

there is no fresh nutriment for organized beings of any kind, has become untenable.

10. Life and temperature in the depths of the ocean are, in their variable relation, the points which at present deserve especial attention.

11. The showers of meteoric dust, or supposed ashes, have at present been proved to be, even in the case where they fell 380 sea-miles from land, of organic and terrestrial origin.

12. It is not perishable *Protococci* or *Ulvæ* or Lichens that principally constitutes the organic covering and soil of the ultimate islands in the Polar Sea; but the living creatures that form the first layer of solid earth are invisible, minute, free animals of the genera *Pinnularia*, *Eunotia* and *Stauroneis* with their siliceous loriceæ. Several species from the North Pole and the South Pole are identical.

XXIII.—*Descriptions of some British Chalcidites.* By FRANCIS WALKER, Esq., F.L.S.

Callimome Rasaces, Fem. *Cupreus purpureo varius, metathorace viridi, abdomine cyaneo basi rufo, antennis nigris, pedibus fulvis, alis subfuscis.* (Corp. long. lin. 2; alar. lin. 3.)

Body convex: head and thorax cupreous, tinged with purple, covered with minute scales disposed in little transverse striæ: head short, transverse, a little broader than the thorax: antennæ subclavate, black, as long as the thorax; first joint fulvous, long, stout, linear, black towards the tip; second cyathiform; third and fourth very minute; fifth and following joints to the club successively decreasing in length; club long-conical, acuminate, much more than twice the length of the eleventh joint: thorax elliptical, punctured sparingly and irregularly: prothorax large, subquadrate; its breadth exceeding its length; rounded on each side in front: scutum of the mesothorax large, its breadth slightly exceeding its length; sutures of the parapsides distinct, approaching each other; axillæ large, triangular, not conniving; scutellum nearly rhomboidal, of moderate size, abruptly decumbent behind: metathorax including the propodeon short, transverse, rugulose, mostly green: podeon extremely short: abdomen elliptical, subcompressed, smooth, dark blue varied with purple, as long as the thorax; metapodeon pale red, occupying rather more than one-fourth of the dorsum; octoon much shorter than the metapodeon; ennaton much longer? than the octoon; decaton as long? as the octoon; protelum, paratelum and telum short: oviduct a little longer than the abdomen: legs stout, fulvous: wings slightly fuscous; nervures piceous; humerus less than half the length of the wing; ulna more than half the length of the humerus; radius about one-fourth of the length of the ulna; cubitus extremely short, not so long as the radius; stigma of moderate size, emitting a short stout branch that points towards the tip of the radius.



Callimome *Ærope*, Mas. *Viridis, abdomine æneo, basi cupreo-viridi, antennis fulvo-fuscis, pedibus fulvis, femoribus basi fuscis, tarsis basi flavis, alis limpidis.*

*Male*.—Body convex: head and thorax brilliant green, covered with very minute scales so disposed as partly to form little transverse undulations: head a little broader than the thorax: antennæ clavate, fuscous above, fulvous beneath, as long as the thorax; first joint long, linear; second long-cyathiform; third and fourth very minute; fifth and following joints to the eleventh successively shorter and broader; club long-conical, more than twice the length of the eleventh joint: thorax oval: prothorax large, slightly narrower in front, its length much more than half its breadth: scutum of the mesothorax rather long; sutures of the parapsides very distinct, slightly curved, approaching each other; axillæ large, triangular, not conniving; scutellum rhomboidal: metathorax transverse, shining, decumbent: podeon extremely short: abdomen æneous, nearly linear, smooth, shining, slightly concave along the disc, covered excepting the metapodeon with very minute scales, shorter and narrower than the thorax; metapodeon bright green varied with cupreous, occupying more than one-third of the dorsum; octoon short; ennaton a little longer than the octoon; decaton longer than the ennaton; protelum as long as the decaton; paratelum and telum very short: legs fulvous, stout; coxæ green; thighs slightly fuscous towards the base; knees yellow; tarsi yellow at the base, fuscous at the tips: wings limpid, ample; nervures fulvous; humerus much less than half the length of the wing; ulna a little shorter than the humerus; radius hardly so long as one-fourth of the ulna; cubitus not more than half the length of the radius; stigma very small, emitting a little branch. Length of the body  $1\frac{1}{2}$  line; expansion of the wings 2 lines.

Found near Windsor, in June.

*Pteromalus domesticus* (Entomological Magazine, ii. 481), Mas. *Viridis, abdomen cupreum basi viride, antennæ nigræ, pedes nigri, genubus tarsisque albis aut flavis, propedum genubus tarsisque flavis aut fulvis, alis limpidis, nervis pallide fuscis.*

Body convex: head and thorax minutely squameous: head a little broader than the thorax: the middle ocellus very little in advance of the other two: antennæ filiform, stout, longer than the thorax; first joint long, slender; second cyathiform; third and fourth very minute; fifth and following joints to the tenth linear, successively but very slightly decreasing in length; club fusiform, twice the length of the tenth joint: thorax oval: prothorax transverse, very short, just visible above, rounded in front: scutum of the mesothorax short, slightly convex, its breadth much exceeding its length; sutures of the parapsides approaching each other, very indistinct; axillæ large, triangular, not conniving; scutellum subconical, or nearly pentagonal, the three fore-sides being applied to the axillæ and to the margin of the scutum between them; its scales are more minute than those of the scutum: metathorax very short, appearing trans-



versely just behind the scutellum : propodeon transverse, of moderate size, narrower behind, slightly decumbent, having a little ridge along its disc, and a rim on either side: podeon extremely short: abdomen flat, concave, smooth, shining, nearly linear, narrower and much shorter than the thorax; the segments minutely squameous; metapodeon occupying about one-third of the dorsum; octoon, ennaton, decaton and protelum of moderate and nearly equal size; paratelum short; telum very short: legs rather short and stout; the mesotibiæ and metatibiæ have two spines at their tips, the protibiæ only one: wings moderate; humerus much less than half the length of the wing; ulna less than half the length of the humerus; radius as long as the ulna; cubitus very long, a little shorter than the radius, slightly curved; stigma very small, emitting a short branch.

*Female*.—Head as broad as the thorax: antennæ subclavate, as long as the thorax; first joint slender, very long; second long-cyathiform; third and fourth very minute; fifth and following joints to the thirteenth short, closely joined together, in form like a long spindle which is about equal in length to the four preceding joints; club conical, more than twice the length of the tenth joint: abdomen round, concave, sculptured like that of the male, shorter but not narrower than the thorax; metapodeon occupying more than one-third of the dorsum; octoon and following segments to the protelum of moderate size, successively but slightly decreasing in length; paratelum and telum very short: sternum, coxæ and thighs scaly like the thorax: abdomen slightly keeled; dorsal segments passing underneath, not conniving nor contracted, but leaving a space between them where the ventral segments appear; these latter are equal in number to those of the dorsum, but unlike them successively increase in length from the base to the tip of the abdomen; along the last there is a channel from the base of which the oviduct emerges, but it does not extend beyond the abdomen.

In the month of May the leaves of the apricot-trees in my garden were eaten by multitudes of the larvæ of caterpillars of *Lozotænia Xylostæana*. The moth appeared in the middle of June, and shortly afterwards some of the pupæ disclosed an abundance of *Pteromalus domesticus*. In number the males were to the females in the proportion of two to five. In the following year the moth appeared again, but attacked the pear-trees instead of the apricot-trees. It was not infested by the *Pteromalus*, but I reared two other insects from the pupæ, one belonging to the *Ichneumonidæ*, the other a species of *Tachina*. Like two other species, *Pt. muscarum* and *Pt. tenuis*, the females are found on windows throughout the year; they sometimes appear in great swarms, and are perhaps parasitic on *Tortrix viridana* as well as on the insect mentioned above.

*Tetrastichus Rapo* (Annals of Natural History, vol. i.). In the month of August many insects of this species emerged from the cocoons of *Microgaster glomeratus*, Linn., that infests the caterpillars of *Pontia Brassicæ*. Thirty-eight specimens or more appeared, and the proportion of males to that of females was as one to four, or thereabouts.



*Encyrtus Epona*, Mas. *Piceus, subtus flavus, pedibus fulvis, antennis tarsisque piceis, scutello flavo, alis limpidis.* (Corp. long. lin.  $\frac{2}{3}$ ; alar. lin.  $1\frac{2}{3}$ .)

Body rather long and narrow, nearly flat, finely squameous, thinly clothed with short white hairs, piceous above, yellow beneath: head transverse, short, as broad as the thorax: eyes oval, of moderate size, encircled with yellow: ocelli near together on the vertex: antennæ piceous, filiform, slender, hairy, much longer than the body; first joint fusiform, long, slender, yellow beneath; second cyathiform; third and following joints to the ninth long, linear, successively decreasing in length; club fusiform, not longer than the ninth joint: thorax elliptical: prothorax transverse, narrower in front, larger than is usual in this genus: scutum of the mesothorax broad, forming one segment with the parapsides, yellow on either side; axillæ triangular, very large, almost meeting each other on the dorsum; scutellum yellow, obconical: metathorax with the propodeon and podeon very short: abdomen long-obconical, concave, narrower and a little shorter than the thorax; two or three segments visible on the dorsum: legs fulvous, long, slender, hairy; tarsi piceous; middle legs dilated, and their tibiæ armed with long spines as usual: wings limpid, narrow; nervures piceous; humerus much less than half the length of the wing; ulna about one-fourth of the length of the humerus; radius shorter than the ulna; cubitus shorter than the radius; stigma extremely small.

From the collection of the Rev. G. T. Rudd.

*Encyrtus Euryclea*, Fem. *Ater, capite cyaneo, antennis piceis flavo cinctis, pedibus flavis nigro cinctis, alis limpidis.* (Corp. long. lin.  $\frac{1}{3}$ ; alar. lin.  $\frac{2}{3}$ .)

Body black, flat, slightly shining: head blue, transverse, nearly as broad as the thorax: antennæ clavate, a little longer than the thorax; first joint long, piceous, rather stout, yellow at the tip; second joint fuscous, cyathiform; third and following joints to the ninth very small, successively increasing in breadth; third, fourth, fifth and sixth fuscous; seventh, eighth and ninth yellow; club piceous, fusiform, as long as all the joints from the third to the ninth: thorax oval: prothorax transverse, extremely short: scutum of the mesothorax broad, longitudinally rugulose; scutellum somewhat obconical: metathorax with the propodeon and podeon very short: abdomen long-obconical, depressed, narrower but not longer than the thorax: oviduct piceous: legs pale yellow, stout; a broad black band across each thigh and tibia; fore-tarsi fulvous; middle legs dilated and their tibiæ armed with long spines as usual: wings white; nervures yellow; humerus less than half the length of the wing; ulna thick, fulvous, not more than one-fourth of the length of the humerus; radius shorter than the ulna; cubitus as long as the ulna; stigma extremely small.

Found by Mr. Haliday at Holywood, near Belfast in Ireland.

*Encyrtus Pyttalus*, Fem. *Ater, pedibus piceis, antennis tarsisque fulvis, alis fuscis.* (Corp. long. lin.  $\frac{1}{2}$ ; alar. lin.  $\frac{3}{4}$ .)

Body black, convex, short, thick, broad, punctured: head trans-



verse, short, very large, roughly punctured, broader than the thorax; front convex: eyes oval, of moderate size: ocelli near together on the vertex: antennæ fulvous, slender, clavate, longer than the thorax; first joint long and slender; second cyathiform; third and following joints to the ninth small, nearly equal in size; club fusiform, much broader than the ninth joint and more than thrice its length: thorax hardly longer than broad: prothorax transverse, short, visible above: scutum of the mesothorax very short, forming one segment with the parapsides; axillæ small, not extending over the dorsum; epimera? large; scutellum obconical: metathorax with the propodeon and podeon very short: abdomen depressed, smooth, shining, shorter than the thorax; its breadth equal to its length: oviduct fuscous: legs piceous, stout; tarsi fulvous; middle legs dilated, and their tibiæ armed with long spines as usual: wings fuscous, small; nervures piceous; humerus less than half the length of the wing; ulna very short, not one-fourth of the length of the humerus; radius as long as the ulna; cubitus longer than the radius; stigma extremely small.

*Encyrtus Machæras*. Reared by Mr. Haliday from the coccus of the elm.

*Encyrtus argentifer*. *Encyrtus Paralia* is a variety of this species.

*Aphelinus Acætes*, Fem. *Fulvus*, *antennis piceis*, *pedibus flavis*, *alis limpidis*. (Corp. long. lin.  $\frac{1}{3}$ ; alar. lin.  $\frac{2}{3}$ .)

Body fulvous, flat, slender, shining, finely punctured, yellow beneath: head transverse, nearly as broad as the thorax, slightly produced in front: eyes oval, rather large: ocelli near together on the vertex, the middle one very little in advance of the other two: antennæ subclavate, piceous, longer than the thorax; first joint fulvous, long, rather stout; second yellow, long-cyathiform; third and following joints to the eighth short, successively increasing in breadth; club fusiform, broader than the eighth joint and more than twice its length: thorax oval: prothorax transverse, extremely short, not visible above: scutum of the mesothorax rather large, forming one segment with the parapsides; axillæ triangular, not joining together; scutellum somewhat rhomboidal, shorter than the scutum: metathorax with the propodeon and podeon very short: abdomen long-obconic, longer but not narrower than the thorax: legs yellow; tips of the tibiæ armed with a single spine; joints of the tarsi from the first to the fourth decreasing in length; fifth joint longer than the fourth; ungues and pulvilli small: wings limpid; nervures yellow, not extending beyond the middle of the wing; humerus passing like the ulna along the costa; radius extremely short; cubitus longer than the radius; stigma very small.

From the collection of the Rev. G. T. Rudd.





Walker, Francis. 1844. "Descriptions of some British Chalcidites." *The Annals and magazine of natural history; zoology, botany, and geology* 14, 181–185.

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