

hvardera sida finnes en oafbruten mörkbrun långsrand som, begynnande vid pronoti framkant, löper öfver höftgroparne på sternum och sedan fortsättes på buken, tätt invid sidokanten, ända till anus; 4) täckvingarne äro åtminstone 5 gånger kortare än abdomen och betäcka endast abdominalryggens basalkant, för öfrigt brungula med ljusare upphöjda ådror samt i ändarne rundadt tvärskurne, men sakna helt och hållet apikal-membran.

Famil. Cimicidæ FALL. p.

Cydus Morio FABR. På *Anchusa officinalis* vid Fardhems Kyrkogård d. 28 Juni.

Sciocoris umbrinus FALL. På torra backar under förtorkade Lichener vid Westerby d. 5 Juli.

Ælia acuminata LIN. Bland gräs i skogshagarne vid Kinnare (på Gottland) d. 2 Augusti.

Eurydema oleracea LIN. På buskar vid Sanda d. 26 Juni och i Berga skogsängar d. 5 Aug.

Cimex nigricornis FABR. { På buskar och blommor i
— *prasinus* LIN. { Berga skogsängar d. 5
— 6 Augusti.

Famil. Acanthosomidæ nob.

Acanthosoma grisea LIN. (= *Cimex agathinus* & *interstinctus* FABR.). På björkbuskar i Berga skogsängar d. 5 Augusti, talrikt.

— *hæmatodes* SCHILLER. Ett exemplar på en albuske i Berga park d. 3 Augusti.

Famil. Scutelleridæ WESTW. p.

Tetyra maura LIN. 2 exemplar fångades på Gottland i Juli.

Graphosoma nigrolineata LIN. På blommor vid Berga och Ålem i Calmare Län i Juli och Augusti, sällsynt. Pastor FRIGELIUS hade lyckats fånga en mängd exemplar af denna art.

little doubt that the last two classes of malformances of injuries received while the insects were ate; but for the first-mentioned kind of aberration hypothesis. I have not detected the suppression of the antennæ in any other section than the third and I should be very glad to hear if it has been seen in these or other sections.

(To be continued.)

ADDITIONS TO THE BRITISH FAUNA (HEMIPTERA).

BY J. W. DOUGLAS AND JOHN SCOTT.

(Continued from page 220.)

FAMILY 12.—PSALLIDÆ.

Genus 4.—*STHENARUS*, Fieb.

Species 2.—*STHENARUS ROSERI*.

CAPSUS ROSERI, *H. Schf. Wanz.* iv. 78, fig. 407 (1839.) *Meyer*, *Caps.* 105, 94 (1843). *Kirschb. Caps.* 87, 115 (1855).

CAPSUS (CAPSUS) ROSERI, *Flor.*, Rhyn. Liv. i. 560, 53 (1860).

STHENARUS ROSERI, *Fieb.*, *Europ. Hem.* 309, 1 (1861).

Orange-yellow, clothed with fine depressed golden-yellow hairs.

Head—black. *Antennæ*, 1st and 2nd joints black; 3rd and 4th reddish brown, the base of each narrowly black. *Rostrum* black.

Thorax—*Pronotum* reddish-yellow, finely wrinkled transversely, the hinder margin of the callosities, a central line and the posterior margin blackish-brown. *Scutellum* black. *Elytra* orange yellow; *Clavus*, inner margin narrowly black; disk from thence to the nerve suffused with blackish; *Corium* in the middle with a large, somewhat triangular, black patch between the 1st nerve and the claval suture, extending to the posterior margin; *Cuneus* red; *Membrane* blackish brown, between the apex of the cuneus and the lesser cell-nerve whitish; cell-nerves reddish, narrowly margined with whitish, lesser cell white. *Legs*, 1st pair reddish yellow; *tibiæ* at the apex blackish; *tarsi* yellow; 3rd joint and *claws* black (2nd and 3rd pair of legs of the specimen wanting).

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

We have only seen a single ♂ example of this species, which was taken by the Rev. T. A. Marshall at Battersea. It was submitted for determination to Dr. Fieber, who returned it as a variety of *Sthenarus*

Roseri. The typical form, according to Fieber and Flor, has the head, pronotum, antennæ, and scutellum black. Dr. Fieber also points out to us in a letter that the *Capsus saliceticola* of Stål is a variety of the above with black pronotum and elytra.

FAMILY 13.—CAPSIDÆ.

Genus 2.—AGALLIASTES.

Species.—AGALLIASTES WILKINSONI, Douglas and Scott.

Black. *Elytra* clothed with very short, depressed, yellowish hairs. *Tibiæ* without black spots. ♀ *Elytra* generally undeveloped, not covering more than half the abdomen; *clavus* not distinct; *cuneus* and *membrane* wanting.

Head—shining. *Antennæ*, 1st joint black, apex pale yellow; 2nd pitchy brown; 3rd and 4th brownish-yellow, 3rd at the base piceous.

Rostrum pitchy-brown, 1st joint and the apex of the 4th black.

Thorax—*Pronotum* in the ♂ with an X shaped depression between the callosities; in the ♀ the disk posteriorly wrinkled transversely.

Scutellum with a transverse channel in front, the anterior portion very convex; posteriorly flattish-convex, level with the *clavus*.

Elytra—*Clavus* pitchy brown, somewhat shagreened. *Corium* and *cuneus* pitchy brown, the anterior and inner margin of the latter darker; *Membrane* pitchy-brown, iridescent; cell-nerves white, narrowly margined on both sides with brown. *Legs*—*thighs* black, apex brownish yellow; *tibiæ* brownish yellow, with longish, erect, somewhat spinose black hairs, but without black spots; *tarsi* brownish-yellow, 3rd joint and *claws* brown.

Length ♂ $1\frac{1}{4}$, ♀ $\frac{3}{4}$ line.

Mr. T. Wilkinson, after whom we name the species, has met with it in some numbers at Scarborough, amongst moss at the roots of *Convallaria bifolia*, in May and June.

It is very closely allied to *A. pulicarius*, but may at once be separated from that species by the absence of the black spots on the *tibiæ*. It should stand as the first species in the genus in our Volume.

Species 4.—AGALLIASTES ALBIPENNIS, Fall.

PHYTCORIS ALBIPENNIS Fall. Hem. Suec. i. 107, 59 (1829). *Hahn*. Wanz. ii. 91, p. 177 (1839).

CAPSUS ALBIPENNIS, H. Schf., Nom. Ent. i. 82 (1835). *Meyer*, Caps. 79, 56 (1843). *Kirschb.* Caps. 92, 127 (1855).

CAPSUS (CAPSUS) ALBIPENNIS, Flor, Rhyn. Liv. i. 598, 78 (1860).

AGALLIASTES ALBIPENNIS, Fieb. Europ. Hem. 311, 2 (1861).

Grey or greyish black, with longish, depressed, silvery white hairs. ♂ narrower and more elongate than the ♀. *Tibiæ* with large black spots.

Head—black. *Crown*; hinder margin broadly brownish yellow. *Antennæ*, 1st and 2nd joints black, the apical half of the latter yellow; 3rd and 4th yellow. *Rostrum* yellow or brownish yellow, tip black.

Thorax—*Pronotum* pale or dark grey, more or less suffused with blackish gray on the sides and in front to behind the callosities. *Scutellum* black, basal angles orange yellow or yellow. *Elytra*—*clavus* inner margin from the scutellar angle to the apex black, the colour extending for a little way upon the disk; disk blackish gray. *Corium*, anterior margin pale grey, or with the apex more or less blackish gray; disk between the 1st nerve and the inside of the anterior margin white, occasionally more or less suffused with blackish grey; towards, and at the apex, between the 1st nerve and the claval suture blackish grey, darkest towards the apex; *Cuneus* white at the base, the apex broadly black; *Membrane* blackish, iridescent, between the apex of the cuneus and the lesser cell a somewhat triangular white patch; cell nerves white, cells brown; inner marginal nerve brown-black. *Legs*—*thighs* black; 1st and 2nd pairs at the apex frequently piceous; *tibiæ* brownish-yellow with large black spots, and long, erect, somewhat spinose, black hairs, the base narrowly black; *tarsi* brownish yellow; 3rd joint and *claws* piceous.

Abdomen—black.

Length ♂ $1\frac{1}{2}$, ♀ $1\frac{1}{3}$ line.

Several examples taken at the side of the bridge between Havant and Hayling Island, on *Artemisia maritima*, in September (Douglas). Immature specimens are of a uniform pale gray colour.

FAMILY 14A.—BOTHYNOTIDÆ.

Genus—BOTHYNOTUS, Fieb.

♂ Longish oval, sides almost straight; ♀ broad oval, with undeveloped clytra.

Head—viewed from above short, vertical in front, $2\frac{1}{2}$ times wider across the eyes than long, posteriorly produced into a short neck, its sides very convex. *Crown* almost horizontal, flattish-convex. *Olypeus* convex, nearly parallel with the anterior margin of the eyes; apex in a line with the base of the antennæ; antenniferous

processes very short, in a line with the underside of the eyes
Face triangular, central lobe broad, longish, convex, produced
 beyond the clypeus; side lobes short, somewhat triangular, and
 slightly rounded outwardly. *Antennæ* shorter than the body
 1st joint cylindrical, a little longer than the head, its entire length
 reaching beyond the end of the face; 2nd $2\frac{1}{4}$ times longer than
 the first, in the ♂ stoutish, almost cylindrical, in the ♀ slightly
 clavate; 3rd and 4th filiform, together shorter than the 2nd; 4th
 $\frac{2}{3}$ of the 3rd. *Eyes* very prominent, projecting considerably beyond
 the anterior margin of the pronotum; viewed from above hemi-
 spheric, from the side oval. *Rostrum* short, reaching to the end
 of the mesosternum.

Thorax—*Pronotum* trapeziform, $1\frac{1}{2}$ time as broad on the posterior
 margin as long; anterior margin in the ♂ almost straight, and
 with a raised collar; behind the latter a transverse depressed
 space bounded posteriorly by a deep curved channel, its extremi-
 ties terminating a little within the anterior angles; in the ♀ the
 collar is flat; sides straight; posterior margin in the ♂ straight
 across the scutellum, rounded towards and at the hinder angles;
 disk convex, very much deflected to the head from in a line with
 the base of the elytra; in the ♀ the posterior margin is slightly
 concave across the scutellum, and somewhat raised; disk hori-
 zontal, almost flat as far as the channel. *Scutellum* triangular,
 equilateral, convex, raised above the clavus, with a transverse
 channel in front, the anterior portion concealed beneath the pos-
 terior margin of the pronotum. *Elytra* in the ♂ longer than the
 abdomen, in the ♀ undeveloped, without cuneus or membrane;
Clavus convex, deflected to the corium; *Corium* in the ♂ almost
 flat, anterior margin slightly reflexed; in the ♀ elevated towards
 the apex of the clavus; *Cuneus* long, triangular. *Legs* thin;
thighs of almost equal thickness, somewhat cylindrical; *tarsi*, 3rd
 pair, 1st and 2nd joints of almost equal length; 2nd shortest.

Figure 3 (♂ & ♀) Ent. Ann. 1866.

Species—*BOTHYNOTUS MINKI*, Fieb.

BOTHYNOTUS MINKI, Fieb. Wiener Entomol. Monatschrift, viii. 77,
 Taf. 2, fig. 7 (1864).

♂ Shining, pitchy black, or with a faint greenish-brown tinge;
 clothed with fine, erect, pale yellowish hairs. *Legs* red.

Head—black; *Face*, side lobes reddish. *Antennæ* pitchy brown, sparingly clothed with longish, very fine, pale yellowish hairs. *Rostrum* piccous.

Thorax—*Pronotum* black, rugose, thickly and very deeply punctate, the depressed portion alone smooth and somewhat convex. *Scutellum* black, wrinkled transversely, depressed in the centre at the transverse channel. *Elytra* somewhat diaphanous; *Clavus* pitchy black, finely wrinkled transversely; *Corium* pitchy-yellow, the anterior margin, 1st nerve, and a narrow space adjoining the clavus pitchy-brown; *Cuneus* pitchy or reddish brown; anterior margin at the base rounded, and leaving a small but distinct notch; *Membrane* pitchy-brown, finely but irregularly wrinkled longitudinally, clothed with very fine short hairs; cell-nerves black. *Legs*—*thighs* and *tibiae* red, the latter narrowly brownish at the apex; *tarsi* brown; *claws* reddish.

Abdomen pitchy-black, clothed with fine, pale yellowish hairs.

Length 2—2½ lines.

♀ Black, shining, clothed with fine, erect, yellowish hairs. *Legs* very pale reddish yellow.

Head—reddish; *Crown* with a slightly curved blackish line on each side of the centre extending to the inside of the antenniferous processes; *Face*, central lobe black. *Antennæ*, 1st joint reddish or brownish yellow, base and apex narrowly blackish; 2nd, 3rd, and 4th pitchy-black.

Thorax—*Pronotum* rugose, the punctures deeper than in the ♂. *Scutellum* wrinkled transversely, with a faint central keel extending from the apex to the transverse channel, disk depressed on either side next the latter. *Elytra* undeveloped, without cuneus or membrane; *Clavus* and *Corium* rugose, anterior margin of the latter thickened, apex rounded. *Legs*—*thighs* very pale reddish-yellow; *tibiae* pale yellow, clothed with somewhat erect, fine, yellowish hairs; *tarsi* and *claws* pitchy-brown.

Abdomen entirely black, clothed with pale yellowish hairs; *Connexivum* broad, perpendicular, and somewhat reflexed inwardly.

Length 1¾ line.

Four specimens of this insect were taken in July last by Mr. D. Sharp, on the hills between Loch Long and Loch Lomond, at a height of about 1500 feet.

(To be continued.)

NOTES ON COLLECTING, MANAGEMENT, &c. (LEPIDOPTERA.)

BY H. G. KNAGGS, M.D.

THE CATERPILLAR STATE (continued from page 114).

MANAGEMENT—Feeding.

The kind of food having been determined upon, a few hints as to collecting it, &c., may be added. As a general rule food, like fruit, should be gathered early in the morning, and if conveyed any distance, packed very lightly. When, however, intended for juvenile larvæ which are being reared on the air-tight principle, it must not be plucked until the morning sun has dispelled the dew from its surfaces; though for more advanced individuals, when fed in ventilated situations, this same dew, or the moisture caused by a shower or even by the water tap, gives an invigorating fillip to the appetite which cannot be otherwise than healthful. It may be noted here that when food is too wet the quickest plan to dry it is:—having placed it in a towel, the four corners of which are held in one's hand, to swing it round and round, and thus get rid of the extra dampness by centrifugal force, whereby the plant is not bruised, as would be the case if shaking were resorted to to dislodge the moisture: or it may be dried nicely in the draught caused by opening a window-sash two or three inches, and placing the food half a foot inside the window.

The more mature foliage is generally chosen by larvæ, but by no means invariably so, since many appear to prefer the young tender shoots, and of course in some cases even unexpanded buds.

Nearly all larvæ like their food healthy and fresh: but the risk of their being injured in changing it, often makes it advisable to be content with clipping the ends off the twigs, &c., which go into the water; and indeed this practice will keep the food good for a long time. There are, however, some special and curious exceptions to the rule that fresh healthy food is preferred, for, while the larva of *Aleucis pictaria* selects the stunted unhealthy-looking sloe-bushes, *Cidaria* (?) *sagittata* actually causes its food to wither before partaking of it; and in the case of *Petasia nubeculosa* careful feeding with fresh food seems to fail, though a stale dryish diet affords a far greater likelihood of success.

It sometimes happens, even in Nature, that eggs hatch, and hibernating larvæ come forth, before the requisite food is in leaf or even in bud, in which case unopened buds, if to be found, may be split and offered with considerable chances of success; they must, however, be frequently renewed, and not allowed to dry up. By this means with care, and luck on our side, we may manage to keep our larvæ going while we look out for a stray example of a food-plant, in some sheltered nook or other, perchance more forward than the rest of its species, or till buds have in due time expanded into little leaves: but if not even buds are obtainable, then our only alternatives lie between supplying peeled or rasped twigs and bark, finding a "substitute," or leaving our *protégés* entirely to their fate.

There are some larvæ, not altogether polyphagous, for which it seems important—even necessary—to provide an alternative diet: thus it has been recommended to feed *Diphthera Orion* on oak and birch, *Noctua neglecta*, and perhaps, too, *Agrotis agathina* on heath, sallow, &c., and *Cerastis vaccinii* has been found to thrive best on oak and dock.