

LIV.—*On a Collection of Hemiptera Heteroptera from Japan. Descriptions of various new Genera and Species.* By JOHN SCOTT.

[Concluded from p. 365.]

Family **Lygæidæ**.

Genus **AROCATUS**, Spin.

Arocatus melanostoma.

Red, clothed with very fine depressed yellowish hairs.

Head red: *crown* with a large round black spot; *face*, apex of the side and central lobes black. *Antennæ* and antenniferous tubercle black. *Eyes* black, sometimes reddish. *Rostrum* black.

Thorax.—*Pronotum* red, deeply punctured, and with a broad Λ -shaped black patch not reaching to the anterior or posterior margin. *Scutellum* black, with a strongly raised red central keel. *Elytra* red, unpunctured, somewhat shagreened: *clavus* black, base and the margin at the apex next the scutellum red: *corium* black; anterior and posterior margins broadly red, apex of the latter narrowly black. *Membrane* piceous. *Sternum* black, deeply punctured, clothed with very fine, depressed, yellowish hairs; orifice of the odoriferous sac red. *Legs* black.

Abdomen above red; beneath red, with a broad black streak along the sides; last segment, as also the genital segments, black. *Connexivum* red.

Length 3–3½ lines.

Genus **ISCHNODEMUS**, Fieb.

Ischnodemus spinicaput.

Head and *pronotum* dull black, thickly punctured, the former with two spines at the base of the face, longer in the male than the female; an acute tubercle in front of each eye, and (in the male) the side lobes of the face testaceous, produced in front, flattened, separate. *Elytra* pale testaceous.

Head black, thickly punctured: *crown* convex: *face* at the base with two long stout spines, and in front of each eye an acute tubercle; side lobes testaceous, produced in front to about in a line with the basal fourth of the second joint of the antennæ. *Antennæ* black, stout, thickly punctured. *Eyes* purplish. *Ocelli* deep red.

Thorax.—*Pronotum* dull black, thickly punctured; anterior margin frequently brown; posterior margin and hinder angles

broadly brown or brownish testaceous, more sparingly punctured than the disk. *Scutellum* black or pitchy black, punctured, with a transverse and apical longitudinal keel, forming a T-shaped character; apex narrowly brown. *Elytra* pale testaceous: *clavus* and *corium*, margins and nerves on both sides punctured, in the latter the space between the inner margin and the nerve pale, almost transparent. *Membrane* pale yellowish white, nerves slightly darker. *Legs* pitchy brown: *thighs* at the apex pale brown: *tibiae* pale brown: *tarsi* brownish yellow: *claws* black.

Abdomen above almost flat, last segment purplish. *Connexivum* pale brownish testaceous, almost vertical.

Female similar to the male in all respects, except in the length of the spines and the side lobes of the face.

Length $1\frac{3}{4}$ –2 lines.

Genus CHAULIOPS*.

Head short, wider across the eyes than the front of the pronotum: *crown* and *face* almost perpendicular, central lobe of the latter slightly widest at the apex; side lobes shorter than the central lobe; underneath each eye a stout spine. *Antennae*, first joint stout, almost its entire length extending beyond the face; second and third thin, second stouter than the third and a little longer than the first; third two thirds the length of the second; fourth fusiform, about as long as the first. *Eyes* large, semiglobose, placed on a longish, thick peduncle. *Ocelli* minute, almost concealed beneath the anterior margin of the pronotum. *Rostrum* stout, reaching to the third pair of coxae.

Thorax.—*Pronotum* large, trapezoidal, nearly twice as broad on the posterior margin as on the anterior; lateral margins slightly waved; hinder angles rounded and raised into a callus; posterior margin nearly straight across the scutellum, from thence to the hinder angles rounded; disk longitudinally and transversely convex, considerably deflected from in front of the calli to the anterior margin. *Scutellum* large, triangular, equilateral, with a central longitudinal channel; apex slightly raised. *Elytra*: *clavus* narrow, apparently without a middle nerve: *corium*, anterior margin constricted in the middle; posterior margin somewhat S-shaped. *Membrane* with five nerves; first and third exterior nerves almost joined at the base; second joined to the third a little below the base; fourth with a semicircular bend at the base, then concave interiorly next the apex; fifth slightly waved. *Sternum* deep, with a

* χαύλιος, projecting; ὄψ, eye.

rostral channel. *Legs*: *thighs* somewhat stout, narrowest at the base, with a tooth on the underside about one third their length from the apex; *tarsi* (third pair), first and third joints of about equal length; second shortest.

Abdomen deep, convex; ♀, upper margin of the last segment produced posteriorly and pointed.

Chauliops fallax.

Minute. Pale brownish or brownish luteous. *Pronotum* somewhat thickly and deeply punctured. *Scutellum* black, with a short white streak at the basal angles. *Corium* pale brownish, somewhat greyish at the base next the anterior margin; disk near the apex of the clavus with a small black spot; posterior margin broadly piceous.

Head: *crown* dark brown; *face* reddish brown. *Antennæ* yellow, first joint entirely and apex of the fourth brown. *Eyes* piceous or black, placed on a peduncle stretching forward obliquely in the shape of a wide-spread V. *Rostrum* brownish yellow, last joint black.

Thorax.—*Pronotum* pale brownish or brownish luteous, somewhat thickly and deeply punctured, in front with a black transverse band, interrupted by a pale central longitudinal line. *Scutellum* black, with a short white streak at the basal angles; disk with a narrow, deep, central channel not reaching to the base, its margins acute. *Elytra* pale brownish or brownish yellow: *clavus* with a single row of brown punctures: *corium* with a row of punctures next the claval suture; disk sparingly dark-brown punctured next the base, posteriorly with some seventeen to twenty punctures in short irregular oblique rows; near the apex of the clavus a small black spot; posterior margin broadly piceous, anterior margin from the base to the constriction somewhat greyish. *Membrane* transparent; disk with one or two more or less distinct brownish spots. *Sternum* piceous or pitchy brown, sides punctured. *Legs* yellow: *thighs* brown, basal half pale yellow or yellowish white: *tibiæ* yellow, with a broad brown band at the base, the lower half of which is piceous or black: *tarsi* yellow: *claws* brown.

Abdomen, above dark brown, beneath pitchy black or brown; posterior margin of the segments with a row of fine black punctures. *Connexivum* almost perpendicular, greyish yellow; posterior margins of the segments broadly pitchy brown, except the last (in the female), where the spot is in the middle.

Length $1\frac{1}{4}$ line.

A remarkable genus, which at first sight reminds one of a minute species of *Nysius* with the eyes of *Henestaris*, between which genera it apparently stands. Independently of size, the shape of the posterior margin of the corium and the toothed thighs will separate it at once from either of these.

Genus TROPISTETHUS, Fieb.

Tropistethus antennatus.

Black, shining, clothed with fine yellow subdepressed hairs. *Antennæ* black, last joint canary-yellow. *Clavus* and *corium* pale brownish ochreous, the latter posteriorly brown, irregularly punctured. *Membrane* abbreviated, pale fuscous, with a darker triangular patch at the base, its lower margin bordered with white.

Head black, shining: *face*, central lobe red or red-brown. *Antennæ* black, terminal joint canary-yellow. *Eyes* purplish brown. *Rostrum* brownish ochreous, apex black.

Thorax.—*Pronotum* black, hinder angles and generally a portion of the posterior margin adjoining pale brownish ochreous. *Scutellum* black, dull; disk flat; apex very narrowly brownish. *Elytra*: *clavus* pale brownish ochreous, with three rows of brown punctures: *corium* brown, with a pale triangular patch extending from the base to the middle of the anterior margin, its inner angle reaching on to the disk beyond the first nerve, down the exterior margin of which is a row of fine brown punctures; next the inner margin a narrow pale streak extending almost from the base to in a line with the apex of the scutellum; disk somewhat thickly punctured posteriorly; posterior margin dark brown. *Membrane* abbreviated, pale fuscous, at the base a darker triangular patch extending from the apex of the anterior margin of the corium to beyond the middle of the posterior margin, having its lower side with a white border. *Sternum* black. *Legs* brown; *thighs*, apex pale; *tarsi* yellow or pale brownish yellow.

Abdomen beneath black, shining; last genital segment rufous.

Length $1\frac{1}{4}$ line.

The yellow terminal joint of the antennæ will separate this species from all others of the genus.

Genus LASIOSOMUS, Fieb.

Lasiosomus pallipes.

Head, *pronotum*, and *scutellum* black, shining. *Antennæ*: first three joints pale brownish yellow, base of the second

narrowly brown, fourth brown, base narrowly pale. *Elytra* testaceous, brown-punctured: *corium* posteriorly with a large triangular brown patch. *Legs* yellow.

Head black, shining, convex. *Antennæ* pale brownish yellow, base of the first and second joints narrowly brown; fourth brown, base narrowly pale brownish yellow. *Eyes* purplish. *Rostrum* stout, brown, apex black.

Thorax.—*Pronotum* black, shining, very finely punctured posteriorly; hinder angles pale brownish testaceous or clear brown. *Scutellum* black, finely but distinctly punctured; apex sometimes castaneous. *Elytra*: *clavus* testaceous, with three rows of brown punctures; scutellar margin narrowly brown, posterior margin internally narrowly brown. *Corium* testaceous, nerves and disk posteriorly brown-punctured, and with a large triangular brown patch extending from about in a line with the apex of the scutellum to the posterior margin. *Membrane* abbreviated, pale fuscous yellow, base brownish yellow. *Sternum* black, shining, punctured. *Legs* testaceous: *thighs*, base of all the pairs piceous.

Abdomen underneath black, shining, last segment reddish-brown.

Length $1\frac{1}{2}$ line.

Differs from *L. enervis*, the only other species I know, in the puncturing, and by the large triangular brown patch on the elytra and piceous base of the thighs.

Genus DIPLONOTUS.

Diplonotus rusticus.

Black; elytra grey, with piceous punctures.

Head black. *Antennæ* yellowish or pale brownish yellow; first joint piceous, base very narrowly and apex broadly yellow; fourth brown, paler at the base. *Eyes* black. *Rostrum* brownish yellow; first, third, and fourth joints brown.

Thorax.—*Pronotum* black, collar more or less distinctly brown; between the constriction and the posterior margin reddish brown, thickly punctured, with a black central line and a more or less defined black patch on either side; margins narrowly yellowish. *Scutellum* black, punctured, and with a reddish-brown Y-shaped mark; extreme apex yellowish white. *Elytra* grey, with piceous punctures. *Clavus* with the punctures more or less thickly disposed towards the outer margin in different individuals. *Corium*: anterior margin pale yellowish white, apex black, edge pitchy black, and a little way before the apex is a very short longitudinal line composed of about three confluent punctures; inner posterior angle with a somewhat tri-

angular greyish white patch ; the punctures in the space from the latter to the base more or less confluent in different individuals. *Membrane* white, the spaces between the nerves at the apex more or less broadly fuscous. *Sternum* black. *Prosternum* round the base of the legs brown. *Legs* black or dark piceous : *coxae*, first pair black, shining, second and third pitchy brown : *fulcra*, first pair dark pitchy brown, second and third yellow : *thighs*, first pair black or dark piceous, apex yellow ; second and third yellow, more or less broadly dark piceous before the apex, second always less broadly than the third : *tibiae* yellow, apex of the first pair and base of the third fuscous or blackish : *tarsi* yellow, apex of the first joint and third joint entirely brown.

Abdomen, underside black.

Length $2-2\frac{1}{4}$ lines.

Somewhat allied to *D. luridus* ; but it is much broader than that insect, and has besides differently coloured antennæ and legs.

Diplonotus hemipterus.

Black, not shining. *Elytra* grey, with piceous punctures. *Membrane* rudimentary.

Head black. *Antennæ* pale brownish yellow ; first joint, basal half black ; third at the apex broadly and fourth entirely black ; sometimes the apex of the second joint is narrowly black. *Eyes* black. *Rostrum* piceous.

Thorax.—*Pronotum* black, anterior half of the collar generally brown, posterior angles and margin more or less broadly brown. *Scutellum* black, with a few punctures on the sides ; apex narrowly greyish white. *Elytra* grey, with piceous punctures ; anterior margin pale yellowish white, next the apex a black spot, apex narrowly pale yellowish white ; a little before the apex is a small piceous spot formed by the confluence of a few of the punctures, not reaching the outer edge of the anterior margin ; inner posterior angle with a somewhat triangular greyish white patch, in which there are generally one or two piceous punctures, and above the patch frequently several of the punctures are confluent and form a dark blotch. *Membrane* rudimentary, black ; apical margin with two white or whitish spots. *Sternum* black ; posterior margin of the *pro-* and *metanotum* narrowly brown. *Legs* black : *coxae* black : *fulcra* of all the pairs yellow : *thighs*, first pair black, base narrowly and apex yellow ; second and third pale brownish yellow, apical half more or less dark brown : *tibiae* yellow : *tarsi* yellow, third joint brown.

Abdomen black : *connexivum* brown.

Length $2\frac{1}{4}-2\frac{1}{2}$ lines.

Readily distinguished from the other species by its elongate appearance, the different form of the pronotum, and the rudimentary membrane.

Diplonotus luridus.

Pale brownish yellow; elytra finely brown-punctured.

Head black. *Face*, apex of the central lobe more or less brown. *Antennæ* yellow; first joint somewhat brown at the base; third, apex reddish; fourth, apical two thirds black. *Eyes* piceous. *Rostrum* yellowish, apex piceous.

Thorax.—*Pronotum* black; collar brownish yellow, with a transverse row of punctures; between the constriction and the posterior margin brownish yellow, somewhat thickly brown-punctured, two longitudinal keels and the posterior angles paler. *Scutellum* black, with a central keel, extending from the middle to the apex, punctured exteriorly, the central keel and two side pieces forming a Y-shaped patch more or less distinctly brown. *Elytra* pale brownish yellow. *Clavus* with three rows of brown punctures. *Corium*: anterior margin pale yellowish white, with two short black streaks—one at the apex, the other almost in a line with the apex of the clavus; at the inner posterior angle an unpunctured triangular patch. *Membrane* fuscous, nerves white; on the anterior margin, a little way below the apex of the corium, is a small black spot, and exteriorly, at the base of the second nerve from the inner margin, is another; the spaces between the nerves next the apex more or less white, in which are a few minute fuscous spots. *Sternum* black or pitchy black, finely punctured. *Legs* yellow: *thighs*, first pair reddish brown, apex yellowish, second and third somewhat brownish yellow: *tarsi* yellow, apex of the third joint brown.

Abdomen underneath more or less clear chestnut-brown.

Length $2\frac{1}{2}$ lines.

At first sight of this insect one is reminded of *Plociomerus luridus*; but its narrower and more elongate form, longer head, thicker anterior thighs, and different number of teeth on the latter easily separate them.

There are only two specimens of this species in the collection.

Diplonotus lateralis.

Black, not shining; anterior margin of the elytra yellowish white.

Head black, finely shagreened. *Antennæ* brown; first joint darker than the second; third black, base dark brown; fourth black, basal third yellowish, base with a narrow black

ring. *Eyes* black. *Rostrum* yellow, first joint pitchy brown, apex piceous.

Thorax.—*Pronotum* black; collar with a punctured central channel; between the constriction and the posterior margin coarsely punctured; posterior angles more or less distinctly dark brown. *Scutellum* black, extreme apex yellow or brownish yellow, sides with a few coarse punctures. *Elytra* pitchy brown. *Clavus* pitchy brown, margins paler. *Corium* pitchy brown; anterior margin yellowish white from the base to a little before the apex, where it widens and extends for a little way upon the disk, forming an irregular-shaped blotch; nerve, from the base to about the middle, yellowish; between the inner edge of the anterior margin and the nerve towards the base, more or less mottled with yellowish; a little below the inner posterior angle a yellowish spot. *Membrane* abbreviated, fuscous brown; nerves white; a small patch at the apex, and a transverse streak extending from the apex of the corium to about midway across the disk, nearly in a line with the sutural margin, white. *Sternum* black-punctured. *Legs* yellow: *thighs*, first pair pitchy brown, shining, apex yellow; second and third yellow, the latter before the apex broadly brown: *tibiæ* and *tarsi* yellow, apex of the first and third joints somewhat brown.

Abdomen black.

Length 2–2 $\frac{1}{4}$ lines.

Genus METOCHUS*.

Elongate.

Head longer than broad. *Crown* convex transversely. *Face* convex. *Antennæ*: first joint stoutest, somewhat clavate, not half the length of the second; second joint longest; third and fourth subequal. *Rostrum* reaching to between the middle pair of coxæ.

Thorax.—*Pronotum* very much constricted beyond the middle; anterior margin with a narrow collar; sides with a narrow margin; posterior margin slightly concave; posterior angles raised. *Scutellum* triangular, elongate. *Elytra*: anterior margin somewhat concave near the base. *Membrane*: disk with five nerves, the first two approximating at the base and distinctly waved, third about midway between the second and fourth, curving round near the base towards the fourth and fifth, which are united near the apex of the corium. *Sternum*: *prosternum* with a faint central keel, depressed from the anterior margin to a little before the middle, from thence to the

* μέτοχος, a participator.

base of the first pair of legs gently rounded; posterior margin in the centre considerably recurved. *Legs*: *coxæ*, first pair in front armed with two teeth: *thighs*, first pair incrassated, fusiform, with two rows of teeth on the underside, each row consisting of seven or eight; three of the teeth on the inside row longer than any of the others, and the one next the apex longest: *tibiæ* straight; first pair dilated at the apex; inner margin with four or five spines: *tarsi*, first joint of the third pair more than twice the length of the second and third together, which are very short.

The shape of the head and pronotum, and form and arrangement of the nerves of the membrane, associate this genus with *Diplonotus* more than with any other I know; but the toothed *coxæ*, and different number and disposition of the teeth on the anterior thighs, and straight anterior *tibiæ* are sufficiently characteristic to separate the one from the other.

Metochus abbreviatus.

Dull black, somewhat thickly punctured.

Head black, with a few longish erect pale hairs; very finely punctured, except a small space round the ocelli. *Face*: central lobe produced considerably in front of the side lobes. *Antennæ* black; second joint as long as the third and fourth together; base and apex of the first and second joints and base of the third very narrowly brownish yellow; fourth, basal half yellow or yellowish white, except a narrow black ring at the base. *Eyes* black. *Ocelli* red. *Rostrum* yellowish or pale brownish yellow, fourth joint piceous.

Thorax.—*Pronotum* black; anterior portion very convex, finely and sparingly punctured; anterior margin with a narrow collar, joined to which is a very short, central, longitudinal keel; disk posteriorly coarsely punctured, more or less mottled with brown, and with a distinct central keel; sides at the constriction much depressed, the margin somewhat acute, and terminating in a fovea before reaching the posterior angle, so that when viewed from above, in certain positions, it appears to be notched; posterior angles raised into an unpunctured callus. *Scutellum* black, irregularly punctured; apex yellow. *Elytra* black. *Clavus*: inner margin and nerve interiorly with a row of black punctures, between which is a central row extending from about in a line with the apex of the scutellum to the lower edge of a yellow spot near the base; lower half of the scutellar margin yellowish; claval suture yellow, and with a row of punctures on either side. *Corium* yellowish at the base, black-punctured; anterior margin yellow for a

little more than half its length, the edge piceous, exteriorly minutely multiindentate, thereby giving it a submoniliform appearance; the two inner nerves with a row of punctures exteriorly, and between them another row placed at wide intervals, and terminating before reaching the base; on the innermost nerve are two yellow streaks—one near the apex, the other about in a line with the middle of the scutellum; between the two inner nerves are two yellow spots—one at the apex, the other midway between the streaks above mentioned; inner edge of the anterior margin with a row of black punctures, between this and the nerve more or less clear yellowish or brownish yellow, as far as about the middle of the claval suture; next the apex a large irregular yellow patch, in which are a few black punctures; posterior margin black, the colouring widest and irregular interiorly next the anterior margin; apex of the latter very narrowly yellow. *Membrane* abbreviated, pitchy brown, with a small yellow spot at the apex of the anterior margin of the corium, and another on each of the three adjoining nerves; next the apex a somewhat semicircular yellow streak. *Sternum* black, thickly punctured. *Legs* black: *coxae*, outer edge in front with two teeth, the anterior one largest: *fulcra* yellow, apex narrowly piceous: *thighs* black; first pair narrowly yellow at the base, and with two rows of teeth (seven to eight in each row) on the underside; second and third pairs broadly yellow at the base; before the apex of the latter, on the underside, are two long black spinose hairs: *tibiae*, first and third pairs brown or pitchy brown, second yellowish; apex of all the pairs piceous: *tarsi* piceous; base of the first joint narrowly and second entirely yellow.

Abdomen black. *Connexivum* black; fourth and fifth segments with a yellow spot, that on the former segment largest.

Length $4\frac{1}{2}$ lines.

There are three specimens in the collection.

Genus PROSOMÆUS*.

Elongate, narrow.

Head long, somewhat pointed in front. *Face*: central lobe produced beyond the side lobes. *Antennæ*: first joint stout, reaching for half of its length beyond the end of the face; second twice and a half as long as the first, more slender, apex somewhat clavate; third clavate, about two thirds the length of the second; fourth spindle-shaped, as long as the third. *Eyes* small. *Rostrum* scarcely reaching to the second pair of *coxae*; first joint not so long as the head.

* προσόμοτος, resembling.

Thorax.—*Pronotum* considerably deflected from the posterior to the anterior margin, the latter with a narrow collar; disk with a transverse channel; lateral margins constricted before the middle, to which point they are slightly rounded, from thence posteriorly straight and gradually widening; hinder angles raised into a callus; posterior margin somewhat deeply concave across the scutellum, from thence rounded to the hinder angles. *Scutellum* slightly elongate, with a short apical and two side keels, forming a Y-shaped character. *Elytra*: *clavus* deflected to the corium. *Corium*: anterior margin concave before the middle. *Membrane* with four nerves, the two inner nearer to each other than the two outer ones, free at the base, first curved inwardly and then outwardly; the two outer ones approximate at the base, then diverge, and curve inwardly. *Legs*: *thighs*, first pair incrassated, spindle-shaped, and with four teeth on the underside, the two middle ones long; second and third pairs thin at the base, clavate next the apex; third stouter than the second, and with two teeth on the underside: *tibiae*, first pair widened inwardly at the apex: *tarsi*, third pair, first joint longest, about one third longer than the second and third together.

The genus *Paromius*, Fieber, is the nearest with which I can associate the above; but it has the following differences, viz. the elytra slightly contracted before the middle, the position and number of the teeth on the anterior thighs, and, in addition, the two teeth on the underside of the third pair.

Prosomæus brunneus.

Brown; pronotum somewhat thickly, and elytra sparingly dark-brown punctured.

Head dull black or pitchy brown, very finely wrinkled transversely, and sparingly clothed with fine, depressed, pale yellowish hairs. *Face*: central lobe reddish brown. *Antennæ* brownish yellow, clothed with short yellow hairs; second joint red at the apex; third, apical half red; fourth pitchy red, base broadly and the extreme apex red. *Eyes* reddish brown. *Ocelli* bright red. *Rostrum* pale brownish yellow, last joint (except the base) piceous.

Thorax.—*Pronotum*, collar fuscous brown, from thence to the transverse channel dull black, very finely and sparingly punctured: posterior portion brown, with coarsish piceous punctures. *Scutellum* fuscous, black-punctured, extreme apex white, apical and side keels dull reddish brown. *Elytra*: *clavus* brown, the space between the suture and the nerve white, except the apex; margins and nerve on both sides

thickly and regularly dark-brown punctured, between the inner margin and the nerve an irregular row of punctures: *corium* white; sutural margin and the adjoining nerve exteriorly thickly and regularly dark-brown punctured; apex of the space enclosed between these with two or three remote punctures; disk with an irregular, transverse, thickly punctured brown band before the apex, broadest at the anterior margin, and terminating before reaching the inner posterior angle; anterior margin thickly and finely dark-brown punctured from the base to the lower margin of the band; posterior margin dark brown, apex next the anterior margin black. *Membrane* brown, with an irregular darker cloud extending from the apex of the *corium*, and widening until it reaches the inner margin. *Sternum* pitchy black or black: *prosternum* thickly and somewhat finely punctured: *mesosternum* more sparingly and coarsely punctured: *metasternum* thickly punctured, the punctures similar to those on the *mesosternum*. *Legs* pale brownish yellow: *coxae*, first pair brown, second and third clear brown, apex yellow: *fulcra* of all the pairs yellow: *thighs* clear brown; base of the first pair narrowly, second and third broadly yellow: *tarsi* pale brownish yellow, third joint dusky brown.

Abdomen: underside brown.

Length $2\frac{1}{2}$ –3 lines.

Genus GYNDES.

Gyndes albomarginatus.

Black, dull. *Head* and *pronotum* clothed with a fine somewhat golden pubescence, intermixed with long erect dark hairs; anterior margin of the elytra white from the base to beyond the middle.

Head black, somewhat shagreened. *Antennæ* black. *Eyes* dark pitchy brown. *Rostrum* pitchy black, shining; first joint black; apex of the first, second, and third joints narrowly pitchy red; second, third, and fourth joints with longish erect dark hairs.

Thorax.—*Pronotum* black; between the constriction and the posterior margin thickly, coarsely, and irregularly punctured. *Scutellum* black, with long, erect, dark hairs; from the middle to the apex is a central keel, on either side of which are a few deep punctures; anterior portion finely punctured. *Elytra* piceous, with a few erect dark hairs not so long as those on the head, pronotum, or scutellum: *clavus* piceous, base and a patch before the apex black: *corium* piceous to beyond the middle, beyond which is a broad transverse band extending from the anterior to the interior margin, bounded

posteriorly by a white lunate patch; anterior margin white to beyond the middle, where the colour is widest; edge narrowly black; posterior margin black; apex and a round spot a little below the inner posterior angle white. *Membrane* black, apex with an oval white patch. *Sternum* black: *prosternum* finely wrinkled on the sides, and sparingly and delicately punctured, anteriorly as far as the channel somewhat deeply punctured. *Legs* black: *coxae*, second and third pairs at the apex white: *thighs* black; first pair clothed with long erect dark hairs; second and third pairs broadly white at the base, all the pairs at the apex narrowly yellowish white or brownish: *tibiae* black: *tarsi* piceous, second joint palest.

Abdomen black, beneath clothed with a somewhat golden pubescence: *connexivum* black; fifth and sixth segments with a yellowish-white patch exteriorly.

Length 3 lines.

Genus LETHÆUS, Dallas.

Lethæus Dallasi.

Piceous, shining, finely punctured.

Head dark piceous or black, very finely and thickly punctured above and beneath, except a narrow space next the basal margin. *Antennæ* pale pitchy brown; apical half of the second joint, apical three fourths of the third, and the fourth entirely (except a narrow white ring at the base) pitchy black; extreme apex of the second and third joints white. *Eyes* dark brown. *Ocelli* red. *Rostrum* brownish yellow, apex darker.

Thorax.—*Pronotum*, except the callosities, thickly and finely punctured, the punctures appear slightly elongated, as if made obliquely; anterior portion pitchy black; posterior pitchy brown; collar, lateral margins, and posterior angles brownish yellow. *Scutellum* pitchy black, depressed in the middle and very finely punctured; sides sparingly punctured. *Elytra* pale, almost white, finely brown-punctured: *clavus* with four rows of brown punctures; base with a dark brown patch; between the inner margin and the nerve two elongate pale spots separated by a brownish cloud: *corium* near the base, between the claval suture and nerve, a triangular brown patch; anterior margin beyond the middle with a broad irregular-shaped brown patch, darkest exteriorly, and widening as it approaches the nerve; apex brown; the area enclosed between the bifurcation of the nerve brown, with a pale patch extending somewhat obliquely in the direction of the inner posterior angle; nerve pale. *Membrane* pale fuscous brown, nerves darker; the

space between the first and second exterior nerves and third and fourth interior whitish. *Sternum* pitchy brown, shining, finely punctured. *Legs* pitchy brown: *thighs*, apex pale brownish yellow or yellowish: *tibiae* pale brownish yellow or yellowish, spines on the second and third pairs dark brown: *tarsi* yellowish, apex of the joints sometimes narrowly brownish.

Abdomen beneath pitchy brown or castaneous, shining, very finely punctured.

Length $3\frac{1}{4}$ – $3\frac{1}{2}$ lines.

Genus CALYPTONOTUS, Dougl. & Scott.

(Subgenus *Raglius*, Stål.)

Calyptonotus albomaculatus.

Grey, yellowish, or whitish, black-punctured. *Pronotum*, anterior half black. *Corium* with a black spot at the inner angle of the posterior margin. *Membrane* with numerous small white spots on the disk.

Head black. *Antennae* black; first joint, apical half brown, with a few long nearly erect stout black hairs; fourth with a yellow ring before the base. *Eyes* black. *Rostrum* pitchy black.

Thorax.—*Pronotum* anterior half black, not extending on to the reflexed lateral margins, except at the anterior angles; lateral margins pale yellowish or whitish, extreme edge black; inner margin of the raised posterior angles black; posterior margin dark fuscous. *Scutellum* black, punctured on the sides; before the apex two short longitudinal brown streaks; apex yellowish white. *Elytra* grey-yellowish or whitish, black-punctured: *clavus* with a black spot at the base; apex very narrowly black: *corium* posteriorly with a somewhat rhomboidal black spot; inner angle of the posterior margin narrowly pale; anterior margin at the apex and the inside of the posterior margin narrowly black. *Membrane* dark fuscous, with a number of minute white spots scattered over the disk; sutural margin black; apex narrowly white. *Sternum* dull black: *prosternum*, anterior margin brown, posterior fuscous white; outer posterior angle yellowish or whitish: *metasternum*, posterior margin white. *Legs* black, base of all the pairs exteriorly white: *coxae* black, apex of the second and third pairs white: *fulcra*, first pair black, base brownish; second and third yellowish white, apex narrowly black: *thighs*, first pair black, second and third broadly yellowish or yellowish white at the base: *tibiae*, first and second pairs brown, outer margin paler; apex pitchy black or black; third pitchy

black or black: *tarsi* piceous, base of the first joint narrowly brownish.

Abdomen beneath black.

Length 3 lines.

Very closely allied to *Pachymerus pineti*, H.-Sch.

Family Pyrrhocoridæ.

Genus PYRRHOCORIS, Fall.

Pyrrhocoris coriaceus.

Male pale luteous, *female* reddish brown; both sexes thickly punctured with piceous.

Head black, thickly punctured, with a longitudinal luteous central line. *Crown* more or less brown on either side the base of the central lobe of the face, and with a short, shallow, black, central channel. *Antennæ* pitchy black. *Eyes* reddish brown or piceous. *Rostrum* piceous.

Thorax.—*Pronotum* luteous or reddish brown, coarsely punctured, except two somewhat shining, trapezoidal, black patches a little before the middle; these are separated by a luteous line, and have also a pale margin. *Scutellum* luteous or reddish brown, with piceous punctures and generally a black patch in the centre. *Elytra* luteous or reddish brown, with piceous punctures, the punctures much finer than those on the pronotum: *corium* with two minute piceous spots—one almost in a line with the middle of the scutellum, the other almost in a line with the apex of the clavus (in the female these are very indistinct). *Membrane* imperfectly developed, pale or dark luteous, with piceous nerves. *Sternum* black, shining, delicately punctured: *prosternum*, anterior and posterior margins yellowish white: *meso-* and *metasternum*, posterior margins whitish. *Legs* dark piceous, base exteriorly white: *coxæ* piceous, apex whitish: *fulcra* pale brownish yellow: *thighs* dark piceous, somewhat shining, apex narrowly whitish or yellowish: *tibiæ* whitish or yellowish: *tarsi* pale brownish.

Abdomen above more or less pale; beneath chestnut, shining; posterior margin of the last segment yellowish white.

Length 3–3½ lines.

Family Tingididæ.

Genus TINGIS, Fab.

Tingis pyrioides.

Extremely like *T. pyri* in nearly every particular; and

therefore it will only be necessary to point out the characters which will separate them.

Tingis pyri.

Disk of the elytra from the apex of the rhomboidal cell with five transverse rows of irregular meshes.

Tingis pyrioides.

Disk of the elytra from the apex of the rhomboidal cell with three transverse rows of irregular meshes.

Pronotum, lateral margins more upright than in *T. pyri*.

Length $1\frac{1}{2}$ line.

I have only seen a single example.

Genus MONANTHIA, Lep. et Serv.

Monanthia monstrosa.

Pale cinnamon-yellow. *Pronotum*, side margins overlapped and produced posteriorly into a large bladder-like process of a dark chocolate-brown colour. *Elytra* with a dark brown or blackish patch in the middle of the anterior margin, and another smaller one of the same colour near the apex; anterior margin at the base and beyond the central dark patch with two rows of meshes; on the patch itself the meshes are minute.

Head black. *Crown* in front pale brown, and armed with five spines of the same colour placed as follows, viz. a short central one, one on each side in front (approximating and appearing but as one between the antennæ), and another appressed one along the inner margin of each eye. *Antennæ* thin, pale clear brown, fourth joint wanting. *Eyes* black.

Thorax.—*Pronotum* pale cinnamon-yellow, narrow in front; sides almost straight; the overlapped side margins produced posteriorly into a large bladder-like process of a dark chocolate-brown colour, and covered with large, for the most part five-sided meshes; hood small, anterior margin in the middle angulated; side keels of the scutellar process in a line with the inner margin of the cysts, the middle one, between the latter, apparently clothed with fine brown hairs. *Elytra*, anterior margin gradually widening to the gently rounded middle, then sinuate to the broadly rounded apex; marginal field narrow, with two rows of transparent meshes from the base and beyond the dark brown or blackish middle patch, in which last the meshes are minute; reticulation of the outer row of meshes beyond the patch black and Y-shaped; disk within the cells flat, brownish; outer nerve cinnamon-yellow; meshes finer than those on the cysts, posterior to the cells with a dark brown or blackish cloud, and the meshes gradually becoming larger

towards the apex. *Legs* clear brown: *tarsi*, third joint dark brown, towards the apex fuscous: *claws* fuscous.

Length $1\frac{1}{2}$ line.

This insect belongs to the section in which are *M. scapularis*, *quadrinaculata*, *dumetorum*, *lupuli*, &c. In colour it somewhat resembles *M. quadrinaculata*; but the bladder-like form into which the overlapped side margins are produced posteriorly will be found sufficient to separate it from every other known species.

There appears to be only one example in the collection.

Monanthia Fieberi.

Slightly dusky cinnamon-brown, darker across the elevated posterior portion of the overlapped sides of the pronotum, and also in that portion of the elytra posterior to the cells; anterior margin of the *elytra* with two rows of meshes throughout.

Head black. *Crown* with five pale brownish-yellow spines placed as follows, viz. a short one in the centre in front, another on either side of the last (approximating and appearing to form but one between the antennæ), and one along the inner margin of each eye, its apex curving round until it touches the base of the anterior pair. *Antennæ* pale brown; first, second, base of the third, and fourth joint entirely darker. *Eyes* black.

Thorax.—*Pronotum*, sides at the base for a very short distance straight, then slightly convex towards the hinder angles; hood very small, anterior margin almost straight; the overlapped side margins swelled up posteriorly, viewed from above united and enclosing the middle keel, from the side somewhat semiovate, flattened above; side keels of the scutellar process brown at the base, slightly diverging posteriorly. *Elytra*, sides gradually but gently rounded to beyond the middle, at which last they are widest, then sinuate to the broadly rounded apex; marginal field with two rows of transparent meshes, becoming larger beyond the middle, in which last some of the reticulation is dark brown and forms almost a patch; base of three or four of the reticulations in the sinuate portion next the anterior margin with a brown spot; round the apex dark brown. *Legs* brown: *tibiæ* pale brownish yellow: *tarsi* pale brownish yellow, third joint brown.

Length $1\frac{1}{4}$ line.

This insect also belongs to the same section as *M. monstrosa*, from which, however, it is easily separated by the difference in form of the overlapped side margins, which in *M. Fieberi* unite posteriorly and enclose the middle keel of the pronotum—a character which will also distinguish it from any other in

the genus. In colour it most nearly resembles a dingy *M. dumetorum*.

Genus CANTACADER, Am. et Serv.

Cantacader Lethierryi.

Clear pale brownish yellow. *Crown* armed with four long spines. *Pronotum* with five keels; the three inner ones parallel, extending throughout its entire length; the two outer posterior, short, curving round interiorly. *Elytra* with an irregular fuscous shade throughout, darkest in the cells; sides in the middle and the apex with a blackish patch.

Head brownish yellow. *Crown* with four long spines, placed two in front, stout, reaching to about in a line with the base of the third joint of the antennæ, and two, more slender than the others, springing from near the middle of the inner margin of each eye; antenniferous processes produced into a stout spine exteriorly. *Antennæ* brownish yellow; first joint stoutest, somewhat obconic, and with a small petiole; second oval, about half the length of the first; third long, slender; fourth fusiform, black, and with a few longish erect dark hairs. *Eyes* dusky purplish. *Rostrum*: cheek-plates of the sheath somewhat luteous, with about four rows of fine meshes; apex blackish.

Thorax.—*Pronotum* pale brownish yellow, narrow in front; lateral margins straight, gradually but gently widened to the acutely rounded hinder angles; anterior margin concave, almost angular; posterior margin semiovate, straight between the first and second outer keels, concave between the inner ones; disk with five keels,—the three inner ones parallel, extending throughout the entire length of the pronotum, viewed from above slightly waved; the two outer ones spring from the posterior margin near to the hinder angles, and curve round interiorly about the middle of the disk, which is somewhat depressed. *Elytra* somewhat elliptic, pale brownish yellow, with an irregular fuscous shade throughout, darkest in the cells; cell-nerves pale; marginal field very narrow, with one row of meshes; disk within the cells almost straight, exteriorly (on the sides) sloping towards the anterior margin; reticulation throughout fine; anterior margin in the middle and apex with a blackish patch. *Legs* brownish yellow: *tarsi* dark brown.

Length $1\frac{7}{8}$ line.

Somewhat like *C. Staudingeri*, but larger and darker in colour, and having the third joint of the antennæ more slender, the three inner keels of the pronotum parallel, and the posterior margin of the same of a totally different form.

Family **Brachyrhynchidæ**.Genus **MEZIRA**, Am. et Serv.*Mezira scabrosa*.

Pitchy black or brown, covered with minute tubercles.

Head pitchy black, thickly tuberculate. *Antennæ* pitchy black, thickly punctured; fourth joint, apex dusky yellow. *Eyes* pitchy brown. *Rostrum* dark brown.*Thorax*.—*Pronotum* dull pitchy brown, tubercles thickly and irregularly disposed, four anterior callosities generally brown in the centre. *Scutellum* black or pitchy black, thickly tuberculate, central keel and apex sometimes brownish. *Elytra* pale brownish yellow; between the anterior margin and the first nerve, towards the apex, more or less brown; posterior marginal nerve piceous; all the nerves tuberculate and the spaces between sparingly so; tubercles brown. *Membrane* brownish yellow, nerves brown; below the apex of the corium a yellowish patch. *Sternum* black-brown, round the base of the legs dark brown. *Legs* dark brown: *thighs* thickly and finely granulate.*Abdomen* beneath dark brown; anterior margin of the first four segments in the middle finely granulate, fifth and sixth entirely granulated. *Connexivum* dark brown; posterior margin of the segments pale brown.

Length 3-4 lines.

Family **Reduviidæ**.Genus **ACANTHASPIS**, Am. et Serv.*Acanthaspis humeralis*.

Black, clothed with long, fine, yellow and black hairs.

Head black. *Face*, apex round the base of the rostrum brown. *Eyes* pitchy brown. *Antennæ* black, clothed with long, almost erect, black hairs; third and fourth joints, in addition, with short yellowish hairs. *Rostrum* black.*Thorax*.—*Pronotum* dull cinnamon-brown, clothed with long, fine, yellow hairs; anterior portion to behind the callosities, and a transverse streak across the centre of the posterior portion, not reaching to the margin, black. *Scutellum* black, base narrowly and somewhat indistinctly fuscous yellow. *Elytra* black. *Corium*, base with a somewhat triangular yellowish-brown patch. *Membrane* black. *Sternum*, *legs*, and *abdomen* black.Length $6\frac{1}{2}$ -7 lines.

Family Ectrichodidæ.

Genus MENDIS, Stål.

Mendis japonensis.

Deep red, shining. *Head* and *pronotum* anteriorly clothed with short, erect, very fine, black and pale hairs intermixed. *Corium*, anterior margin crimson, terminating in a triangular patch, in the centre of which is a short, fine, curved, black streak.

Head lurid. *Crown* between the ocelli reddish. *Antennæ* black, clothed with long black hairs; first joint more sparingly clothed than the others; apex of the second and fourth very narrowly, and the pedunculation reddish; neck above black. *Rostrum* brown.

Thorax.—*Pronotum* deep red, anterior portion as far as the transverse channel somewhat lurid testaceous; transverse channel interiorly with a black spot; posterior portion of the central longitudinal channel with about eight or nine punctures. *Scutellum* black, the H-shaped portion reddish, clothed with long, erect, pale hairs. *Elytra* black, base and the anterior margin as far as the first nerve crimson, apex narrowly black; in the centre of the triangular patch a short, fine, curved black streak, the convexity turned towards the apex of the scutellum. *Membrane* pitchy black, nerves black; base of the trifurcate nerve testaceous, exterior margin of the two outer nerves with a brown margin. *Prosternum* black, shining. *Legs* red: *coxæ* dark brown: *thighs* at the base narrowly piceous: *tibiæ* at the apex exteriorly piceous or black: *tarsi* piceous, first joint brown.

Abdomen above red; underneath red, sparingly clothed with longish, fine, pale hairs, and with a large, black, somewhat ovate patch on each segment just within the spiracles.

Length 6 lines.

There is only a single example (♂), wanting an elytron. It was submitted to Dr. Stål, who returned it as unknown to him, but with the remark, "*nigripenni*, Fab., affinis," a species I do not possess, and therefore cannot point out the differences.

Family Nabidæ.

Genus NABIS, Latr.

Nabis brevilineatus.

Male pale brownish yellow. *Corium*, anterior margin at the base and beyond the middle with a short black line.

Head brown, with a reddish tinge, sparingly clothed with fine depressed yellow hairs. *Antennæ* yellow or pale brownish yellow; first joint, apex narrowly fuscous; second, base narrowly fuscous, apex black. *Eyes* dark red or chestnut-red. *Rostrum* yellow, last joint orange-red.

Thorax.—*Pronotum* pale brownish yellow, sparingly clothed with depressed yellow hairs; anterior portion as far as the transverse channel darker than the posterior, and with a reddish tinge; posterior portion punctate crenate. *Scutellum* pale brownish yellow, with a slight reddish tinge. *Elytra* pale brownish yellow: *clavus*, inner marginal nerve from the base to beyond the apex of the scutellar margin red: *corium*, anterior margin beyond the middle with a short black line, first nerve at the base with a short black line, the space between the nerves more or less powdered with red towards the base; apex broadly brown. *Membrane* pale, almost white, spaces between the nerves at the base brown; from the apex to the coloration between the two exterior nerves is a pale brownish cloud, concave on its lateral margins. *Sternum* brownish yellow, with more or less of a reddish tinge, down the middle broadly black: *mesosternum* round the base of the legs yellow, below which is a black spot. *Legs* yellow: *coxae* and *fulcra* of all the pairs yellow: *thighs*, first pair red, apex yellow; second and third pairs yellow; all the pairs with two dark brown or piceous rings: *tarsi* yellow, apex of the third joint blackish.

Abdomen above red or red-brown, basal segment entirely and the posterior margin of the last in the middle black, genital segments with a broad black dash down the middle; beneath red, four basal segments down the middle broadly black. *Connexivum* red, exterior margin narrowly yellow, posterior angle of the third, fourth, and fifth segments black.

Female yellowish, with a red tinge. *Head* and *pronotum* red. *Elytra*, *clavus*- and *corium*-nerves red. All the other characters as in the male.

Length, ♂ 4, ♀ 4 $\frac{3}{4}$ lines.

Family Pelogonidæ.

Genus PELOGONUS, Latr.

Pelogonus flavomarginatus.

Dull black; lateral margin of the pronotum and anterior margin of the elytra yellow.

Head black, with a fine central keel terminating between the ocelli. *Face* bronzy black, finely wrinkled, and with a

golden shimmer in certain lights ; on each side of the central keel between the eyes is a depression ; apex with a yellow margin. *Eyes* dark brown. *Antennæ* yellow, third and fourth joints dusky. *Rostrum* piceous, shining ; apical half of the third joint and fourth entirely brown.

Thorax.—*Pronotum* black, finely punctured ; lateral margin anteriorly brown, posteriorly yellow, next the base the colour is widened out into a triangular yellow patch ; posterior margin yellow, the colour widest across the scutellum, and with a row of fine black punctures on its inner edge ; disk on the sides with one or two almost obsolete milky white spots. *Scutellum* black, finely punctured. *Elytra* black : *clavus*, posterior margin and apex narrowly yellowish ; base with one or two almost obsolete milky white spots : *corium*, anterior margin narrowly yellow, within which, at almost regular intervals, are five almost obsolete milky white spots ; opposite to these the colour of the anterior margin is paler ; disk with a few small, scattered, almost obsolete milky white spots. *Membrane* dark fuscous brown, with a few longitudinal whitish streaks round the apex. *Sternum* black, punctured : *prosternum*, posterior margin brownish yellow ; *xyphus*, margin pale yellow : *metasternum*, posterior margin brownish yellow. *Legs* yellow : *coxae*, first pair fuscous : *thighs*, apical two thirds of all the pairs on the upper half fuscous brown, inside with one or two rows of fuscous or black punctures : *tibiae* yellow, inclining to brown exteriorly ; apex narrowly blackish ; base of the long, yellow, spinose hairs set in a black puncture : *tarsi*, first and second pairs yellow, third joint black ; third pair brown, third joint black.

Abdomen beneath black, posterior margin of some of the last segments narrowly brownish.

Length $2\frac{1}{2}$ lines.

I have only seen one specimen of this species.

Family Gerridæ.

Genus LIMNOBATES, Burm.

Limnobates albolineatus.

More or less dark fulvous brown.

Head.—*Crown* with a depression between the eyes ; from the base to the latter a more or less distinct, fine, white, central line ; sides between the base and the eyes more or less broadly black. *Face*, apex red, shining. *Antennæ* pale brown ; first joint, except the base, pitchy brown ; second, apex narrowly pitchy brown or blackish ; third and fourth blackish. *Eyes*

dark pitchy brown. *Rostrum* brown, last joint black; beneath, from the base to the eyes, with a more or less broad pale central line, apex pale.

Thorax.—*Pronotum* between the base and the constriction brown, posteriorly yellowish, with a white central line throughout its entire length; central line and sides margined with brown, and with a few scattered white atoms; shoulder-calli somewhat piceous. *Elytra* fuscous: *clavus* with a short white line at the base: *corium*, nerves dark brown or piceous, the very narrow space enclosed between the bifurcation of the anterior marginal nerve white; central longitudinal nerve exteriorly from the clavus to the apex with a broad white streak. *Legs* brown: *thighs*, apex black: *tibiae*, apex very narrowly black: *tarsi* black.

Abdomen beneath black, with a somewhat hoary covering; down the middle a somewhat indistinct, broad, brown line.

Length 5–5½ lines.

Family Veliidæ.

Genus MICROVELIA, Westwood.

Microvelia Douglasi.

Olivaceous brown, dull. *Crown* with a narrow silvery-white streak along the inner margin of each eye. *Face*, apex pale brownish yellow. *Pronotum* in front with a narrow brown collar (in certain lights whitish), divided by the fine, central, longitudinal keel; hinder angles acute, prominent, slightly tuberculate; side margins of the scutellar process convex. *Elytra* white, the entire margin and cell-nerves brown-black. *Connexivum* brown. *Legs* pale brownish yellow.

Head olivaceous brown, dull, very convex. *Crown* with a narrow silvery-white streak along the inner margin of each eye. *Face*, apex of the central and side lobes entirely pale brownish yellow. *Antennæ* pale brownish yellow, apex of the second and fourth and fifth joints with a dusky hue. *Eyes* deep pitchy black. *Rostrum* pale brownish yellow, base of the first joint in the middle exteriorly with a narrow longitudinal black line.

Thorax.—*Pronotum* olivaceous brown, dull; anterior margin straight, adjoining which is a narrow brown collar, having a silvery white appearance in certain lights; lateral margins straight, diverging widely to the acute, prominent, and somewhat tuberculate hinder angles; the latter, viewed from the side, narrowly brown; margin of the scutellar process spatulate-acuminate; disk very convex, with a fine, black, central

longitudinal keel not reaching to the apex of the scutellar process. *Elytra* white; anterior margin broadly and interior margin narrowly brown-black; cell-nerves brown-black; central cell suboval, elongated towards the base, divided throughout its length by a slightly curved brown-black line; longitudinal half of the apical cell brown-black, with a tooth on its inner margin towards the base. *Sternum*, sides clothed with a thick, shining, silvery-white pile. *Legs* pale brownish yellow: *tarsi*, apex of the second joint brownish.

Abdomen black, beneath clothed with a thick, shining silvery pile. *Connexivum* pale brown.

Length $\frac{3}{4}$ line.

Very closely related to the *M. pygmæa*, L. Duf., but differs from that species in having the antennæ, legs, and connexivum pale. On the other hand, the characters on the elytra in both species seem very similar; and not having seen a macropterous specimen of *M. pygmæa*, I am unable to point out in what the differences consist.

This insect is not included in the list given at the commencement of this paper, as since its publication I have only received a specimen from Mr. Lewis.

Family Naucoridæ.

Genus NAUCORIS, Geoffr.

(*Ilyocoris*, Stål, Öfv. Vet. Ak. Förh. 1861, p. 201.)

Naucoris exclamationis.

Head and *pronotum* yellow; the former in front with a short, more or less distinct, brown or black clavate streak. *Elytra* fuscous brown.

Head yellow. *Crown* posteriorly somewhat ferruginous, and dotted with numerous dark brown atoms; in front, and nearer to the centre than the inner margin of the eyes, with a short, more or less distinct, brown or black clavate streak.

Thorax.—*Pronotum* on the sides broadly yellow; disk more or less ferruginous, and dotted with numerous dark brown atoms. *Scutellum* brownish yellow, disk sometimes brownish, margins brownish yellow. *Elytra* fuscous brown, very finely shagreened. *Wings* and nerves milk-white. *Sternum* yellowish or testaceous. *Legs* yellowish: *thighs*, first pair underneath black: *tibiæ*, second and third pairs with long brown spines: *tarsi* and *claws*, second and third pairs brownish yellow.

Abdomen above somewhat ochraceous, fuscous or brownish

down the middle; posterior margin of the segments broadly brown, outer angle black; beneath testaceous or dusky testaceous, outer angle black, marginal hairs long, yellowish.

Length 5 lines.

Smaller than *N. cimicoides*, to which it is allied. It is, however, much clearer-coloured than that species, and has also the posterior margin of the abdominal segments broadly brown, which, with the clavate streak on the head, is sufficient to separate them.

Family Belostomidæ.

Genus APPASUS, Am. et Serv.

Appasus Lewisi.

Luteous, testaceous, or brownish.

Head testaceous. *Crown* sometimes brownish. *Eyes* black.

Thorax.—*Pronotum* testaceous or luteous in front; posteriorly from the transverse channel frequently brown, and somewhat thickly and irregularly punctured; disk towards the front with a pale or dark brown triangular fovea on each side joined to a >-shaped black line. *Scutellum* testaceous grey or brownish, finely crenulate; near the basal angles a more or less distinct, somewhat triangular, pale spot; towards the apex generally a dark, somewhat heart-shaped patch; apex more or less clear brownish yellow. *Elytra* luteous or testaceous yellow, crenulate punctate: *clavus*, disk more or less fuscous; inner and posterior margin and claval suture testaceous yellow: *corium*, disk more or less fuscous, base and anterior margin broadly testaceous yellow; inner posterior angle with a triangular patch of short golden hairs: or the entire *clavus* and *corium* brown, anterior margin of the latter broadly paler. *Membrane* unicolorous. *Sternum* testaceous. *Legs* testaceous or brownish yellow: *thighs*, first pair sometimes brownish: *tibiæ*, second and third pairs sometimes brownish.

Abdomen beneath somewhat dusky testaceous.

Length 8 lines.

Family Nepidæ.

Genus LACCOTREPES, Stål.

Laccotrephes japonensis.

Fuscous brown. *Prosternum* at the base and apex with a tubercle. *Abdomen* above orange-red, with a broad black streak down the back.

Head: central keel granulated.

Thorax.—*Pronotum* longer than broad, narrower in front than behind, sides concave, rounded in front; anterior margin behind each eye with a tubercle; on each side of the centre a longitudinal curved ridge, roughly granulated; sides in front and posteriorly from the transverse channel coarsely granulated. *Scutellum* with a granulated keel on each side next the base, and a central keel extending from the apex to the termination of the side keels. *Wings* milky white, principal nerves yellow. *Legs* fuscous brown.

Abdomen above orange-red, with a broad black streak down the centre; apex thickly clothed with greyish hairs; anal appendages yellowish towards the apex.

Length of body 13, appendages 15 lines.

Genus RANATRA, Fab.

Ranatra pallidenotata.

Male brownish yellow; posterior portion of the pronotum finely punctured. *Elytra* with several small, almost round, pale spots. Anterior *thighs* beyond the middle with a large triangular tooth, and before the apex with a small one. Anal appendages longer than the body.

Head.—*Crown* with a transverse channel a little in front of the posterior margin of the eyes. *Eyes* black, shining.

Thorax.—*Pronotum* brownish yellow; posterior portion finely punctured; callus of the hinder angles dark brown or piceous. *Elytra* more or less inclined to brown next the base: *clavus* pale brownish yellow; inner marginal nerve testaceous; central nerve brownish, with several oblong spots or short streaks; disk at the base, between the central nerve and claval suture, with a long, brown, somewhat triangular dash: *corium* brown, near the apex of the clavus pale brownish yellow; first exterior nerve testaceous or brownish yellow; disk with several pale yellowish-white spots of unequal size and irregularly disposed. *Membrane* pale yellowish white, nerves brown. *Sternum* brownish yellow. *Legs* brownish yellow: *tibiæ*, second and third pairs at the base and apex narrowly pitchy brown: *tarsi* brownish yellow; second and third pairs at the apex pitchy brown: *claws* brown.


Abdomen above black, dull, and with a mouldy appearance in certain lights; margins next the connexivum brownish; *connexivum* brownish yellow; beneath testaceous or brownish yellow; anal appendages reddish at the base, towards the apex testaceous.

Female similar to the male, but with darker elytra.


Length, ♂ (without appendages) 17, appendages 20 lines ; ♀ 19, appendages 20 lines.

According to Dr. Stål, who has seen the insect, it is allied to his *R. valida* ; but, unfortunately, I do not possess a specimen wherewith to compare it and point out the differences. In the shape of the metasternum it resembles *R. chinensis*, Mayr, 'Reise der öst. Freg. Novara,' p. 191, t. v. fig. 59 b.

Ranatra unicolor.

Luteous. *Crown* between the eyes with a small callus. *Pronotum*, anterior portion appearing as if thrust into the posterior ; the latter finely dark-grey punctured, and its anterior margin above -shaped. Anterior thighs with a triangular tooth beyond the middle. Anal appendages not two thirds the length of the body.

Head.—*Eyes* piceous or purplish brown, faintly shining.

Thorax.—*Pronotum*, anterior portion pale brownish yellow, stouter next the head than at its junction with the posterior portion, into which latter it has the appearance of being thrust ; posterior portion luteous, thickly and finely dark-grey punctured ; its anterior margin above -shaped. *Scutellum* brownish, with a small fovea on each side of the centre below the middle. *Elytra* lurid, very thickly and very finely dark-grey punctured. *Membrane* darker than the elytra, nerves brown. *Sternum* lurid or somewhat testaceous. *Legs* luteous or somewhat testaceous : *thighs*, first pair with a triangular black tooth beyond the middle, second and third at the apex narrowly brown : *tibiae* lurid or yellowish ; second and third pairs, especially towards the apex, on the sides with short, spinose, black hairs ; apex narrowly dark brown : *tarsi*, second and third pairs pale brownish yellow ; apex dark brown : *claws*, second and third pairs at the base pale ; apex brown.

Abdomen above pitchy brown, paler on the sides ; *connexivum* luteous or pale brownish yellow : beneath lurid or somewhat testaceous : anal appendages luteous.

Length of body 13, appendages 7 lines.

This is a genus of which I have seen and possess but few species. All of those known to me are larger than the insect above described, and which, although belonging to the group with only one tooth in the middle of the anterior femora, has as a distinguishing character short anal appendages.

There are two male specimens in the collection.



Scott, John. 1874. "LIV.—On a collection of Hemiptera Heteroptera from Japan. Descriptions of various new genera and species." *The Annals and magazine of natural history; zoology, botany, and geology* 14, 426–452.
<https://doi.org/10.1080/00222937408681006>.

View This Item Online: <https://www.biodiversitylibrary.org/item/63340>

DOI: <https://doi.org/10.1080/00222937408681006>

Permalink: <https://www.biodiversitylibrary.org/partpdf/58778>

Holding Institution

University of Toronto - Gerstein Science Information Centre

Sponsored by

University of Toronto

Copyright & Reuse

Copyright Status: NOT_IN_COPYRIGHT

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.