

Cat.

The bounding-line, or rather the lines bridging the openings (a), we contend ought not to have been introduced.

Fig. 7. Same, as the "nummuline wall" really occurs, there being nothing in specimens, as will be seen in fig. 5, to show that the openings (a, fig. 6) were ever filled with calcite (according to the "eozoic doctrine" the part is a "calcareous lamella"): on the contrary, they were always filled with serpentine.

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

NOT the least interesting amongst the many novelties obtained by Mr. George Lewis in Japan are the Hemiptera, which I have had the pleasure of examining; and although the major part of the collection contains many well-known forms, some of which are European, on the other hand there are several possessing peculiar characters. These last are all entirely new to science; and their description forms a portion of the present paper. Subjoined I give a complete list, showing which genera and species are new and which have been previously described.

List of Hemiptera Heteroptera collected by Mr. George Lewis in Japan.

Those species with an asterisk (*) in front are found in England. Those species with an obelisk (†) occur on the continent of Europe, but are not known to be British.

Fam. PACHYCORIDÆ.

Pœcilocoris ornatus, Dallas.
Callidea grandis, Thumb.

Fam. EURYGASTRIDÆ.

✓ Bolbocoris reticulatus, Dallas.
*Eurygaster maurus, Linn.
✓ Graphosoma lineata, Linn.

Fam. PODOPIDÆ.

✓ Scotinophora lurida, Burm.
— tarsalis, n. sp.

Fam. ODONTOSCELIDÆ.

No representative.

Fam. PLATASPIDÆ.

Coptosoma cribraria, Fab.
— biguttata, Motsch.

Ann. & Mag. N. Hist. Ser. 4. Vol. xiv.

Fam. OXYNOTIDÆ.

No representative.

Fam. ASOPIDÆ.

*Zicrona cœrulea, Linn.
✓ Menida violacea, Motsch.
✓ Picromerus Lewisii, n. sp.
✓ Pinthæus sanguinipes, Fab.

Fam. CYBNIDÆ.

Æthus nigropiceus, n. sp.
Macroscytus japonensis, n. sp.
Canthophorus niveimarginatus, n. sp.
Sehirus triguttatus, n. sp.

Fam. SCIOCORIDÆ.

✓ Laprius varicornis, Dallas.
✓ Drinostia Lewisii, n. sp.

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Fam. PHLÆIDÆ.

No representative.

Fam. HALYDIDÆ.

- ✓ *Eurydema rugosa*, *Motsch.*
 ✓ *Agonoscelis nubila*, *Fab.*
 ✓ *Stollia guttigera*, *Thunb.*

Fam. PENTATOMIDÆ.

- ✓ *Ælia Fieberi*, n. sp.
 ✓ *Plautia Ståli*, n. sp.
 ✓ *Zangis melanostictus*, *Voll.*
 ✓ *Nezara antennata*, n. sp.
 ✓ — *viridis*, *Lin.*
 ✓ *Piezodorus rubrofasciatus*, *Fab.*
 ✓ *Polycoris verbasci*, *De G.*
 ✓ *Palomena angulosa*, *Motsch.*
 ✓ — *rubricornis*, n. sp.
 ✓ *Halyomorpha picus*, *Fab.*
 ✓ *Carbula humerigera*, *Uhler.*
Acanthosoma distincta, *Dallas.*
 — *scutellata*, n. sp.
Elasmucha Putoni, n. sp.
 — *Signoreti*, n. sp.

✓ Fam. UROSTYLIDÆ.

- ✓ *Urostylis striicornis*, n. sp.
 ✓ — *annulicornis*, n. sp.
 ✓ — *Westwoodii*, n. sp.

Fam. EDESSIDÆ.

No representative.

Fam. PHYLLOCEPHALIDÆ.

- ✓ *Gonopsis affinis*, *Uhler.*
 ✓ *Prionochilus decempunctatus*,
Motsch.

Fam. MEGYMENTIDÆ.

1 species, about which I am doubtful.

Fam. SPARTOCERIDÆ.

No representative.

Fam. MICTIDÆ.

Mictis fuliginosa, *Uhler.*

Fam. NEMATOPIDÆ.

No representative.

Fam. HOMŒOCERIDÆ.

Homœocerus striicornis, n. sp.
 — *unipunctatus*, *Thunb.*

Fam. SYROMASTIDÆ.

No representative.

Fam. ACANTHOCORIDÆ.

Acanthocoris sordidus, *Thunb.*

Fam. ANISOSCELIDÆ.

Plinacthus bicoloripes, n. sp.
Pachycephalus opacus, *Uhler.*

Fam. ALYDIDÆ.

Riptortus clavatus, *Thunb.*
Megalotomus costalis, *Stål.*

Fam. STENOCEPHALIDÆ.

No representative.

Fam. BERYTIDÆ.

No representative.

Fam. COREIDÆ.

Cletus rusticus, *Stål.*
Paraplesius, nov. gen.
 — *unicolor*, n. sp.

Fam. RHOPALIDÆ.

Stictopleurus abutilon, *Rossi.*

Fam. LYGÆIDÆ.

Arocatus melanostoma, n. sp.
Melanocephalus cruciger, *Motsch.*
Ischnodemus spinicaput, n. sp.
Chauliops, nov. gen.
 — *fallax*, n. sp.
Nysius, 1 species undetermined.
Peliosoma antennata, *Uhler.*
Geocoris varius, *Uhler.*
Tropistethus antennatus, n. sp.
 * *Platygaster ferrugineus*, *Lin.*
Lasiosoma pallipes, n. sp.
Diplonotus rusticus, n. sp.
 — *hemipterus*, n. sp.
 — *luridus*, n. sp.
 — *lateralis*, n. sp.
Metochus, nov. gen.
 — *abbreviatus*, n. sp.
Prosomœus, nov. gen.
 — *brunneus*, n. sp.
Gyndes albomarginatus, n. sp.
Lethæus Dallasi, n. sp.
Calyptonotus albomaculatus,
 n. sp.

Fam. SYROMASTIDÆ.
No representative.

Fam. ACANTHOCORIDÆ.
Acanthocoris sordidus, *Thunb.*

Fam. ANISOSCELIDÆ.
Plinactus bicoloripes, n. sp.
Pachycephalus opacus, *Uhler.*

Fam. ALYDIDÆ.
Riptortus clavatus, *Thunb.*
Megalotomus costalis, *Stål.*

Fam. STENOCEPHALIDÆ.
No representative.

Fam. BERYTIDÆ.
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— *unicolor*, n. sp.

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Melanocephalus cruciger, *Motsch.*
Ischnodemus spenicaput, n. sp.
Chauliops, nov. gen.
— *fallax*, n. sp.
Nysius, 1 species undetermined.
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Geocoris varius, *Uhler.*
Tropistethus antennatus, n. sp.
* *Platygaster ferrugineus*, *Linna.*
Lasiosoma pallipes, n. sp.
Diplonotus rusticus, n. sp.
— *hemipterus*, n. sp.
— *luridus*, n. sp.
— *lateralis*, n. sp.
Metochus, nov. gen.
— *abbreviatus*, n. sp.
Prosomceus, nov. gen.
— *brunneus*, n. sp.
Gyndes albomarginatus, n. sp.
Lethæus Dallasi, n. sp.
Calyptonotus albomaculatus,
n. sp.

Graptopelta albomarginata,
Uhler?
Ischnorrhynchus colon, *Thunb.*

Fam. DIPSOCORIDÆ.
No representative.

Fam. ANTHOCORIDÆ.
No representative.

Fam. MICROPHYSIDÆ.
No representative.

Fam. PYRRHOCORIDÆ.
Physopelta cincticollis, *Stål.*
— *gutta.*
Pyrrhocoris coriaceus, n. sp.
Melanospilus cruciger, *Motsch.*

Fam. LARGIDÆ.
No representative.

Fam. CAPSIDÆ.
1 species of *Derocoris*, but
whether already described I
cannot ascertain.

Fam. PHYMATIDÆ.
No representative.

Fam. MACROCEPHALIDÆ.
No representative.

Fam. HEBRIDÆ.
No representative.

Fam. ZOSMENIDÆ.
No representative.

Fam. PIESMIDÆ.
No representative.

Fam. TINGIDIDÆ.
Tingis pyrioides, n. sp.
Monanthia monstrosa, n. sp.
— *Fieberi*, n. sp.
Cantacader Lethierryi, n. sp.
† *Laccometopus clavicornis*, *Linna.*

Fam. BRACHYRHYNCHIDÆ.
Mezira scabrosa, n. sp.

Fam. ARADIDÆ.
No representative.

Fam. ACANTHIDÆ.
No representative.

Fam. HOLOPTILIDÆ.
No representative.

Fam. LOBOCEPHALIDÆ.
No representative.

Fam. SYCANIDÆ.
No representative.

Fam. HARPACTORIDÆ.
Isyndus obscurus, *Stål.*
Cydnocoris russatus, *Stål.*

Fam. SACCODERIDÆ.
No representative.

Fam. HÆMATOCORIDÆ.
No representative.

Fam. TAGALIDÆ.
No representative.

Fam. STENOPODIDÆ.
Oncocephalus squalidus, *H.-Sch.*

Fam. REDUVIIDÆ.
Acanthaspis humeralis, n. sp.
Sphecanolestes nodipes, *Uhler.*
— *impressicollis*, *Stål.*

Fam. ECTRICHODIDÆ.
Larymna Andræ, *Thunb.*
Mendis japonensis, n. sp.

Fam. APIOMERIDÆ.
No representative.

Fam. PIRATIDÆ.
Pirates, 1 species not determined.

Fam. NABIDÆ.
Nabis brevilineata, n. sp.

Fam. SALDIDÆ.
No representative.

Fam. PELOGONIDÆ.

Pelogonus flavomarginatus, n. sp.

Fam. EMESIDÆ.

No representative.

Fam. HENICOCEPHALIDÆ.

Henicocephalus, 1 species without elytra.

Fam. GERRIDÆ.

Limnobates albolineatus, n. sp.
Gerris, 4 species; but as they may probably be described elsewhere, I leave them for the present.

Fam. VELIIDÆ.

No representative.

Fam. GALGULIDÆ.

No representative.

Fam. NAUCORIDÆ.

Naucoris exclamationis, n. sp.

Fam. BELOSTOMIDÆ.

Belostoma, ? n. sp.
Appasus Lewisi, n. sp.

Fam. NEPIDÆ.

Laccotrephes japonensis, n. sp.
Ranatra pallidenotata, n. sp.
— unicolor, n. sp.

Fam. CORIXIDÆ.

No representative.

Fam. NOTONECTIDÆ.

Notonecta triguttata, Mostch.

Family Podopidæ.

Genus SCOTINOPHORA, Stål.

Scotinophora tarsalis.

Black, thickly and deeply punctured. *Pronotum* anterior angles produced into a longish, somewhat acute tooth; lateral margins waved, terminating posteriorly in a stout tooth. *Legs* black. *Tarsi* brown.

Head black, rugosely punctured; central lobe elevated, shorter than the side lobes, which are somewhat acute at the apex, and leave a wide notch between them. *Antennæ* black. *Rostrum* piceous.

Thorax.—*Pronotum* black, rugulose punctate; in front with a narrow flat collar and a transverse channel in a line with the posterior teeth, the intermediate space much elevated and with a fine central longitudinal keel, on either side of which is a round punctured callus. *Scutellum* black or deep pitchy black, thickly and coarsely punctured; the punctures thickest next the basal angles, those on the disk disposed in short irregular sinuous rows. *Elytra* black or deep pitchy black, thickly punctured. *Membrane* pale. *Sternum* and *legs* black. *Tarsi* brown.

Abdomen beneath convex, black, finely crenulate.
Length $2\frac{3}{4}$ lines.

When in fine condition I believe this insect will be found to be clothed with short yellowish hairs, as there are slight

Genera and Species

Fam. GALGULIDÆ.

No representative.

Fam. NAUCORIDÆ.

Naucoris exclamationis, n. sp.

Fam. BELOSTOMIDÆ.

Belostoma, ? n. sp.

Appasus Lewisi, n. sp.

Fam. NEPIDÆ.

Laccotrephes japonensis, n. sp.

Ranatra pallidenotata, n. sp.

— *unicolor*, n. sp.

Fam. CORIXIDÆ.

No representative.

Fam. NOTONECTIDÆ.

Notonecta triguttata, *Mostch.*

Podopidæ.

NOPHORA, Stål.

ra tarsalis.

punctured. *Pronotum* anteriorly, somewhat acute tooth; lateral posteriorly in a stout tooth.

ctured; central lobe elevated, hich are somewhat acute at the between them. *Antennæ* black.

rugulose punctate; in front with transverse channel in a line with mediate space much elevated and anal keel, on either side of which *Scutellum* black or deep pitchy unctured; the punctures thickest on the disk disposed in short *Elytra* black or deep pitchy black, e pale. *Sternum* and *legs* black.

black, finely crenulate.

believe this insect will be found lowish hairs, as there are slight

indications here and there on the two examples in the collection. It is little more than half the size of *S. lurida*, from which it may be distinguished by the shape of the head, the longer tooth at the anterior angles of the pronotum, the elevated portion of the same, and the entire puncturing.

Family Asopidæ.

Genus PICROMERUS, Am. et Serv.

Picromerus Lewisi.

Luteous, generally with a fuscous shade, caused by the thick and irregular black puncturing; head somewhat bronzy in front.

Head somewhat bronzy in front, with a more or less distinct yellow streak between the base and the central lobe of the face. *Antennæ* reddish yellow; first joint fuscous, apex of the third and apical half of the fourth and fifth black. *Eyes* pitchy brown. *Ocelli* red. *Rostrum* yellowish, apical joint brown.

Thorax.—*Pronotum* in front frequently dark fuscous; spines pitchy black, frequently somewhat bronzy; lateral margins serrate; disk in front with two slight callosities more or less punctured, and with an irregular, slight, somewhat orange-coloured central keel. *Scutellum* crenate punctate, more or less clouded with dark fuscous, near the basal angles a small, somewhat orange spot. *Elytra*: *corium* more finely punctured than the pronotum. *Membrane* fuscous, nerves slightly darker, inner basal angle with a pale triangular patch divided longitudinally into two unequal portions by a slightly curved dark fuscous streak, widest at the commencement, and extending from the apex of the anterior margin to about the middle of the base, where it curves round and joins the inner margin below the pale triangle. *Sternum* yellowish or luteous, thickly black-punctured. *Legs* yellow or luteous: *thighs* thickly black-punctured; upper, inner, and outer sides piceous, somewhat bronzy: *tibiæ* yellow, with short black streaks at the base and apex on the inner and outer sides: *tarsi* yellow, apical joint black: *claws* reddish brown, apex black.

Abdomen above black, very thickly and finely punctured; beneath yellowish or luteous, black-punctured here and there, the punctures forming little irregular patches; third, fourth, fifth, and sixth segments with a dark bronzy triangular patch in the centre, the last generally largest and more rhomboid in shape. *Connexivum* black or slightly bronzy, finely crenate punctate; on each segment beyond the middle a round orange

or yellowish spot; exterior margins of the segments narrowly orange or yellowish, base black.

Length $5\frac{1}{2}$ –6 lines.

The characters on the antennæ, legs, abdomen underside, and connexivum will enable any one to separate this species from *P. bidens*, to which it bears a great resemblance.

Family Cydnidæ, Stål.

Genus ÆTHUS, Dallas.

Æthus nigropiceus.

Black or deep pitchy black, shining; anterior margin of the head and sides of the pronotum with long castaneous hairs.

Head: anterior margin slightly concave in the middle, and with four foveæ adjoining, one placed at the lower angle of the inner margin of each eye and one on either side of the apex of the central lobe: *crown* unpunctured, shining. *Antennæ* piceous, apex of the terminal joint pale brown. *Eyes* reddish or brownish red. *Rostrum* piceous.

Thorax.—*Pronotum* shining; anterior margin with four foveæ, placed two on either side, between the two inner ones are a few punctures in a curved line; sides and posterior margin rather broadly but finely punctured; across and before the middle of the disk are four foveæ, the two exterior ones deepest. *Scutellum* deeply and coarsely punctured, apex depressed. *Elytra* deeply, but more thickly and finely, punctured than the scutellum, the punctures disposed somewhat in rows. *Membrane* pale fuscous. *Legs* piceous; base of the *tibia* reddish; *tarsi* yellow.

Length $1\frac{1}{2}$ –2 lines.

Immature specimens are reddish chestnut.

Genus MACROSCYTUS, Fieb.

Macroscytus japonensis.

Pitchy black or black, slightly shining.

Head with a few long, stoutish, piceous hairs. *Antennæ* ferruginous brown, first joint sometimes piceous. *Rostrum* pale brown.

Thorax.—*Pronotum* posteriorly somewhat flattened in the middle, with three transverse rows of punctures, or the space enclosed by these entirely punctured; at the anterior margin are four foveæ placed as follows—one near each anterior

angle, and one in a line with the inner margin of each eye, between the latter an irregular row of punctures; sides broadly punctured; margin with a few long, stoutish, piceous hairs. *Scutellum* coarsely and irregularly punctured, the apex lanceolate and depressed. *Elytra* thickly and irregularly punctured, the punctures finer than those on the scutellum, posterior margin almost straight. *Membrane* pale fuscous yellow, with three or four somewhat darker spots near the apex, above which is an irregular transverse line widest next the anterior margin. *Legs* pitchy black or black: *tarsi* reddish brown.

Length $3\frac{1}{2}$ –4 lines.

Apparently a somewhat common species, as there are several examples.

Genus CANTHOPHORUS, Muls.

Canthophorus niveimarginatus.

Blue-black, with a violet tinge, shining, thickly and deeply punctured; the lateral margins of the pronotum and the anterior margin of the elytra narrowly white.

Head finely punctured; anterior margin much reflexed and slightly dentate in the centre. *Antennae*, *eyes*, and *rostrum* black.

Thorax.—*Pronotum* transverse, finely punctured next the anterior margin; across the centre of the disk, but not reaching to the sides, is a deep channel, in front of which is an elevated transverse space almost without punctures; posterior portion coarsely and irregularly punctured. *Scutellum* at the base with about three irregular rows of fine punctures; centre of the disk somewhat sparingly and irregularly punctured, posterior portion rugulose punctate; apex deflected almost at right angles to the disk. *Elytra*: *clavus* with two longitudinal rows of punctures next the suture, at the base interiorly rugulose punctate: *corium* punctured, the punctures finer and more regularly disposed than on the pronotum or scutellum, next the claval suture a single longitudinal row; anterior margin white. *Membrane* piceous. *Legs* and *tarsi* black.

Abdomen beneath convex, shining, very delicately punctured. *Connexivum* black; exterior margin of the segments narrowly white.

Length 3 lines.

This insect bears a great resemblance to *Sehirus dubius*, from which it may readily be distinguished by the greatly reflexed anterior margin of the head, the deflected apex of the scutellum, and the whiter lateral margins of the pronotum and anterior margin of the elytra.

Genus SEHIRUS, Am. et Serv.

Sehirus triguttatus.

Black, shining; thickly punctured; margin of the pronotum and elytra, two spots upon the latter, apex of the scutellum, and basal two thirds of the tibiæ exteriorly white.

Head black, thickly and deeply punctured; anterior margin reflexed. *Antennæ* pitchy black; first and second joints short, subequal, third about as long as the two former, fourth shorter than the fifth, apex of the latter reddish brown.

Thorax.—*Pronotum* black-punctured, except a transverse space next the anterior margin; the punctures at the anterior margin and on the sides towards the anterior angles finer and more thickly disposed than those on the posterior portion of the disk; lateral margins white. *Scutellum* black, sparingly and irregularly punctured, posteriorly somewhat transversely wrinkled; apex white. *Elytra* black, somewhat thickly punctured. *Corium*: anterior margin white; disk with an unpunctured, short, white oblong streak, placed somewhat obliquely and pointing towards the apex of the scutellum. *Membrane* brown. *Legs* black: *tibiæ* black, basal two thirds, except the knees, exteriorly white; spines black: *tarsi* somewhat reddish, third joint piceous.

Abdomen above piceous, beneath black. *Connexivum*: exterior margin narrowly white.

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

This insect somewhat resembles a small *S. biguttatus*, with the addition of a white apex to the scutellum; but here ends all likeness, as the sculpture is different, and the exterior margin of the tibiæ from the base downwards, for a considerable distance, is white. There is also a great difference in the length and proportion of the joints of the antennæ in the present species when compared with others of the genus; but I am averse to creating a new genus for the reception of this species on this character alone, as I have only seen a single example.

Family Sciocoridae.

Genus DRINOSTIA, Stål.

Drinostia Lewisi.

Pale luteous, finely black-punctured. *Elytra*: anterior margin broadly white. *Sternum* and *abdomen* with a more or less distinct black-punctured streak down the sides; the latter in addition with a broad black line down the centre.

Head thickly black-punctured, except a small space next the eyes, in which is a single slightly curved row of punctures.

Genera and Species

Am. et Serv.

biguttatus.

ed; margin of the pronotum
latter, apex of the scutellum,
exteriorly white.

punctured; anterior margin
first and second joints short,
the two former, fourth shorter
reddish brown.

ctured, except a transverse
the punctures at the anterior
the anterior angles finer and
on the posterior portion of

Scutellum black, sparingly
only somewhat transversely
black, somewhat thickly
margin white; disk with an
streak, placed somewhat
the apex of the scutellum.

tibiae black, basal two thirds,
; spines black: *tarsi* some-

black. *Connexivum*: ex-

s a small *S. biguttatus*, with
the scutellum; but here ends
different, and the exterior
downwards, for a consider-
also a great difference in
joints of the antennæ in the
th others of the genus; but
us for the reception of this
s I have only seen a single

oridae.

ÆLIA, Stål.

lewisi.

ctured. *Elytra*: anterior
and *abdomen* with a more or
k down the sides; the latter
e down the centre.

except a small space next
tly curved row of punctures.

Crown on each side of the centre with a luteous line extending to the base of the central lobe. *Antennæ* luteous; first joint with a short black streak exteriorly, second spotted with black, third, fourth, and fifth black, extreme apex of the two former brownish. *Eyes* reddish or reddish brown. *Ocelli* red, centre black. *Rostrum* luteous; apical half of the terminal joint black.

Thorax.—*Pronotum* finely black-punctured, the punctures disposed in interrupted, tortuous, transverse lines, becoming more dense as they approach the narrowly luteous lateral margins; from the centre of the anterior margin proceeds a short, slightly elevated, pale luteous line; a little beyond the hinder angles is a slightly elevated, shining, piceous spot. *Scutellum* punctured similar to the pronotum; base narrowly, and a short, central, longitudinal line pale luteous. *Elytra* finely black-punctured. *Corium*: anterior margin as far as the first nerve white, thickly punctured, except a narrow line next the nerve; first nerve black, except a short pale space at the base. *Membrane* pale fuscous brown, at the inner basal angle a piceous patch; first and second nerves next the anterior margin piceous; the entire margin finely wrinkled transversely. *Sternum* pale luteous or greyish white, with a broad black-punctured streak, more or less distinct in different individuals down each side; at the base of each pair of legs a black spot. *Legs* pale luteous, finely black-punctured: *thighs* with two distinct black spots near the apex: *tibiae* thickly and finely black-punctured, almost in longitudinal rows; extreme base exteriorly with a small black spot: *tarsi* pale luteous; apex of all the joints piceous: *claws* pale; apex piceous.

Abdomen above black; terminal segment, posterior margin narrowly, and a small round spot next the connexivum brownish yellow; beneath pale luteous or greyish white, sparingly black-punctured a little on each side of the centre, down which runs a broad black line; on the sides and continuous with that on the sternum is a broad black-punctured streak, more or less distinct in different individuals. *Spiracles* black above, very narrowly margined with white. *Connexivum* above white, very finely punctured; exterior angle of all the segments narrowly black; inner and basal margin of the last segment black.

Length $5\frac{1}{2}$ – $6\frac{1}{2}$ lines.

Family Pentatomidæ.

Genus ÆLIA, Fab.

Ælia Fieberi.

Flavous or ochreous, thickly black-punctured; lateral mar-

gins of the *head* narrowly black; a broad black streak runs down the centre of the insect, and is widest at the base of the *pronotum*; it then narrows to the apex of the *scutellum*, where it terminates in a short black dash; the black streak is divided down its centre by a narrow yellow line extending from the central lobe of the face to about the middle of the *scutellum*.

Head.—*Face*: central lobe yellow or fuscous yellow, somewhat convex from the middle to the apex; side lobes distinctly constricted before the apex, are rounded and enclose the central lobe, leaving a small notch between them; lateral margins narrowly black. A black-punctured streak runs down the centre of the head, commencing almost in a point at the apex, gradually widening until about in a line with the middle of the central lobe, where it slightly curves and then continues almost of the same width to the base of the head; the black streak is divided down the centre by a narrow yellow line extending from the central lobe to the base. *Antennæ* red, first and second joints yellow. *Eyes* black. *Ocelli* reddish. *Rostrum* yellow, apex black.

Thorax.—*Pronotum*: lateral margins narrowly yellow, within which is a black streak, widest next the hinder angles; basal region transversely more or less inclined to fuscous; posterior margin across the *scutellum* very narrowly yellow; the broad black streak down the centre of the disk divided by the narrow yellow line slightly disappears before reaching the posterior margin. *Scutellum* somewhat broad; basal angles with a short punctured black channel; lateral margins from the centre to the apex generally pale; down the centre is a broad black streak, terminating at the apex in a short black dash; the black streak is divided by a narrow yellow line extending from the base to about the middle of the disk; punctures at the base larger than those on the sides and apex. *Elytra* black-punctured, similar to those on the apex of the *scutellum*. *Corium*: nerve yellow, unpunctured and with a row of fine punctures on its inner margin; interior margin below the middle of the *scutellum* more or less piceous. *Membrane* clear; first exterior nerve piceous. *Sternum* ochreous, sides and in front black-punctured; base of first and third pairs of legs with a large black puncture, second with two. *Legs* ochreous or yellow: *thighs*, first pair on the underside thickly black-punctured, second and third at the apex finely black-punctured, in the latter sometimes almost obsolete, all the pairs with two large transversely placed black spots on the inside a little before the apex: *tibiae*, *tarsi*, and *claws* yellow; apex of the last dark piceous.

Abdomen above black, beneath ochreous or yellow, with six

underneath and adjoining each eye a small black spot. *Antennæ* green; apex of the third joint and upper half of fourth and fifth black.

Head finely crenulate punctate; anterior margin adjoining each eye slightly yellowish. *Antennæ* green; third joint, apex black; fourth and fifth joints yellow, the former green at the base, apical half black; the latter with the apical two thirds black, apex brownish. *Eyes* black or pitchy black. *Ocelli* yellow, with piceous centres. *Underside*: adjoining each eye and close to the anterior margin is a small black spot. *Rostrum* greenish or yellowish; apex narrowly black.

Thorax.—*Pronotum* finely crenulate punctate; lateral margins very narrowly yellowish, the extreme edge with an exceedingly fine black line. *Scutellum* crenulate punctate; beyond the middle the punctures are coarser; base generally with indications of three small yellow spots, one in the centre, and one on either side: these latter are considerably nearer to the centre than to the basal angles, at which there is a small black puncture. *Elytra*: *corium* finely crenulate punctate. *Membrane* pale. *Legs* and *tarsi* green; *claws* black.

Abdomen: underside very finely punctured, basal half deep violet, apical half green; exterior angles of the segments very narrowly black. *Underside* green, thickly punctured, and with a yellow central line. *Connexivum* above green, finely and irregularly punctured.

Length $5\frac{1}{2}$ –6 lines.

Genus PALOMENA, Muls.

Palomena rubricornis.

Luteous, thickly and finely black-punctured; nerves of the *membrane* irregularly spotted with brown.

Head thickly and finely black-punctured, except a small space next the eyes. *Face*: central lobe distinctly shorter than the side lobes. *Antennæ* bright red; first joint luteous, black-punctured; second and third bright red; fourth red at the base, apical two thirds fuscous; fifth orange-red or yellow, apical half black. *Eyes* brown, with a pale margin. *Ocelli* red, somewhat inconspicuous. *Rostrum* luteous.

Thorax.—*Pronotum* most thickly punctured next the lateral margins; on either side of the centre, and behind two unpunctured eye-shaped patches situate at a little distance from the anterior margin, is a small luteous spot. *Scutellum* punctured as in the pronotum. *Elytra* the same, except at the base of the anterior margin of the *corium*, where a few of the punctures run into small irregular spots. *Membrane* very pale brownish,

with the nerves at irregular intervals, and sparingly spotted with brown. *Sternum* pale luteous, punctured, the punctures brownish; near the base of the first and second pair of legs is a small black spot. *Legs* luteous, spotted with black. *Thighs* not thickly spotted; the larger spots on the sides run somewhat in longitudinal rows. *Tibiae* more thickly and finely spotted. *Tarsi* yellow. *Claws* yellow at the base; apex black.

Abdomen above black or with a faint purple tinge; beneath luteous, with a few black punctures on each segment; diagonally from the spiracles and in the direction of the posterior margin of each segment is a small black spot. *Connexivum* above luteous, black-punctured beneath, the margin narrowly black; exterior angle of each segment brownish yellow.

Length 6 lines.

Genus ACANTHOSOMA, Curtis.

Acanthosoma scutellata.

Head and the anterior portion of the *pronotum* pale brownish ochraceous; hinder angles of the latter slightly recurved, black; apex obtuse. *Scutellum* with a large ochraceous or pale brownish ochraceous patch in the centre. *Elytra*: ♂ dusky luteous, anterior margin green; ♀ brown, anterior margin pale yellow.

Head narrowed in front, pale brownish ochraceous. *Face*: side lobes finely wrinkled transversely. *Antennae* green, third joint (except a broad ring at the base) fuscous, fourth and fifth dusky brown. *Ocelli* red. *Rostrum* yellow, apex black.

Thorax.—*Pronotum* anteriorly pale brownish yellow; posteriorly somewhat luteous with a greenish shade, and with a single transverse row of deep-red punctures adjoining the anterior margin, not reaching the anterior angles; disk, except a portion in front, black-punctured, the punctures placed somewhat close together and running in short irregular rows in various directions, the rows somewhat wide apart; central longitudinal line yellow, unpunctured; hinder angles black, slightly recurved, apex obtuse. *Scutellum* brown, with a large, almost heart-shaped, ochraceous or pale brownish ochraceous patch in the centre, around which are two or three rows of deep-black punctures; side margins, a short posterior central keel, and the apex unpunctured; in the ♀, apex yellow, and punctures deeper and closer together. *Elytra*: ♂ dusky luteous, ♀ brown, somewhat thickly black-punctured, the punctures not so deep as those on the pronotum; ♂ anterior margin as far as the first nerve green, base yellow; ♀ pale

yellow, the punctures coarser, deeper, and more thickly placed than on the disk, and not extending to the anterior margin in either sex. *Membrane* pale fuscous, nerves pale brown. *Prosternum* yellow, somewhat inclined to orange. *Legs* yellow: *thighs* somewhat inclined to orange-yellow.

Abdomen underneath yellow, like the prosternum.

Length, ♂ 5½, ♀ 6 lines.

An extremely conspicuous species, owing to the somewhat heart-shaped ochraceous spot on the scutellum. I have only seen a male and a female.

Genus ELASMUCHA, Stål.

Elasmucha Putoni.

Luteous, brownish, or greenish grey, somewhat sparingly black-punctured; basal angles of the *scutellum* whitish. *Membrane* with a transverse brown band irregularly dentate on both the upper and lower margins.

Head somewhat thickly black-punctured, except a narrow portion next the eyes. *Antennæ* yellow; apical two thirds of the fourth joint black; fifth black, base narrowly yellow. *Eyes* piceous or black. *Rostrum* yellowish, apical half of the last joint black.

Thorax.—*Pronotum* more sparingly punctured than the head, generally yellowish or bone-white in front as far as the transverse channel, which does not extend to the lateral margin, and is deepest at its extremities; lateral margins narrowly yellowish or bone-white; hinder angles produced into a short piceous or black tooth. *Scutellum* luteous or bone-white, punctured similar to the pronotum; disk with a lunate piceous patch next the base; basal angles narrowly yellowish or bone-white; generally a pale unpunctured and indistinctly elevated central line extends from the apex to the middle of the disk; margins round the apex slightly thickened, pale, and unpunctured. *Elytra*: *corium* black-punctured; between the anterior margin and the first nerve two to three longitudinal rows, the third generally interrupted near the middle, the other punctures are more irregular, except about two rows next the *clavus*, in which last also they are regularly disposed. *Membrane* pale, with a short, transverse, brown, irregular streak near the base, and a band of the same colour near the apex, dentate on both the upper and lower margins, leaving an oval pale patch at the apex of the anterior margin. *Sternum* yellowish or yellowish white, black-punctured. *Legs* yellow: *thighs* beneath with long, fine, erect pale hairs: *tibiae*

with long semierect pale hairs: *tibiae* brown, apex black.

Abdomen above pale chestnut junctions of the segments narrow or yellowish white, finely punctured black, exterior to each spiracle is which they are connected by a slight *nexivium* yellow, apex of the segment

Length 3½ lines.

Closely allied to the following

Elasmucha S.

Head yellow, black-punctured front, posteriorly with a greenish near the anterior margin a stout widening into a triangular form. *Antennæ* yellow; hinder angles recurved pale brownish yellow, black-punctured between the first nerve and the latter reddish.

Head yellow: *crown* with a the ocelli. *Face*: central and sides punctured, lateral margins and the ocelli unpunctured. *Antennæ* joint brownish. *Ocelli* red.

Thorax.—*Pronotum* in front yellow, next the anterior margin irregular rows of black punctures, ridge with four or five punctures; lateral margins yellow, black punctures; hinder angles apex acute. *Scutellum* yellow patch next the base; all the punctures; disk with a few punctures yellow, black-punctured, the longitudinal rows, following the outer anterior margin and the first and coarser than on the disk reddish. *Membrane* pale, apex middle of the posterior with a narrow margin and a portion of the latter connected by a transverse streak of the same colour. *Prosternum* yellow, sides. *Legs* yellow.

with long semierect pale hairs : *tarsi* brownish yellow : *claws* brown, apex black.

Abdomen above pale chestnut-brown, somewhat shining, junctions of the segments narrowly yellow ; beneath yellow or yellowish white, finely punctured on the sides : spiracles black, exterior to each spiracle is a small black puncture, to which they are connected by a slightly curved channel. *Con-nexivum* yellow, apex of the segments black.

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

Closely allied to the following species.

Elasmucha Signoreti.

Head yellow, black-punctured. *Pronotum* yellowish in front, posteriorly with a greenish tinge and black-punctured ; near the anterior margin a stout transverse unpunctured ridge, widening into a triangular form towards the thickened lateral margins ; hinder angles recurved, black ; apex acute. *Elytra* pale brownish yellow, black-punctured, the punctures coarsest between the first nerve and the anterior margin ; apex of the latter reddish.

Head yellow : *crown* with a few black punctures between the ocelli. *Face* : central and side lobes longitudinally black-punctured, lateral margins and the space between the eyes and the ocelli unpunctured. *Antennae* yellow, apex of the last joint brownish. *Ocelli* red. *Rostrum* yellow, apex black.

Thorax.—*Pronotum* in front to beyond the transverse ridge yellow, next the anterior margin with two or three transverse irregular rows of black punctures, centre of the transverse ridge with four or five punctures ; disk with a greenish tinge, and with short, somewhat remote, curved rows of black punctures ; lateral margins yellow, thickened, with a row of black punctures ; hinder angles recurved, black, base reddish ; apex acute. *Scutellum* yellow, with a large lunate black patch next the base ; all the margins with a row of black punctures ; disk with a few punctures. *Elytra* pale brownish yellow, black-punctured, the punctures somewhat in longitudinal rows, following the course of the nerves ; between the anterior margin and the first nerve the punctures are deeper and coarser than on the disk ; apex of the anterior margin reddish. *Membrane* pale, apex of the anterior margin and middle of the posterior with a large fuscous patch ; interior margin narrowly and a portion of the nerves posteriorly fuscous, the latter connected by a transverse zigzag line of the same colour. *Prosternum* yellow, finely black-punctured on the sides. *Legs* yellow.

Abdomen yellow, finely black-punctured on the sides; fourth and fifth segments next the middle with a large, brown, unpunctured patch.

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

Smaller than *E. Putoni*, to which it is closely allied; but the longer and recurved hinder angles of the pronotum; the black lunate patch on the scutellum, and the difference in puncturing will at once distinguish it from that species.

[To be continued.]

XXXVI.—Notes on the Sulphur-bottom Whale of the New-Zealand Whalers. By JAMES HECTOR, M.D., F.R.S. With a Note by Dr. J. E. GRAY, F.R.S. &c.

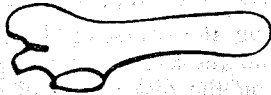
ON the 10th of June last a large whale, reported by the whalers to be a true "sulphur-bottom," was cast ashore in Port Underwood, on the south side of Cook Strait, and an assistant was dispatched from the Museum to secure the skeleton and take measurements.

The carcass was stranded on a rocky point close to deep water, and had to be dragged into a fresh position before it could be handled. It was so much decomposed that the skull and jaws dropped through the flesh during the removal; and on this account the external measurements are not reliable.

The whole of the skeleton was ultimately secured and placed out of reach of the tide to sweeten, the paddles and smaller bones being carefully buried.

The general form of the whale was slender in proportion to the height, the head appearing long and pointed, and the after-part produced, so that the greatest girth was behind the shoulder.

The throat and belly strongly plaited with longitudinal bars of hard skin, $2\frac{1}{2}$ inches wide, the interspaces having elastic skin.



Scapula.

The paddles appeared short in proportion to the general size; and there was a low recurved and pointed fin on the back just over the vent, and the same distance from the tip of the tail as the length of the head.

The brain-case is one third the length of the baleen slightly longer than broad, shading to pure white inside the 2 feet 6 inches.

The following measurements were

Total length	.....
Total length of skeleton	.....
Length of head	.....
Lower jaw	.....
Occiput to last rib	.....
Last rib to first caudal (<i>i.e.</i> vertebræ)	.....
Caudal series of vertebræ	.....
Length of bones in the paddles, from	.....
Width across phalanges	.....
Distance from anus to tip of tail	.....
(Penis 3 feet in front of anus.)	
Tip of tail to hump	.....
Height of hump	.....
Length of base of hump	.....
Length of shoulder-blade	.....
Height	.....

Fifteen ribs, longest 10 feet.
Stomach contained a quantity above, and yellow on the belly.

Note by Dr. J. E. GRAY

This is evidently not only a new species, but it is also the type of the shortness of its pectoral fins, recurved and pointed fin placed peculiar among all whalebone-whales (see figure).

The sulphur-bottom of New-Zealand is the sulphur-bottom of California, *sulphureus* by Cope. It is evident and may be entered in the catalogue.

XXXVII.—On Priority in the I in Foraminifera. By Messrs. P.

To the Editors of the Annals and

GENTLEMEN,

That portion of Mr. Carter's c
Ann. & Mag. N. Hist. Ser. 4. Vc