

Genus X. ERIOPIS, Bruzelius, 1859.

Eriopis elongata, Bruzelius.

1859. *Eriopis elongata*, Bruzelius, Skand. Amphip. Gamm. p. 85, pl. iii. fig. 12.
 1862. *Eriopis elongata*, Bäte, Cat. Amphip. Brit. Mus. p. 178, pl. xxxii. fig. 6.
 1868. *Eriopis elongata*, Norman, Ann. & Mag. Nat. Hist. ser. 4, vol. ii. p. 415, pl. xxi. figs. 7-10.
 1870. *Niphargus elongatus*, A. Boeck, Crust. Amphip. bor. et arct. p. 136.
 1872. *Niphargus elongatus*, A. Boeck, De Skand. og Arkt. Amphip. p. 403, pl. xxii. fig. 5.

Hab. This interesting species has occurred in two localities in our seas. In 1866 I took a specimen when dredging with my late friend Dr. Jeffreys in the Sound of Skye; and in 1885 I took a second in 80 fathoms between the isles of Cumbrae and Arran, in the Firth of Clyde, when dredging in company with my friend Mr. J. Murray in the 'Medusa,' the vessel of the Scotch Marine Station; *Mus. Norm.*

Distribution. Sweden (*Lovén*): *Mus. Norm.* South Norway (*Boeck*); West Norway (*Køren*).

EXPLANATION OF THE PLATES.

PLATE X

- Fig. 1. *Leucothoe imperatoris*, n. sp. Antennule and antenna.
 Fig. 2. The same. First gnathopod.
 Fig. 3. The same. Second gnathopod.
 Fig. 4. The same. Telson.
 Fig. 5. *Liljeborgia picea*, n. sp. Antennule and antenna.
 Fig. 6. The same. Dorsal portion of hinder segments of pleon.
 Fig. 7. The same. Second gnathopod, seen from without.
 Fig. 8. The same. Spines and setae of palm of second gnathopod, as seen from within.
 Fig. 9. The same. Last pereopod, terminal joints.
 Fig. 10. *Liljeborgia pallida*, Bäte. Last pereopod, terminal joints.
 Fig. 11. *Liljeborgia fasciicornis* (M. Sars). Last pereopod, terminal joints.
 Fig. 12. *Liljeborgia equicornis*, G. O. Sars. Last pereopod, terminal joints.
 Fig. 13. *Cheirocratus assimilis* (Liljeborg). The telson.
 Fig. 14. *Melhidippa macra*, Norman. Hinder margin of a segment of pleon.
 Fig. 15, 16. *Megaburopus agilis*, Norman. The mandible.
 Fig. 17. The same. Inner lamina of maxilliped.

PLATE XI

- Fig. 1. *Elaemopus rapax*, Costa. First gnathopod, ♀.
 Fig. 2. The same. Second gnathopod, ♀.

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Figs. 3-5. *Elaemopus rapax*. Second gnathopod, ♂, showing three stages of development of the hand.

- Fig. 6. The same. Last pereopod.
 Fig. 7. The same. Last uropods.
 Fig. 8. The same. Telson.
 Fig. 9. *Cheirocratus Sundevalli* (Liljeborg). First gnathopod, ♀.
 Fig. 10. The same. Second gnathopod, ♀.
 Fig. 11. *Cheirocratus assimilis* (Liljeborg). Second gnathopod, ♀.

PLATE XII.

- Figs. 1-3. *Cheirocratus Sundevalli* (Liljeborg). Three stages of development of hand of second gnathopod in male.
 Fig. 4. *Melhidippa macra*, Norman. First gnathopod.
 Fig. 5. The same. Second gnathopod.
 Fig. 6. The same. Last pereopod, the thigh (basos).
 Fig. 7. The same. Last pereopod, terminal joints.
 Fig. 8. *Melita dentata* (Kröyer). First gnathopod.
 Fig. 9. The same. Second gnathopod.
 Fig. 10. The same. Last pereopod, the thigh (basos).
 Fig. 11. *Gammarus locusta* (Linn.). The telson (one half).
 Fig. 12. *Gammarus marinus*, Leach. The telson.
 Fig. 13. *Gammarus campylops*, Leach. The telson.

XIV.—*Descriptions of new Species of Tenthredinidæ, Cynipidæ, and Chalcididæ in the Collection of the British Museum.* By W. F. Kirby, Assistant in the Zoological Department, British Museum (Natural History).

IN the present paper I offer descriptions of six interesting new species which have recently been received belonging to families of Hymenoptera which I had previously arranged.

Tenthredinidæ.

SELANDRIINÆ.

Selandria limbata.

Exp. al. 18 millim.

Female.—Head, antennæ, and jaws black, rhinarium and nasus pale yellow; thorax pale yellow above, with very large black spots on the frontal and lateral lobes, and with the sutures round the scutellum and postscutellum marked with blackish; prothorax beneath pale yellow, with a large black spot on each side, followed by a small one, the latter just before the front coxæ; mesospectus and mesopleura shining black; metaplectus pale yellow, with a large black spot on

each side; all the legs pale yellow, hind tibiae with an indistinct brownish spot at the tip on the inside; and the two apical joints of the four hinder tarsi dark brown. Abdomen luteous, the sides (especially beneath) brown, shading into blackish towards the tip. Wings hyaline, slightly clouded, with brown nervures; costal nervure and stigma yellow.

The male differs little, except that the hind tibiae are brown for most of their length on the inside.

Hab. Theresopolis, Brazil (*Frisstorfer*).

TENTHREDININÆ.

Siobla bicolor.

Exp. al. 15 millim.

Female.—Luteous; head, abdomen beyond the first four segments, and hind tibiae and tarsi black; the last two of three joints of the front and middle tarsi are also marked with black. Fore wings clouded hyaline, with dark brown stigma and nervures; hind wings clear hyaline.

Hab. Theresopolis, Brazil (*Frisstorfer*).

Tentredo Haberhaueri.

Exp. al. 22 millim., long. corp. 14 millim.

Female.—Black; mandibles yellow at base and red at tips; thorax strongly punctured on the sides; cenchri white; abdomen with the last three segments and at least a stripe above at the extremity of most of the preceding segments red; legs red, coxæ and trochanters, the tips of the hind tibiae, and a great part of the hind tarsi black; the front legs are varied with yellowish in front. Wings iridescent hyaline, with a smoky band crossing the lower part of the radial cells; the costal and adjacent nervures blackish, the others pitchy; stigma yellow.

Hab. Turkestan (*Haberhauer*).

Allied to *T. hybrida*, Evrein., from the Kirghis steppes; but the latter species has the stigma black, and the middle segments of the abdomen red.

Cynipidæ.

ONYCHININÆ.

Aspicera (?) nigricornis.

Long. corp. 6 millim.

Female.—Black, shining; legs dark red; ovipositor yellow.

low. Antennæ 14-jointed, as long as the body, black, scape pear-shaped, thicker at the extremity than the flagellum, half as long as the third joint; second joint annular, third to thirteenth of equal length, about four times as long as broad; terminal joint half as long again as the preceding and pointed at the tip; the antennæ are clothed with short hairs, most distinctly so towards the tip, and all the joints are well separated; all the joints except the scape, which is smooth and shining, are dull black and longitudinally striated. Head with a fovea behind each ocellus, the hindmost falling away to the occiput.

Prothorax transverse, with two contiguous foveæ in the middle above, and the sides clothed with grey hairs; mesothorax with the edges raised, and with four distinct and converging depressions above, the two innermost only reaching to the middle; scutellum with the edges raised, two large foveæ at the base, and a strong carina rising between them and running to the extremity of the long and strong spine; the mesothorax and scutellum with scattered raised bristles; metathorax clothed with grey hair.

Abdomen mostly black, smooth and shining, the first segment black, opaque, short, and very strongly longitudinally striated, the second segment inclining to rufous and longitudinally striated at the base; the remaining joints are smooth, the third occupying three fourths of the length of the abdomen, the apical segments very short.

Legs dull red, slender, except the coxæ, which are thickened at the base; sparingly clothed with whitish diverging bristles; tibiae with two slender, yellow spines at the tips; first joint of tarsi as long as the rest, the three following narrowed at their bases; a long pointed pulvillus between the claws.

Wings hyaline; fore wings slightly smoky, venation normal.

Hab. Theresopolis (*Frisstorfer*).

Allied to *A. rufipes*, Cress., from Cuba; but this species is only 1½ lines in length, and has reddish antennæ.

Chalcididæ.

CHALCIDINÆ.

Smicra gracilis.

Long. corp. 5 millim., exp. al. 10 millim.

Head above and behind, thorax, and hind femora black; eyes green; face (except mentum), scape of antennæ beneath,

petiole, four front legs, and hind tarsi yellow; antennæ, abdomen, hind trochanters, femora, and tibiæ mostly reddish; abdomen oval, about as long as the petiole, hind coxæ with a short upright spine above just before the tip; hind femora varied with blackish on the inside and on the outside at the tip; the upper surface varied with yellowish and the lower surface armed with seven or eight moderate-sized teeth; hind tibiæ with a blackish spot at the base, followed by a short yellow space; the rest reddish on the inside and browner on the outside. Wings hyaline, slightly clouded, costal nervure yellow at the base, but its extremity as well as the stigma dark brown.

Hab. Theresopolis (*Frühstorfer*).

Shape of *Thaumapus*, to which I should have referred it, but that the scutellum and metathorax appear to be entirely unarmed.

EUCHARINÆ.

Tetramelia (?) *meridionalis*.

Long. corp. 6½ lin., exp. al. 12 lin.

Femals.—Tawny yellow; head black, transverse, short and broad, longitudinally striated; antennæ placed high up on the face, black, tawny at base and tip and sometimes beneath, 12-jointed, scape short, second joint small, third as long as the three following ones, the rest gradually diminishing to the extremity, but all distinctly longer than broad; thorax very rugose, tawny yellow, a large spot on the base of the frontal lobe, a spot on each of the lateral lobes, more or less of the hinder sutures above, a stripe on the median line of the scutellum and its terminal forks, and the greater part of the pectus black; scutellum bidentate; metathorax with a curious, broad, half-wheel-shaped projection on each side; legs unarmed, tawny yellow, claws black; petiole tawny yellow, as long as the height of the abdomen; abdomen smooth and shining, vertical, four times as high as broad, black, the sides and the median line behind tawny yellow.

Hab. Theresopolis (*Frühstorfer*).

This species perhaps represents a new genus; but as it is possible that the structure of the appendages of the metathorax may differ in the sexes, I refer it provisionally to my genus *Tetramelia* (only known in the male sex, type *Schizaspidea plagiata*, Walk.), with which it agrees in all other essential characters.

XV.—Francolinus Altumi, Fischer and Reichenow, is the Male of F. Hildebrandti, Cabanis. By W. R. OGILVIE GRANT.

THE statement made in the above heading would at first seem almost incredible to any one who knows the two forms to which those names have been given; yet the evidence I shall put before my readers leaves no room for doubt that my assertion is correct.

Francolinus Hildebrandti was described and figured by Cabanis (J. f. O. 1878, p. 243, pl. iv. fig. 2) from a single female specimen obtained at Taita, which was armed on the right leg with a single sharp spur. The species is characterized by being dull brick-red on the under surface and having some of the feathers of the lower breast and belly margined with pale buff spots, while the feathers of the upper surface (except those of the mantle, which are more strongly vermiculated with black and white) are very finely vermiculated with reddish brown and black, and most have a narrow rufous shaft-streak.

Francolinus Altumi was described and figured by Fischer and Reichenow (J. f. O. 1884, p. 179, pl. ii.) from specimens obtained in Massailand, and referred by them to the group of Francolins including *F. Ruappelti* and *F. Clappertoni*, though really much more closely allied to *F. icterorhynchus* from Central Africa and *F. natalensis* from Natal.

It is characterized by having the feathers of the breast and belly white, with a subterminal, heart-shaped, black spot, while the upper surface and under tail-coverts are the same as in *F. Hildebrandti*.

Through Mr. H. C. V. Hunter's generous gift to the Natural-History Museum of the birds collected by him in Massailand our National Collection now contains a good series of each of the above so-called species. On examining the series of *F. Hildebrandti*, which was specially interesting to me as representing a species new to the collection, I noted the facts that all the specimens were sexed female and that all had at least a pair of sharp spurs, while in two examples a second and additional pair of spurs were fairly developed; at the same time I expressed an opinion that *F. Hildebrandti* would certainly prove to be the female of some other species. Not being then engaged in working at the Francolins, I determined to let the matter rest till I should have an opportunity of speaking to Mr. Hunter and hearing his opinion on the

subject. When this gentleman was last at the Museum I asked him how it was that he had obtained no male specimens of *F. Hildebrandi*, and very much to my surprise and pleasure found (though he had forgotten to mention it before) that he had not only arrived at the same conclusion as myself, but had solved the riddle long before on Kilima-njaro, and discovered that *F. Alumi* is the male and *F. Hildebrandi* the female of one and the same species.

Mr. Hunter had been considerably exercised in his mind by the one hand never being able to obtain the male of *F. Hildebrandi*, while on the other hand all the specimens he got of *F. Alumi* proved invariably to be males. As these two birds were always obtained in company by his collectors, the truth gradually dawned on him and was subsequently proved beyond a doubt by the dissection of a large number of specimens obtained for food.

On comparing the two birds the different points of resemblance are at once seen, viz. the plumage of the upper surface and under tail-coverts and the colour of the bill and legs, which are all practically the same in both; but, so far as I know at present, the extraordinary difference in the colour of the under surface in the sexes is unique in this genus. A still more extraordinary thing is that in the two apparently closely allied forms, *F. icterorhynchus* and *F. natalensis*, the females resemble the males but are without spurs.

The name *Francolinus Hildebrandi*, Cabanis, must therefore be used in future to designate this species.

XVII.—On *Angelopsis*, and its Relationship to certain *Siphonophora* taken by the 'Challenger'. By J. WALTER FEWKES.

[Plate VII figs. 1-3.]

ONE of the most interesting genera of *Medusæ* discovered in the depths of the Gulf-stream by the United States Fish-Commission steamer 'Albatross' is a new *Physophore* which was described a few years ago (1884) under the name of *Angelopsis* in my paper on the *Medusæ* of this region.

This genus is remarkable for its large float and the reduction in size and increase in thickness of the walls of the polyp-stem, which has the form of a semicartilaginous expansion with a cavity, and with its external walls covered with

the polypites, sexual bells, and possibly tentacles. It is also remarkable in possessing bud-like structures on the lower part of the float, near its junction with the base. These bag-like bodies recall in general appearance the form of the float itself, and somewhat resemble structures to which Hæckel has given a special name (aurophore) in certain related genera.

My original description of this strange *Siphonophore* was necessarily a short one, and for reasons beyond my control at that time the figures which were given of it were somewhat imperfect. Since the publication of the first notice of *Angelopsis* I have reexamined my types and have been able to make a dissection of the larger of them, from which study it is possible for me to add something to my first description, which, although superficial, is accurate as far as it goes. The present paper has in part been called forth* by Prof. Hæckel's report on the 'Challenger' *Siphonophora*, which contains descriptions of allied genera, the account of the anatomy of which throws considerable light on the interpretation of certain structures in *Angelopsis* the function of which was not wholly plain four years ago.

Among the interesting *Siphonophora* described or figured in the 'Challenger' Report already quoted are four new genera which differ from other known *Siphonophora* in very important particulars. Hæckel has found it necessary to form a new group for the reception of these genera, and assigns to it the name of *Auronectæ*. In this group he includes doubtfully my *Angelopsis*, and regards it as possibly the same as his genus *Auralia*. Although *Angelopsis* seems to be allied to *Auralia*, there are certain marked differences so far as I can make out from his meagre and unsatisfactory account of *Auralia*. Unfortunately Hæckel does not describe or figure his genus in the report † referred to, so that I am ignorant of some of the main characters of his *Auralia*. The genus *Angelopsis* is so different from other *Siphonophora* that there is a call for a more intimate knowledge of its anatomy.

* I have delayed my publication of the new facts embodied in this paper in the hope that it might be possible to collect *Angelopsis* alive and gather information in regard to its nectocalyces, tentacles, tentacular knobs, and other structures.

† The editor speaks of this work as a "Monograph of the whole class of *Siphonophora*." Any report which simply mentions the names of new genera and refers to publications yet to appear for descriptions of these novelties does not come up to the highest standard of what a "Monograph" should be.

Hæckel does not say whether his *Auralia* was taken by the 'Challenger' or not. The locality given for it, viz. "depths of the Tropical Atlantic," is also somewhat vague.