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Mr. Blackmore exhibited *Lepidoptera* and *Coleoptera* captured by him at Tangiers during last winter. Among them was a long series of the true *Anthocharis Eupheno*, Linné. A beetle, *Pimelia scabrosa*, was remarkable for its monstrous antennæ, these organs being furcate.

Mr. F. Moore exhibited cocoons of a species of *Sagra* from Bombay, collected by Mr. Newton. These cocoons were placed, many together, in large galls, or swellings of the stems, of *Cocculus macrocarpus*, a creeping plant.

The President read an extract from a letter from Mr. Everett, from Sarawak, remarking on cases of mimicry in some spiders and caterpillars, these creatures having a most deceptive resemblance to pieces of bird's dung.

Mr. Müller exhibited galls on *Ammophila arundinacea* found by Mr. Trail, near Aberdeen.

Prof. Westwood made some observations on certain minute *Acari*, especially with reference to a species which causes the minute galls on the leaves of the pear trees. This species, together with that infesting the buds of black-currant, and others, formed a distinct group distinguished by the possession of only four legs, and he proposed to institute for their reception a genus under the name of *Acarellus*, the pear species being *A. pyri*. Mr. Müller suggested that these forms were identical with those described by Dejean under the name of *Phytopus*.

Mr. Jenner Weir communicated "Further observations on the relation between colour and edibility of *Lepidoptera* and their larvæ."

Mr. A. G. Butler read a "List of species in a collection of Butterflies sent by Mr. Ansell from Kinsembo, S.W. Africa."

Mr. H. W. Bates read "Contributions to the Insect-fauna of the Amazons (*Coleoptera*; *Longicornia*, Fam. *Cerambycidae*).

Mr. F. Walker communicated a "List of *Hymenoptera* collected by Mr. J. K. Lord in Egypt and Arabia."

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## ON CERTAIN BRITISH HEMIPTERA—HOMOPTERA.

BY JOHN SCOTT.

(Continued from p. 29.)

Descriptions of new species of the Genus *Liburnia*, Stål.

Species 6.—LIBURNIA SCOTTI.

*Delphax pallidulus*, Marshall, Ent. Mo. Mag., i, 201, 3 (1865).

*Kelisia Scotti*, Fieb. (M.S.).

*Developed form*, ♂ and ♀. Pale ochreous. *Abdomen* yellow, genital segment posteriorly snowy-white.

*Head*: cheeks, ocelli, and a spot lower down next the inner margin, black.

*Thorax*: pronotum with a small black spot at the posterior angles. *Elytra*: corium with an ovate black spot at the apex, or continued as a more or less broad line along the middle nerve, as far as the transverse nerves. *Sternum* ochreous. *Legs* ochreous. *Claws* dark brown.

*Abdomen* pale ochreous, margins of the segments above more or less black; genital segment snowy-white.

*Var. a.* A somewhat triangular spot at the apex of the clavus, a short, narrow streak along the suture near the base, and an oval spot at the apex of the corium black.

*Var. b.* Nearly the entire elytra black, the oval spot at the apex darkest; the entire margin, a patch near the base of the clavus, and another in a line with the transverse nerves, pale ochreous.

Length  $1\frac{1}{4}$ — $1\frac{3}{4}$  line.

This is not, as was supposed by the Rev. T. A. Marshall at the time he described the insect, the *D. pallidulus*, Boh. The latter insect is smaller, paler, and without a vestige of dark markings on the elytra. We have compared it with a true type of the insect, described by Boheman, kindly forwarded to us by Dr. Stål, to whom we would here express our thanks for this, as well as for types of other of Boheman's species.

Local, but abundant where it occurs. Near Leicester (Marshall); Glanvilles Wootton (Dale); Sallow pit, Lee, and Abbey Wood Marshes, on *Arundo phragmites* in September and October.

*Var. b* is much rarer than the other forms.

### Species 13.—LIBURNIA BOLDI, *n. s.*

*Undeveloped form, ♀.*

*Head:* crown yellow, the two basal foveæ distinct and somewhat deep: *keels* white, interstices black, as are also those of the forehead. *Face* and *clypeus* yellow: *keels* of the former white, the middle one on each side, and the side ones interiorly narrowly margined with black. *Antennæ* brownish-yellow. *Eyes* brown.

*Thorax:* *pronotum* and *scutellum* yellow, with a greyish shade, *keels* distinct, paler than the disc, side *keels* of the former almost reaching to the posterior margin. *Elytra* yellowish-grey, barely covering half of the abdomen, posterior margin rounded, nerves distinct but not prominent, nor granulated: *clavus*, apex with a short, narrow, dark brown streak. *Legs* yellow, with a slight fuscous shade: *thighs*, third pair, with a black longitudinal streak on the upperside: *claws* black.

*Abdomen* above, brownish-yellow, darker on the sides, side margins orange-yellow, exterior margin of the segments black, underneath black or pitchy-brown, margins of the segments orange-yellow, genital segments brown.

Length 1 line.

Most nearly allied to *D. distincta*, Flor, but the face between the keels is not black, the elytra not so yellow, nor the marginal nerve white, as in that species. On the other hand *distincta* is without the short dark brown streak at the apex of the clavus.

A single ♀ example of this insect was captured by Mr. T. J. Bold, after whom we have much pleasure in naming it, in Seghill Dene, near Newcastle-on-Tyne, in May.

Species 14.—LIBURNIA CAPNODES, *Fieb.* (M.S.).

*Developed form*, ♀. Keels of the head and face concolorous.

*Head* pale brownish-yellow; *crown*, the three foveæ distinct, the two basal ones deepest. *Face*, *clypeus*, and *cheeks* pale brownish-yellow. *Antennæ* pale brownish-yellow, 2nd joint somewhat fuscous. *Eyes* brown.

*Thorax*: *pronotum* and *scutellum* pale brownish-yellow, side keels of the former curved round just beyond and running parallel with the posterior margin of the eyes; keels of the latter fine but distinct, disc depressed posteriorly. *Elytra* pale smoky-yellow, almost transparent; all the nerves brown, distinctly and regularly granulated with black: *clavus*, apex of the marginal nerve blackish. *Legs* pale fuscous-yellow; *tarsi*, apex of the 3rd joint and claws brown.

*Abdomen* above, dark brown, paler towards the apex; underneath, brownish-yellow, lower margins of the segments more or less broadly black, segments themselves with two or three scattered black punctures; genital segments and ovipositor brownish-yellow. Length  $1\frac{1}{2}$ -line.

Unlike any other species of the genus, and will be at once recognised by the uniform brown nerves, and minute, but distinct, black granules thereon.

A single ♀ example taken somewhere in this neighbourhood in October, 1863, but the locality not recorded.

Species 15.—LIBURNIA SIGNORETI, *n. s.*

*Undeveloped form*, ♂.

*Head* yellow, with a slight fuscous shade; *crown*, the three foveæ distinct, the two basal ones deepest. *Face* and *clypeus* yellow, *keels* slightly paler, middle keel of the former furcate on the forehead, a little above the lower margin of the eyes; *cheeks* yellow; *ocelli* black. *Antennæ* yellow, with a slight fuscous shade, 2nd joint nearly twice as long as the 1st, reaching to beyond the clypeus suture. *Eyes* black.

*Thorax*: *pronotum* yellow, with a slight fuscous shade, *keels* distinct, side keels curved outwardly and terminating before reaching the posterior margin; *scutellum* yellow, with a slight fuscous shade, keels distinct, apex finely wrinkled transversely. *Elytra* pale fuscous-yellow, reaching to beyond the apex of the abdomen, and somewhat narrowed posteriorly, posterior margin rounded; nerves brown, prominent, with distinct darker granules placed somewhat thickly and at regular intervals, the 1st nerve, next the anterior margin, as far as the bifurcation, without or with only one or two granules. *Legs* dark fuscous; *claws* black.

*Abdomen* black, base broadly yellow, last segment margined with white; genital segment black. Length 1 line.

Rather larger and stouter than *D. adela*, Flor, to which it is allied, but the distinct dark granules on the elytra, and the different form of the styloid processes easily distinguish it from the last named.

Taken in the marshes near Abbey Wood, in June, and named after Dr. Signoret, for his great kindness in assisting us by the loan of examples of several species of this genus.

## Species 17.—LIBURNIA MELANOPACHYS.

*Delphax melanopachys*, Fieb. (M.S.).*Undeveloped form*, ♂.

*Head*: crown clear brown, the three foveæ deep and distinct, *keels* acute and prominent. *Face* (except the forehead), *clypeus*, and *cheeks* black. *Antennæ* clear brown, 2nd joint about  $1\frac{1}{2}$  time longer than the 1st.

*Thorax*: *pronotum* clear brown, *keels* acute and prominent, posterior angles broadly black; *scutellum* clear brown, *keels* distinct, sometimes the middle keel and a narrow margin on either side, especially towards the apex, blackish; sides, beyond the side keels, black. *Elytra* about two-thirds the length of the abdomen, lacquer-yellow, shining, somewhat transparent, nerves prominent, unpunctured; posterior margin rounded. *Sternum* black. *Legs* yellow; *tarsi*, 1st and 2nd pairs, brown, 3rd, yellow.

*Abdomen* above, pitchy-brown; underneath black; genital segment black.

Length, ♂, 1 line.

Altogether a larger species than *L. venosa*, to which it bears a great resemblance, but it is at once to be distinguished from it by the characters on the pronotum and scutellum, as given above.

The peculiar lacquer-yellow colour of the elytra is only met with, at least amongst British species, in *L. venosa*, and the present insect, but in the former it is not nearly so clear as in the latter.

The discovery of this interesting species is due to Mr. T. J. Bold, who took a single ♂ specimen in Gosforth Woods in October.

Species 25.—LIBURNIA FIEBERI, *n. s.**Undeveloped form*, ♂.

*Elytra*: posterior margin with two white oblong spots, the nerves faintly spotted with black.

*Head*: crown yellow, the three foveæ distinct, basal ones deepest; forehead yellow. *Face* fuscous-black; *keels* yellowish, base and apex narrowly margined with yellowish, and on each side of the middle a transverse yellowish line; *cheeks* fuscous-black. *Antennæ* yellow, 2nd joint stout, somewhat brownish towards the apex.

*Thorax*: *pronotum* brown, beyond the side keels black, posterior margin brown; *keels* acute, prominent; *scutellum* brown, beyond the side keels black; *keels* acute, prominent. *Elytra* pitchy-brown, not covering half of the abdomen, posterior margin truncate, angles rounded; *clavus* yellowish-white, scutellar margin narrowly pitchy-brown, apex with a large, somewhat oval, black spot; *corium*, posterior margin white, divided in the centre by a black spot, nerves faintly spotted with black. *Sternum* dark brown. *Legs* pale fuscous-yellow; *tibiæ*, 1st pair slightly darker before the apex; *thighs*, 3rd pair, piceous; *tibiæ* fuscous-yellow, darkest towards the base, apex and spines pale yellow; *tarsi* yellow, 1st joint, except the apex, pale fuscous.

*Abdomen* above, brownish-yellow, with a black streak along the sides; side margins black, with a small yellow spot at the lower angle of each segment; genital segment yellow, sides piceous; underneath black, genital segment yellow.

Length 1 line nearly.

*Undeveloped form*, ♀.

Very similar to the ♂ in all respects, except that the posterior margins of the segments of the abdomen, on each side of the dorsal line, are black.

Length 1 line.

Larger than *L. lepida*, and at once to be distinguished from it by the absence of the minute white spots on the pronotum, and the less prominent black spots on the elytra.

We know of only two examples: one (♀) taken by Mr. T. J. Bold, in Gosforth Woods, near Newcastle-on-Tyne, in October; and one (♂) taken at Abbey Wood, in July (Scott).

Species 29. — LIBURNIA NIVEIMARGINATA.

*Delphax thoracicus*, Marshall, Ent. Mo. Mag., iii, 269 (1867).

*Undeveloped form*, ♂.

*Elytra* black, posterior margin white. *Abdomen* black, last segment above, and the genital segment, margined with white.

*Head* brown; *crown*, the two basal foveæ distinct but not deep, the anterior one faint. *Face* and *clypeus* dark brown; *keels* paler, on the forehead almost obsolete; *cheeks* brown. *Antennæ* brownish-yellow.

*Thorax*: *pronotum* white, the anterior margin brown; *keels* distinct; *scutellum* yellowish-white, middle keel more distinct than the side ones. *Elytra* black, shining, half the length of the abdomen, posterior margin rounded, white, nerves prominent. *Legs* fuscous-brown; *tibiæ* and *tarsi* paler, 3rd joint of the latter, black.

*Abdomen* black, shining, margin of the last segment above, white, side margins very narrowly pale; genital segment above, and the posterior margin on the sides, narrowly margined with white.

*Undeveloped form*, ♀.

*Scutellum* yellowish or white. *Elytra* pale brownish, posterior margin white. *Abdomen* brown, darkest on the sides. All the other characters as in the ♂.

Length, ♂, 1; ♀, 1½ lines.

Most nearly allied to *L. leptosoma*, but it is larger than that species, and differs from it in the absence of the pale sutural region of the elytra, and by having the scutellum white.

Taken by the Rev. T. A. Marshall at Wimbleton, in September, on marshy places. He referred it to the *D. thoracicus*, Stål., but as that insect is merely the developed form of the ♀ of *mæsta*, Boh., the above name has been proposed instead thereof.

Species 33.—LIBURNIA DALEI, *n. s.**Undeveloped form, ♂.*

*Head* yellow: *crown*, the two basal foveæ distinct, the anterior one appearing as a deep puncture. *Face* widest below the eyes, the middle keel distinct but not prominent: *clypeus*, middle keel distinct. *Antennæ* yellow, second joint twice as long as thick at the base. *Eyes* purplish.

*Thorax*: *pronotum* yellow, *keels* distinct; *scutellum* deep black, shining, keels fine but distinct, sides and apex narrowly yellow: *elytra* yellow, not covering half of the abdomen, posterior margined rounded, nerves not granulated. *Sternum* yellow: *mesosternum*, sides black, apex narrowly yellowish. *Legs* yellow; *coæ* of all the pairs anteriorly black: *tarsi*, apex of the third joint and claws black.

*Abdomen* black, shining, side margins and a very narrow dorsal line yellow, two last segments clear yellow; genital segment above clear yellow, sides and underneath black. Length  $\frac{3}{4}$  line.

♀ Unknown.

We are not acquainted with any species with which this insect is likely to be confounded.

The description has been drawn up from a single ♂ specimen in the collection of Mr. J. C. Dale, who has at all times been ready to aid and assist us, and after whom we have much pleasure in naming it. It was taken at Lulworth, Mr. Dale believes, in August, 1832.

## Species 38—LIBURNIA DOUGLASI.

*Delphax Douglasi*, Fieb. M.S.*Undeveloped form, ♂.*

*Head*: *crown* and forehead yellow; the three foveæ on the former distinct but shallow. *Face* and *clypeus* black, the former between the keels irregularly spotted with white; *cheeks* black, along the margin of the face, with three or four white spots. *Antennæ* brownish-yellow.

*Thorax*: *pronotum* yellow, *keels* somewhat indistinct; *scutellum* pale brown, beyond the side keels dark brown, keels distinct but not prominent. *Elytra* brown, more than half the length of the abdomen, posterior margin almost truncate, angles rounded, nerves fine but distinct, not granulated. *Legs* yellowish or pale brownish-yellow, with a fuscous shade.

*Abdomen* black; genital segment above brownish-yellow, sides black.

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

Totally unlike either of the two other species belonging to this section, and at once recognizable by its brown elytra. A single ♂ example was taken by Mr. Douglas at Folkestone, in September, 1862.



Genus 4.—DICRANOTROPIS, *Fieb.*

Head almost square.

*Undeveloped form, ♂.* Keels of the head and face white, interstices black. Crown, pronotum and scutellum greyish- or whitish-yellow, the latter with a black spot beyond the side keels. Elytra greyish-white, apex of the clavus with a short black streak. Abdomen black, with a narrow more or less interrupted white dorsal line. Genital segment large, the sides much projected and black; upper portion white .....1. *hamata*, Boh.

A common species and easily recognised by its curiously formed genital segment.

Genus 5.—STIROMA, *Fieb.*

Head transverse, the anterior margin of the crown but a little way in front of the eyes.

*Undeveloped form, ♂.* Head, pronotum and scutellum yellow, the two latter somewhat brownish. Face at the base with a black cuneate patch on each side of the furcate middle keel. Pronotum and scutellum each with a black patch beyond the side keels, posterior margin of the former pale. Elytra greyish-yellow, not covering half of the abdomen. Abdomen piceous, on the back pitchy-brown..... 1. *affinis*, Fieb.

*Undeveloped form, ♂.* Face at the base with a black patch on each side of the furcate middle keel, the patches generally united into one. Scutellum only with a black patch beyond the side keels. Elytra as in the former species. Abdomen castaneous, darker on the sides .....2. *nasalis*, Boh.

The easiest character by which to separate these species is in the markings on the pronotum and scutellum, whilst an examination of the structural differences of the styloid processes will establish their distinctness. In the former, the apex of these is somewhat of a fish-tail shape, and in the latter aculeate and curved.

*Undeveloped form, ♂.* Head and pronotum bright yellow, the latter frequently darker between the side keels next the posterior margin. Scutellum and elytra black, the latter covering more than half of the abdomen. Abdomen black or yellow. Genital segment above generally brownish or yellow.....3. *pteridis*, Boh.

Not readily confounded with any species that we know. The middle keels of the face are almost obsolete.

*Undeveloped form, ♂.* Head yellowish or brownish-yellow. Keels of the head and face white. Pronotum generally white. Scutellum yellow. Elytra more or less dark piceous, very narrowly somewhat paler along the scutellar region, posterior margin white. Abdomen black. Genital segment black, posterior margin above white.....4. *albomarginata*, Curt.

This is the *D. adelpha* of Flor. It is easily separated from similar species of *Liburnia* through its having two middle keels to the face.

*Undeveloped form, ♂.* Pronotum white, anterior portion clear pale yellowish-brown. Scutellum clear yellowish-brown, sides and apex white. Elytra clear pitchy-brown, shining, posterior margin white. Abdomen black, margin of the last segment white. Genital segment on the sides black, above and posterior margin white ...5. *mœsta*, Flor.

Somewhat larger than the last species, but extremely difficult to separate from it. The different form of the opening of the genital segment, when viewed from behind, the white margin to the last abdominal segment, and the white upper portion of the genital segment are the most striking outward characters whereby to distinguish this insect from *S. albomarginata*.

My task, as far as my knowledge of the species of *Delphacidæ* of this country is concerned, is now completed; and, although my investigation of this family, both anatomically and otherwise, has enabled me to treble the number of species hitherto recorded as British, yet I am far from believing that these are all its representatives to be met with in this country. Their minute size and great resemblance to each other in many instances (as noticed below), and their extremely active habits, rendering them so difficult of capture in the net, have led me to this conclusion. From Ireland I have not seen a single individual; and as to Scotland, whence I believe many additions will yet come, the few observers who have done anything have either been limited as to time, or merely taken such species as fell in their way while collecting insects of other Orders. Wales pairs with Ireland, and the South-coast and Isle of Wight only return one or two members.

Northumberland furnishes its quota, but the London district as yet bears off the palm, and Dorsetshire "labors hard to swell the list with the good things it yields." Except Berwickshire, these are the only places from which I have seen any examples of the *Delphacidæ*, and what may be expected from the yet unexplored parts, I leave my readers to judge for themselves.

Amongst the continental species most likely to be added to our lists in this group are *Delphax crassicornis*, Fab. (see genus 2, p. 24); *Liburnia stenoptera*, Flor, closely allied to *smaragdula* and *unicolor*; *L. hyalinipennis*, Stål, like a small *neglecta*; *L. paryphasma*, Flor, belonging to the *leptosoma* group; *L. straminea*, Stål; *L. modesta*, Fieb.; *L. flaviceps*, Fieb.; *L. limitata*, Fieb.; *L. protrusa*, Flor; *L. paludosa*, Flor; *L. flaveola*, Flor; *L. spinosa*, Mink (somewhat like *L. cognata*, but with a black abdomen, or with a row of yellow spots down the middle of the back); *L. Bohemanni*, Stål, somewhat resembling *pullula*, but larger, and *Metropis Mayri*, Fieb., a black species with a head shaped like that of *L. mesomelas*.

In conclusion, I consider it an extremely interesting point that the similarity of many of the species is so great that they can be broken up into what I call parallel pairs. Indeed, so similar are the creatures of each pair, both in the developed and undeveloped form (*i. e.*, with complete elytra and wings, or with incomplete elytra and no wings), that, except by the form of the genital segment and the styloid processes, it would be next to impossible to separate them. With the exception of the first-named, and of *L. basilinea*, Germ., all the species are British, and their diagnostic characters have been already given.

They are as follows:—

*Delphax crassicornis*, Fab., and *D. pulchella*, Curtis.

*Liburnia fuscovittata*, Stål, and *L. lineola*, Germ.

„ *smaragdula*, Stål, and *L. unicolor*, H. Schf.

„ *pellucida*, Fab., and *L. discolor*, Boh.

„ *speciosa*, Boh., and *L. basilinea*, Germ.

„ *Fieberi*, Scott, and *L. lepida*, Boh.

„ *leptosoma*, Flor, and *L. niveimarginata*, Scott.

„ *cognata*, Fieb., and *L. exigua*, Boh.

*Stiroma affinis*, Fieb., and *S. nasalis*, Boh.

„ *albomarginata*, Curtis, and *S. mæsta*, Flor.

The next paper will comprise the British species of *Oixiidæ*.

(To be continued.)