elevated margins: feet moderate; tibiæ furrowed: second genital segment in σ entirely hidden, only the third genital segment visible (*Horv.*). Differs from *Scotinophara*, Stål, in the shorter rostrum and the gular ring without a tooth on each side: from *Amauropepla*, Stål, in the head not being narrowed forwards before the anteocular sinus, in the tylus being somewhat elevated, and in the rostrum being longer.

123. STORTHECORIS NIGRICEPS, Horvath.

Storthechoris nigriceps, Horv., Wien. Ent. Zeit. ii, p. 297 (1883).

♂, ♀. Fuscous-testaceous, rather densely punctured fuscous: head, pectus and a very large discal patch on venter, black: juga extending distinctly beyond the tylus, gradually a little dilated before the middle, obliquely roundly truncated at the apex: spine of the antenniferous tubercles, robust, straight, obliquely turning outwards and subacute at the tip: the anterior lateral margins of the thorax behind the triangular gular process, very slightly rounded and dilated, the obsolete intra-marginal furrow parallel with the margins: the continued median line more or less obsolete on the thorax and three callous basal spots on the scutellum, pallid: scutellum truncated at the apex (♂), or rounded ♀: membrane whitish-hyaline: lateral borders of metastethium and venter broadly yellow-testaceous, punctured black; ventral spiracula and small basal spots on the connexivum, black; rostrum, antennæ and feet, yellow-testaceous, variegated with black, sparingly greyish-pilose: third joint of the antennæ more than thrice longer than the second (*Horv.*). Long, 7; broad, 4 mill.

Reported from the Himálaya.

Genus AMAUROPEPLA, Stål.

Ofvers. K. V.-A. Förh. p. 502 (1867); En. Hem. v, p. 34 (1876).

Differs from *Scotinophara* in having the head gradually narrowed forwards before the anteocular sinus: the anterior lateral margins of the thorax rounded and denticulate: head somewhat flat: tylus not elevated.

124. AMAUROPEPLA DENTICULATA, Haglund.

Amauropepla denticulata, Haglund, Stettin. Ent. Zeit. xxix, p. 151 (1868): Stål, En. Hem. v, p. 34 (1876).

♂. Oblong, above lurid, beneath black-fuscous, entirely densely punctured black; rostrum and feet sordid flavescent; membrane and wings whitish-hyaline, external margin of membrane hardly flavescent; thorax with the sides serrate and lateral angles broadly emarginate. Head with tylus shorter than the juga which are hiscent at the apex; bucculæ elevated: eyes very prominent, almost pedunculate: ocelli placed a little behind an imaginary line drawn between the base of the eyes, twice more distant from each other than from the eyes: antenniferous tubercles externally spinose, entirely visible from above: first and second joints of the antennæ subequal, one half the length of the third: rostrum short, reaching the middle between the anterior and

intermediate coxæ: sides of thorax slightly rounded, irregularly serrate or denticulate, transversely impressed on the disc; posterior margin, straight: scutellum large, reaching apex of abdomen, spathulate, with the sides sinuate, broadly rounded at the apex; frena short: abdomen densely punctured; minute tubercles behind the spiracula less distinct: feet moderate, tibiæ hardly sulcate externally towards the apex (*Haglund*). Long, 10; broad, 5; exp. hemi. 18 mill.

Reported from Rangoon.

Genus MELANOPHARA, Stål.

Ofvers. K. V.-A. Förh. p. 503 (1867); p. 152 (1868); En. Hem. v, p. 34 (1876).

Differs from *Aspidestrophus*, Stål, in having the head very slightly convex behind the middle, somewhat concave towards the apex, margins acute; rostrum reaching the intermediate coxæ; body oval.

MELANOPHARA DENTATA, Haglund.

Melanophara dentata, Haglund, Stettin Ent. Zeit. xxix, p. 152 (1868): Stål, En. Hem. v, p. 34 (1876).

♀. Black, opaque, above finely, remotely, abdomen more densely, punctured; briefly, palely pubescent; rostrum and tarsi, obscurely rufescent; thorax anteriorly elevated and marked with gyrated smooth impressions; impressed transversely in the middle; anterior angles with a very minute tooth, sides rounded and furnished with four small teeth, lateral angles with a large acute spine and behind it slightly emarginate. Head anteriorly rounded, very slightly emarginate; juga longer than the tylus, contiguous: ocelli situate behind an imaginary line drawn between the base of the eyes, twice more distant from each other than from the eyes: antenniferous tubercles broad, externally strongly dentate, altogether distinct from above: first and second joints of the antennæ equal, one half the length of the third: bucculæ much elevated, continued through: rostrum reaching the intermediate coxæ, third and fourth joints equally long, second subequal to them: thorax anteriorly with less distinct, smooth, gyrated or tortuous impressions; posterior margin, straight: scutellum broad, rounded at the apex, not reaching the apex of the abdomen; sides before the middle slightly sinuated; frena not reaching the middle; membrane slightly fuscous: spiracula and minute tubercles behind the spiracula, distinct: tibiæ externally distinctly sulcate (*Haglund*). Long, barely 9; broad, $4\frac{1}{2}$ mill.

Reported from Rangoon.

Genus ASPIDESTROPHUS, Stål.

Ofvers. K. V.-A. Förh., xi, p. 232 (1854) : Freg. Eug. Resa, Ins., Hem., p. 219 (1859) ; Ofvers. l. c., p. 503 (1867) ; En. Hem. v, p. 34 (1876).

Body somewhat broadly subovate, subpubescent : head subquadrate, rather convex, somewhat deflexed towards the apex, spinose on both sides before the eyes ; juga scarcely longer than the tylus, obliquely truncate or sinuately truncate outwards at the apex, margins obtuse : rostrum reaching the posterior coxæ ; antennæ as long as the head and thorax together : the thorax transversely, a little sinuate anteriorly, subtruncate posteriorly, sides slightly rounded, crenated : scutellum as long as the abdomen but half its breadth, slightly sinuate on both sides towards the base, broadly rounded at the apex : feet moderate, basal and apical joints of tarsi equal in length, the intermediate very small (*Stål*).

126. ASPIDESTROPHUS MORIO, Stål.

Aspidestrophus morio, Stål, Ofvers. K. V.-A. Förh. p. 232 (1854) ; Freg. Eug. Resa, Ins., Hem. p. 219, t. 3, f. 1 (1859) ; Vollenhoven, Faune Ent. l'Arch. Indo-Néer. i, p. 43 (1863) ; Walker, Cat. Het. i, p. 74 (1867). Stål, En. Hem. v, p. 34 (1876) ; Distant, A. M. N. H. (5 s.) iii, p. 44 (1879).

Aspidestrophus lineola, Vollenhoven, l. c. p. 44, t. 3, f. 10 (1863) : Walker, l. c. iii, p. 521 (1868).

Black-piceous, roughly punctured, sordid ochraceous pubescent and silky ; an almost apical ring on the femora and the tarsi, sordid yellow-testaceous (*Stål*). Long, $7\frac{1}{2}$; broad, $4\frac{3}{4}$ mill.

♂. Head square, rounded in front ; head and pronotum punctured, of a very deep brown with a yellowish villosity, rather close : antennæ of the same colour : scutellum contracted obliquely on each side towards the base, pitchy brown, with a spare punctuation on the disc, closer towards the borders, weakly yellowish pilose : hemelytra of the same colour, rather strongly punctured, with some short, yellowish hairs towards the base of the costal border : beneath of a pitchy colour, the sternum with a yellowish villosity ; abdomen punctured, sparingly pilose ; each segment has a small round tubercle behind each stigma : feet of the same colour as the body, except a small patch beneath almost at the end of the femora, and the tarsi which are yellowish-white. (*Voll.*). Long, $7\frac{1}{2}$ mill.

Reported from Java, Borneo, Sumatra, Assam.

A. lineola, Voll. is smaller (6 mill.), of an almost black brown or black and is not so pubescent. A small line on the pronotum, a semi-circular subapical spot on the femora and apex of antennæ, yellow.

Div. HALYARIA, Stål.

En. Hem. v, p. 34 (1876):—Includes *Sciocorides* and *Halydes*, pt., Am. & Serv., Hist. Nat. Ins. Hém. p. 118, 103 (1843):—*Sciocoridae* and *Halydidae*, Dallas, List Hem. i, p. 130, 150 (1851).

Venter anteriorly on both sides with a short transversely rugose or strigose streak or with the venter furrowed: head long, rostrum reaching behind the last coxæ: antennæ remote from the eyes, third joint of the rostrum much longer than the fourth; eyes strongly prominulous.

Genus MECIDEA, Dallas.

List Hem. i, p. 139 (1851); Stål, Hem. Afric. i, p. 79, 132 (1864); Ofvers. K. V.-A. Förh. p. 58 (1872); En. Hem. v, p. 34, 37 (1876); Walker, Cat. Het. i, p. 179 (1867). Includes *Cerataulax*, Signoret, A. S. E. F. (2 s.), ix, p. 335 (1851).

Body somewhat elongate, somewhat depressed: head oblong-triangular, produced, somewhat convex, juga much longer than the tylus, anteriorly gradually narrowed and converging, or somewhat hiscent, lateral margins of the head not flattened; antenniferous tubercles entirely visible from above: bucculæ slightly elevated: eyes globose, rather prominulous; ocelli large, on a line with the base of the eyes: rostrum reaching the metasternum, inserted towards the apex of the head, second joint much longer than the third, about as long as the two apical taken together, third longer than the fourth: antennæ 5-jointed, stoutish, gradually stouter towards the base, first joint not reaching the apex of the head, second joint as long as or longer than the others, three-cornered and somewhat thickened towards the base, fourth joint longer than the fifth: anterior lateral margins of thorax obtuse, somewhat entire or very obsoletely crenulated, slightly sinuated: scutellum triangular, much narrowed at the apex, frena extended to a distance beyond the middle: hemelytra scarcely narrower than the abdomen; membrane with simple veins: mesosternum somewhat furrowed: feet moderate, femora unarmed at the apex; tibiæ somewhat furrowed; tarsi 3-jointed (Stål.).

127. MECIDEA INDICA, Dallas.

Mecidea indica, Dallas, List Hem. i, p. 139, t. 3, f. 3 (1851); Trans. Ent. Soc. (n. s.) ii, p. 9 (1852); Walker, Cat. Het. i, p. 179 (1851); Stål, En. Hem. v, p. 38 (1876).

♀. Pale yellow, thickly and finely punctured; eyes black: scutellum very long: membrane transparent, whitish: ventral stigmata brown: rostrum with the tip black: antennæ with the second joint very long, more than twice the length of the third, dilated towards the base; 4-5 joints shorter than the second, but longer than the third; fourth

longer than the fifth: antenniferous tubercles spinous on the outside (*Dallas*). Long, $10\frac{1}{2}$ mill.

Reported from Bengal.

Genus DALPADA, Am. & Serv.

Hist. Nat. Ins. Hém. p. 105 (1843); *Dallas*, List Hem. i, p. 153 (1851): *Stål*, Hem. Afric. i, p. 80, 101 (1864): *Walker*, Cat. Het. i, p. 218 (1867): *Stål*, Ofvers. K. V.-A. Förh. p. 508 (1867); En. Hem. v, p. 36, 43 (1876). Includes *Udana*, *Walker*, l. c. iii, p. 549 (1863).

Body oval or ovate: head scarcely or only very slightly convex: juga more or less distinctly sinuated at the apex outwards or obliquely truncated: bucculæ reaching the base of the head, angulated anteriorly, antennæ 5-jointed, slender, the first joint not or only very slightly extending beyond the juga, not longer than the marginal space of the head lying between the eyes and the place of insertion of the antennæ: eyes globose rather prominulous; ocelli in a line with the base of the eyes: rostrum extending a little beyond the last pair of feet, first joint not or only slightly extended beyond the bucculæ: anterior lateral margins of the thorax crenulated: membrane with about six simple, longitudinal veins: mesosternum carinated: venter slightly sulcated at the base: feet somewhat long; tibiæ broadly furrowed above, first pair sometimes dilated (*Stål*).

128. DALPADA OCULATA, Fabricius.

Cimex oculatus, *Fabr.*, Syst. Ent. p. 703 (1775); Spec. Ins. ii, p. 347 (1781); Mant. Ins. ii, p. 285 (1787); Ent. Syst. iv, p. 99 (1794).

Halys oculata, *Fabr.*, Syst. Rhyng. p. 181 (1803).

Dalpada aspersa, *Ellenr.*, Nat. Tijdssk. v. Ned. Ind. xxiv, p. 140, f. 8 (1862).

Dalpada oculata, *Dallas*, List Hem. i, p. 184 (1851); *Walker*, Cat. Het. i, p. 218 (1867); *Stål*, Hem. Fabr. i, p. 22 (1868); En. Hem. v, p. 43 (1876); *Distant*, J. A. S. B. xlviii (2), p. 37 (1879); A. M. N. H. (5 s.) iii, p. 45 (1879).

Grey: antennæ usually as long as the body, fuscous, with two white rings; head, fuscous, immaculate; pronotum greyish or variegated fuscous-testaceous, furnished posteriorly with a small, obtuse prominence; scutellum paler at the apex and at the base, on both sides with a very glabrous yellow spot: hemelytra concolorous; wings black: beneath yellow with a lateral line, fuscous, and the margins of the abdomen variegated fuscous and ferruginous: femora scabrous, pallid, black at the apex; tibiæ black (annulated yellow), first pair dilated at the apex; tarsi pallid, black at the apex, four posterior feet pale, geniculæ black (*Fabr.*). *Stål* observes that the specimens usually found in collections are clouded with fuscous-æneous above, a large smooth spot at the basal angles and nearly the third apical part of the scutellum, flavescent, and the anterior tibiæ are dilated. Long, 15—18 mill.

Reported from China, Siam, Cambodia, Tenasserim, Assam, Silhat Malacca, Penang, Java, Borneo, Sumatra, Celebes, Bouru, Philippines. The Indian Museum has specimens from Sikkim, Assam, Arakan, Tavoy.

129. *DALPADA VERSICOLOR*, Herr. Schäffer.

Halys versicolor, Herr. Schäff. Wanz. Ins. v, p. 76, t. 169 f. 520 (1839); vii, p. 60 (1844).

Dalpada versicolor, Dallas, List Hem. i, p. 185 (1851); Walker, Cat. Het. i, p. 220 (1876); Stål, En. Hem. v, p. 43 (1876); Lethierry, Ann. Mus. Gen. xviii, p. 648 (1883).

Yellow-fuscous, variegated with bronze or steel-green patches: head elongate, tylus extending beyond the juga which form outwards two obtuse angles: eyes large: antennæ slender: sides of pronotum weakly serrated anteriorly, angles acute: two subminiaceous spots at base of scutellum of which the apex is long and slender; membrane with eight veins of which the outer on each side is indistinct: margin of abdomen yellow-ochreous with steel-green spots: beneath pale orange with greenish pulverulent outer border and a black longitudinal spot posteriorly. Long, 14 mill.

Reported from Java, India, Burma.

130. *DALPADA CLAVATA*, Fabricius.

Cimex clavatus, Fabr., Ent. Syst. Suppt. p. 532 (1798).

Halys clavata, Fabr., Syst. Rhyng. p. 181 (1803).

Dalpada clavata, Dallas, List Hem. i, p. 184 (1851); Walker, Cat. Het. i, p. 219 (1867). Stål, Hem. Fabr. i, p. 22 (1868); En. Hem. v, p. 43 (1876); Distant, A. M. N. H. (5 s.) iii, p. 45 (1879).

Head porrect, unidentate on both sides: thorax not serrated but armed on both sides with a small dull-black clavate protuberance, two white dots at the apex: scutellum cinereous at the apex: hemelytra spotted fuscous: abdomen flavescent, margin black, spotted yellow (*Fabr.*).

Closely allied to *D. versicolor*, H. S., head a little longer, lateral angles of pronotum somewhat more obtuse, more thickened and flexed upwards; without the somewhat large, smooth, spot on the basal angles of the scutellum but at the base near the angles, a small smooth spot; dots more fuscous, less brassy (*Stål*). Long, 15—16 mill.

Reported from Tranquebar, Assam.

131. *DALPADA PILICORNIS*, Stål.

Dalpada pilicornis, Stål, En. Hem. v, p. 44 (1876).

♂. Stramineous; head, pronotum, hemelytra, and pectus, distinct.

ly and irregularly punctured brassy, an indistinct median streak and the apex of the lateral angles of the pronotum less densely punctured, the lateral angles of the pronotum rather prominulous, neither tumid nor rugose; scutellum with a somewhat large, smooth, oval spot on the basal angles, third apical part and discoidal streak somewhat smooth, sparingly punctured; membrane greyish, veins fuscous: connexivum aeneous, segments banded with yellow; venter testaceous, sparingly punctured fuscous-aeneous, anteriorly subsulcate, extreme angles of segments, aeneous; antennæ, rostrum and feet pilose, the feet sprinkled with fuscous; second joint of the antennæ shorter than the third: rostrum somewhat extended beyond the last coxæ; tylus and juga equally long. ♂ with the genital segment strongly tri-impressed, costate between the impressions (*Stål*). Long, 10; broad, 5 mill.

Reported from the Nilgiris (Madras).

132. DALPADA CONCINNA, Westwood.

Halys concinna, Westwood, Hope, Cat. Hem. i, p. 23 (1837).

Dalpada concinna, Stål, En. Hem. v, p. 44 (1876.)

Greyish-luteous, punctured with fuscous: two black lines between the eyes; thorax anteriorly serrate; posterior angles prominulous, black; basal angles of scutellum pallid; membrane hyaline, longitudinal veins fuscous, with some oblong dots scattered between; feet concolorous: sides of abdomen with black spots, a single small white spot in the middle. (*Westw.*) Long, body 14—14½ mill.

Reported from China, India. Dallas unites this with *D. clavata*, Fabr.

133. DALPADA NIGRICOLLIS, Westwood.

Halys nigricollis, West., Hope, Cat. Hem. i, p. 22 (1837) (♂).

Halys obscura, West. l. c. p. 22 (♀): Dallas, l. c. p. 184 (1851).

Dalpada nigricollis, Dallas, List Hem. i, p. 184 (1851); Walker, Cat. Het., i, p. 219 (1867). Stål, En. Hem. v, p. 44 (1876).

♀. Greyish luteous, everywhere punctured with brassy-black: slender, longitudinal, median line on the pronotum and four minute dots, luteous; sides of pronotum hardly serrate, posterior angles subprominulous; basal angles of scutellum, whitish: membrane pallid, with six fuscous longitudinal veins and the same number of intermediate longitudinal fuscous dots: feet luteous, dotted black: base of fourth and fifth joints of the antennæ, white. (*Westw.*) Long, 17—18 mill.

Reported from Bengal.

♂. Smaller than the ♀: the head and the thorax, blackish: antennæ fuscous, second joint incurved; sides of thorax entire, posterior

angles subacute, prominulous, black: scutellum fuscous, punctured luteous, basal angles luteous; membrane whitish, the longitudinal veins slender with several fuscous dots strewn between them: abdomen fulvous with a broad lateral band fuscous, feet luteous, punctured fuscous (*Westw.*). Long, 12—13 mill.

Reported from Nepál, India.

134. DALPADA AFFINIS, Dallas.

Dalpada affinis, Dallas, List Hem. i, p. 185 (1851); Walker, Cat. Het. i, p. 219 (1867); Stål, En. Hem. v, p. 44 (1876).

♀. Closely allied to *D. nigricollis*, *Westw.*; body broader, head longer, lateral angles of pronotum tuberculose, large, obtuse, whitish at the apex: scutellum immaculate at the base, somewhat broad at the apex: membrane fuscous, veins more obscure: sides of the abdomen variegated with fulvous and black: antennæ fulvous, two last joints, fuscous (*Westw.*). Long, 17—18 mill.

Reported from N. India.

135. DALPADA VARIA, Dallas.

Dalpada varia, Dallas, List Hem. i, p. 185 (1851); Walker, Cat. Het. i, p. 220 (1867); Stål, En. Hem. v, p. 45 (1876); Distant, J. A. S. B. xlviii, (2) p. 37 (1879); A. M. N. H. (5 s.) iii, p. 45 (1879).

♂. Greyish-testaceous, punctured black; lateral angles of the pronotum subtuberculate; head, pronotum, scutellum, corium and margins of abdomen, variegated greenish-aeneous: scutellum with two whitish spots at the base; corium rufescent at the apex; membrane fuscous, subhyaline, veins fuscous and the basal spot black: abdomen beneath, testaceous, sides punctured and subapical spot, black: feet and rostrum testaceous (*Westw.*). Long, 18-18½ mill.

Reported from Silhat, Assam: when the pubescence is removed the apex of the scutellum is broadly luteous. The Indian museum has a specimen from Tenasserim.

136. DALPADA ALTERNANS, Westwood.

Halys alternans, Westwood, Hope, Cat. i, p. 22 (1837).

Closely allied to *D. nigricollis* (♀), *Westw.*: differs especially in having the sides of the pronotum almost straight, oblique, posterior angles not prominulous: membrane with six longitudinal veins, fuscous, extended almost to the apex, the three internal connected at the base; internal space fuscous; feet with fuscous and luteous rings: sides of abdomen with abbreviated transverse, black striæ (*Westw.*). Long, 16—17 mill.

Reported from Bengal.



Atkinson, Edwin Thomas. 1888. "XII. - Notes on the Indian Rhynchota, Heteroptera, No. 2." *The journal of the Asiatic Society of Bengal* 56(II), 145–205.

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