

XXIV. *Descriptions of some minute Hymenopterous Insects.*

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(Plate LXXIII.)

Read April 4th, 1878.

THE fourth volume of the 'Transactions' of the Linnean Society (1798) contains the figure and description of an almost invisible Hymenopterous insect, referred by the author, Mr. Shaw, to the Linnean genus *Ichneumon*, and described under the name of *Ichn. punctum*, with a doubtful reference to the *Ichn. atomos* of Linnæus. The specimen is stated to have been taken on the surface of a window; and on various occasions I have taken the same or a closely allied species creeping on windows, and of so minute a size as to be only visible when seen against the light and in motion. The insect is remarkable for its antennæ terminating in an oval club (being a female), and the long fringe of hairs with which the edges of the wings are furnished. It is at the present day referred to the subfamily Mymarides among the Proctotrupidæ, and to the genus *Anaphes* of Haliday (Entomol. Mag. i. 269).

The twenty-fourth volume of the 'Transactions' of the Linnean Society (1863) adds materially to our knowledge of these minute insects by the publication of a memoir, by Sir John Lubbock, "On two Aquatic Hymenoptera, one of which uses its wings in swimming." In this remarkable memoir the author describes two different species—one belonging to the Mymarides, and the other, as it seems to me, to an aberrant group of the Eulophideous Chalcididæ. Of the first of these two species as many as twenty-one individuals were observed by Sir John Lubbock, each swimming in a basin of pond-water with the assistance of its wings, and using its legs apparently only for walking, so that its motion under water might almost be called a flight. This insect was at first regarded as identical with *Polynema fuscipes* of Haliday, but was subsequently considered to be a distinct species, and described under the name of *Polynema natans*, although that genus possesses 13-jointed antennæ in the males, whereas *P. natans* has only twelve joints in its male antennæ. As Sir J. Lubbock did not give any representation of the male antenna, I have represented it in Plate LXXIII. fig. 1, from a specimen of the insect communicated to me by Sir J. Lubbock. With regard to the genus to which this insect belongs, it is to be observed that Dr. Arn. Foerster (Hymenopt. Studien, ii. Heft, pp. 118, 121) objects to the name *Polynema*, because there was a fish genus so named previously, and to the synonymous name *Eutriche* of Nees von Esenbeck (Monogr. Ichn. Min.), because Stephens had given the name of *Eutricha* to a Lepidopterous genus. He consequently proposed for it the name of *Cosmocoma*. Considering that it is unnecessary and inexpedient to alter such generic names because they happen to have been previously employed in *different classes* of animals, I should have retained the generic name given

to the insect in Sir John Lubbock's memoir, had it not been that the difference in the number of joints in its antennæ above noticed would not allow it to be arranged with the other *Polynemæ*, the number of joints of those organs in the Proctotrupidæ affording the principal characters for generic classification. Hence I should prefer to arrange Sir J. Lubbock's insect in Haliday's genus *Anaphes*, since it has 12-jointed male and 9-jointed female antennæ, as in that genus, notwithstanding that *Anaphes* is placed in a section having the abdomen sessile or subsessile, whilst it is pedunculated in *Polynema*; but the figure of the female given by Sir J. Lubbock (pl. xxiii. fig. 2) shows so small an amount of pedunculation as to throw doubt on this point; and it will be seen that the wings of *P. natans* (figs. 4 & 5) agree exactly with those of *Anaphes* (figs. 8 & 9)\*.

With regard to the natatorial habits of this curious insect, I may observe that the long fringe of fine hairs along the margins of the wings is admirably adapted to retain a bubble of air, needed for the respiration of the insect under water, which, as Sir John Lubbock observes, takes place through spiracles in the usual manner. M. Victor Audouin showed how this was effected in an insect belonging to the family Carabidæ and genus *Æpus*, which passed a considerable portion of its existence in salt water beneath high-water mark, and which was clothed with long setæ; and it is in like manner owing to the sericeous covering of the Argyroneta that the diving-bell spider is able to subsist under water.

It is a curious analogy that whilst these insects, the most minute of the Hymenoptera, should be furnished with these beautifully fringed wings, the most minute species of the Coleopterous order (viz. the Trichopterygia) should also have their wings similarly fringed; no one, however, as far as I am aware, has ever observed a *Trichopteryx* under water; and it may be suggested that the fringe of hairs in that genus is used as a supplement to the narrow elongated wings in effecting the ordinary flight of the Beetle.

The generic name *Mymar* has been retained for the singular little insect figured by Curtis under the name of

**MYMAR PULCHELLUS** (Plate LXXIII. fig. 3). Brit. Ent. pl. 411.

This insect has 13-jointed antennæ in the male and 9-jointed in the female, with the fourth joint remarkably elongated and slender; the fore wings forming a long and filiform thread, terminated by a dilated oval membrane (like a boatman's paddle), which is deeply fringed with hairs, whilst the hind wings are reduced to a short rigid bristle. The tarsi are 4-jointed; and the abdomen is fixed to the thorax by a long slender peduncle. As Mr. Curtis figured the female of this insect, I have thought it advisable to give a figure of the opposite sex (having taken specimens of both sexes by sweeping grass and low plants on a hot bank near Richmond Park), as well as to show its difference from another species of the genus, discovered in Ceylon by Mr. Staniforth Green, as well as from the still more remarkable species collected in St. Helena by the late T. V. Wollaston.

\* If this proposal as to *P. natans* being placed in the genus *Anaphes* be rejected, I beg to suggest that a new generic name be given to it, and would carry out Sir J. Lubbock's original intention, by giving to it the generic name of *Valkarella*.

*MYMAR TAPROBANICUS* (Plate LXXIII. fig. 4, ♂, and fig. 6, ♀), Ward, in Ent. Mo. Mag. Feb. 1875, p. 197.

In the work above referred to, the female only of this remarkable species is described. I have now, however, the pleasure of describing both sexes, collected in Ceylon by sweeping low herbage, by Mr. Staniforth Green, which are preserved as microscopical objects in Canada-balsam slides; and the male is fortunately arranged so that its structure can well be observed from above; but the female is fixed laterally. The head is large, transverse, with a slight ridge in the male between the anterior part of the eyes, the antennæ being affixed on the fore edge of this ridge, considerably above the mouth; so that the geniculation of the antennæ is quite of a different nature from that of the Chalcididæ. The antennæ of the male are very long, 13-jointed, and quite filiform; the basal joint slightly curved, and the second joint short, the remaining eleven joints nearly equal in length and slenderness; in the female the antennæ are 9-jointed, the first joint longer than in the male, the second joint rather short and thicker than the apex of the preceding joint, the third joint slender and slightly longer than the second, the fourth very long, slender, the fifth to the eighth small, and the ninth forming a large oval mass. The thorax is elongate-ovate, the anterior part conical, and the hind part truncated; the abdomen is attached to the thorax in both sexes by a thickish peduncle, slightly longer than the posterior coxæ; the abdomen is very small in the male, larger and pointed at the tip in the female, which is furnished with a short, sharply pointed ovipositor, with two long lateral valves. The fore wings resemble those of *M. pulchellus*, except that they are not so strongly battle-door shaped at the tips; the disk of this terminal part is furnished with two rows of short fine setæ, and the margins of this part are furnished with strong bristles. The hind wings are about two thirds of the length of the fore wings (thus differing from those of *M. pulchellus*), and are quite bristle-shaped; they have a few very short fine hairs on their margins and near the base; on the fore margin they have three small sharp hooklets (fig. 7) for fastening them to the hind margin of the fore wings. The legs are very long and slender, with 4-jointed tarsi and large pulvilli.

The whole insect is of an ochraceous colour, paler beneath, with the antennæ and legs concolorous; the apical half of the dilated portion of the fore wings is dusky, and the tips of the antennæ and tarsi are darker.

I also refer to the genus *Mymar*\* a very singular species collected by the late lamented T. Vernon Wollaston by sweeping low herbage in the Island of St. Helena, of which fortunately, both sexes were procured, and which agree in having the fore wings of large size, coriaceous, setose, convex, and, when shut, forming a semiglobular dome over the abdomen, quite unlike any previously known Hymenopterous insect.

*MYMAR WOLLASTONII*. (Plate LXXIII. fig. 8, ♂; fig. 9, ♀.)

Niger, nitidissimus, glaberrimus, capite thorace paulo latiore, subquadrato-rotundato, convexo, postice valde emarginato, thorace compresso, prothoracis lateribus subtus paulo dilatatis, pedunculo abdo-

\* If it should be deemed necessary to separate this species from the genus *Mymar*, I beg leave to suggest that its affinity therewith may be indicated by the employment of the generic or subgeneric name of *Mymarilla*.

minis fere thoracis longitudine fulvo-testaceo; abdomine ovali, nitido; antennis maris corpore toto dimidio longioribus, nigris, articulis duobus basalibus fulvis; pedibus elongatis, gracilibus, fulvis, apice tarsorum obscuro; tibiis posticis in utroque sexu setosis; alis anticis ovalibus, convexis, semiglobosis, coriaceis, nigris, valde nigro-setosis; alis posticis fere linearibus, setosis. Long. corp. ♂ circ. .2 mill., ♀ .274 mill.; long. anten. maris .3 mill.

*Habitat* in graminosis in Insula Sanctæ Helenæ.

*ALAPTUS EXCISUS.* (Plate LXXIII. fig. 10, ♂, and fig. 11, ♀.)

I am indebted to Mr. Whitmarsh, of Wilton, near Salisbury, for an opportunity of examining a very large number of glass slides, prepared for the microscope, containing minute insects mounted in Canada balsam—an excellent plan for the examination of such objects, so far as the observation of the general outline and of detached parts are concerned, the gummy solution rendering the parts more or less transparent. Amongst these specimens I found two insects belonging to the Mymarides, which I have no hesitation in regarding as the male and female of the same species. Both specimens had been reared from white blotches on oak leaves, evidently caused by the action of the minute larva of one of the leaf-mining *Tineæ* (*Lithocolletes*?). The blotches were about  $1\frac{1}{4}$  in. in diameter. The leaves were gathered on the 9th September, 1871; and the little Mymars appeared on the 6th October; one of the moths appeared on the 16th September, 1871, and two other kinds of parasitic flies on the 4th October following.

The action of the Canada balsam has destroyed the colours of the insects; so that the following description is confined to structural characters; moreover the male insect has unfortunately been fixed by the Canada balsam on its side, and the exceedingly minute size of the creatures rendered any attempt at displaying them, by arranging the limbs in the usual manner, ineffectual.

The head in the male is of large size and of an oval form (seen laterally), transverse in the female and widest behind; in this sex it appears to be furnished with two large appendages, truncate at the tips, which may possibly be dilated palpi. The antennæ of the male are long and filiform, 10-jointed, the basal joint being the largest, the remaining nine being nearly equal in size. The antennæ of the female are 8-jointed, the first joint large, the second smaller, the third considerably shorter and thinner than the preceding, the fourth to the seventh gradually but slightly thickened, and the eighth forming an elongated oval mass. The details of the thoracic segments are not easily determined, owing to the mode of preservation of the specimens; but the scutellum seems to be of large size and semicircular. The abdomen is sessile, depressed, and gradually pointed to the tip in the female, whilst it is more ovate in the other sex, with the male organ protruded. The wings are of equal size and shape in both sexes, the posterior ones being as large as the anterior, which latter have a remarkable dilatation near the base of the posterior margin, terminating in an acute notch; the remainder of the margins of all the wings is fringed with long hairs; the legs are long, slender, and terminated by 5-jointed tarsi with large pulvilli.

The 5-jointed tarsi, the number of joints in the antennæ of the two sexes, the sessile abdomen, and the very long narrow wings, agree with the characters of Haliday's genus *Alaptus* given by Walker in the 'Annals of Natural History,' vol. xviii. (1846) p. 50. Of

this genus two or, more probably, only one species is recorded in this country, namely *A. minimus*, "ferruginosus, antennis et pedibus pallidis;" the supposed second species, *A. fuscus*, "Præcedente major colore obscurior antennis longioribus, vix revera species distincta" (op. cit. p. 51). Another species, *A. pallidornis* [? *pallidicornis*], is slightly described by Foerster, found near Aix la Chapelle. It is scarcely half as long as *A. minimus*, with yellowish-white antennæ (Hym. Stud. ii. p. 120). As these authors do not mention the singular dilated and excised base of the fore wings, I consider the one before us distinct, to which may be applied the name of *ALAPTUS EXCISUS*.

*A. antennis maris corpore paullo longioribus, feminae corpori æqualibus; alis anticis basi postice dilatatis et subito excisis. Insecta minutissima. Long. circ.  $\frac{1}{8}$  mill.*

The second insect described by Sir J. Lubbock, under the name of *Prestwichia aquatica*, offers considerable difficulty as to its true position, in consequence of the loss of the typical specimens (all six of which are described as having been females) and the different descriptions given of the structure of the antennæ. Thus, in the Latin description (p. 140) supplied by Mr. F. Walker, we read "antennæ graciles, subclavatae, inarticulatae; clava longi-fusiformis;" and in his English description they are described as "10-jointed, the first joint nearly as long as the flagellum; the second, third, fourth, fifth, and sixth joints equal in thickness, successively decreasing in length; seventh fusiform; eighth, ninth, and tenth forming an elongate-fusiform club." In the specific description, by Sir J. Lubbock, they are said to consist of six or seven segments, a conjectural second segment (shown by a trace of a division near the end of the basal joint) being short and round, the third joint longer and increasing somewhat in size towards the apex, the fourth similar in shape but smaller, the terminal part of the organ forming a club-like mass, which appears to be composed of three segments, the last joint, however, being very indistinctly marked. In his fig. 10, and in the upper antenna in fig. 11, the antennæ are represented as only 4-jointed, whilst in fig. 12 and in the lower antenna of fig. 11 they are figured as 5-jointed. From this diversity of description, however, we may conclude that the first joint is considerably elongated, the antenna being geniculated at its extremity. The real second joint (the supposed preceding joint being, I believe, an optical delusion) is shown in fig. 12, followed by a shorter third joint, the remainder of the antenna consisting of the clava, of which the first division alone is indicated in fig. 12, whilst the second division, as described in the text, is more or less obsolete. As to the intermediate third, fourth, fifth, and sixth joints mentioned in Mr. Walker's English description, they are as illusive as the "antennæ inarticulatae" of his Latin description. We are warranted, then, in concluding that the antennæ were geniculate\* at the end of the long first joint, and that the terminal portion formed a more or less distinctly 3-articulated clava. Such characters, however, remove *Prestwichia* from the Mymarides, and associate it with smaller aberrant Eulophides. The structure of the tarsi of *Prestwichia* also, in my opinion, removes them from the Mymarides, and brings them, in like manner, to the Eulophides. It is true both Mr. Walker and Sir

\* It is proper to observe that in most of the Chalcididæ the antennæ are inserted low down in the face, close to the mouth, the basal joint extending upwards to the crown of the head, and the remainder of the antenna being bent downwards at a sharp angle, and only reaching to the mouth when at rest.

J. Lubbock distinctly describe the tarsi as 4-jointed, the latter adding that the fourth segment (pl. xxiii. fig. 15) is in all the legs very small. Referring to my genus *Trichogramma* (as described in Mr. Taylor's 'London and Edinb. Phil. Mag.' 1833, p. 444), in which the tarsi are described as 3-jointed,—a description which was adopted and confirmed by Mr. Haliday, one of the clearest-sighted of entomologists,—Sir J. Lubbock is "disposed to consider that the tarsus in *Trichogramma* is in reality 4-jointed, and that Westwood and Haliday's descriptions must be amended" (p. 141). Now, whoever has studied these minute Hymenoptera is well aware that in many of them the pulvillus of the tarsi is greatly enlarged, having the ungues affixed at the sides towards the base, the tarsus itself being only 3-jointed (see, for example, the figures of the tarsi of the Chacidideous genera published by Mr. Curtis in his 'British Entomology,' especially those of *Eulophus*, pl. 133; *Encyrtus*, pl. 395; and *Phagonia*, pl. 427; and I have not the least hesitation in affirming, from the inspection of Sir J. Lubbock's figures 10, 11, 14 & 15, that the tarsi of *Prestwichia* are only 3-jointed, with an enlarged pulvillus, as more distinctly shown in fig. 15. This character, therefore, also removes the genus from the Mymarides—amongst which it is arranged by the Rev. T. A. Marshall in his 'Catalogue of British Hymenoptera Oxyura,' between *Cosmocoma* (*Polynema*) and *Caraphractus*.

The structure of the fore wing of *Prestwichia* is also indicative of a similar want of relation with the Mymarides. As will be noticed by comparison of the figure of its wing (fig. 13) with those of *Polynema* (fig. 4) and *Anaphes* (fig. 8), without dwelling on the shape of the wing and its rounded extremity, it will be seen that the thick subcostal vein extends half the length of the anterior margin of the wing, where, at its apical extremity, "it turns inwards and ends abruptly"—a character never found in the Mymarides. Sir John Lubbock, as above stated, has referred to my genus *Trichogramma*; and I cannot but think that *Prestwichia* belongs to the little group of which the former genus is the type, and which Foerster has formed into his family Trichogrammatoidæ (Hym. Studien, Heft 2, p. 87). In my original description of *Trichogramma* I described the antennæ thus:—"breves, 6-articulatæ, articulo 1mo longo, 2do brevi, gracili, 3tio quam 2do majori, crassiori, 4to et 5to brevibus, 6toque maximo oblongo-ovato apice acuminato," accompanied by a figure both of the antenna and the 3-jointed tarsus. More recent examination of the antennæ leads me to think that the supposed second joint is only the narrowed extremity of the long basal joint (as represented in the accompanying Plate LXXIII. fig. 12); nor am I clear that the large oval apical joint is not in reality composed of two or three joints closely soldered together. The most remarkable character of *Trichogramma* consists of the curious mode in which the fine hairs of the fore wings are arranged in lines, of which I am not aware of any similar instance throughout the order Hymenoptera. Plate LXXIII. fig. 13, represents the fore wing of *Trichogramma evanescens*, of which no figure has hitherto been published; and it will be seen that *Prestwichia* differs from it in having the fine hairs scattered over the wing irregularly.

In the Entomological Magazine (vol. i. p. 340, July 1833) Mr. Haliday published the description of a new genus with trimerous tarsi, under the name of *Calleptiles* (giving

as a synonym the name of *Microma*, printed without description in Curtis's 'Guide'). The type of this genus, *C. latipennis*, had been reared from subcutaneous larvæ in the leaves of *Aquilegia* by Curtis, and is described as having "alæ hyalinæ radice obscuriores." To the description is appended an editorial note that the insect is probably identical with my *Trichogramma evanescens*; and in the 'Monographia Chalciditum,' 1839, p. 13, the last-named species reappears as belonging to my genus *Pteroptrix*, placed in a distinct section (1), erroneously described as having 4-jointed tarsi (which is the distinguishing character of *Pteroptrix*), with *Calleptiles latipennis*, Haliday, given as a synonym. In the 'Entomologist,' 1840-1842, the insect again reappears, in the descriptions of Mr. Haliday's beautiful series of plates of Chalcididæ, under the name of *Trichogramma evanescens* mas; but the figure of the insect (Entomol. Mag. pl. K. figs. 4, 4a-4d) differs in several important respects from my insect and its details, and evidently represents not only another species with a dark band across the fore wings, but probably a male insect, whilst mine was most probably a female. In Mr. Haliday's figures the number of lines in which the hairs of the fore wings are arranged is considerably greater than in my insect; and the antennæ are evidently 7-jointed, and strongly setose, the first joint of moderate size, the second about the length of the former and much thicker; the third resembles the second, as does also the fourth, which, however, is larger than the third, whilst the fifth, sixth, and seventh are evidently coalesced, together forming a 3-jointed oval mass.

A species of this group is described by Foerster in the 'Verhandlungen' of the Rhineland Natural-Hist. Soc. vol. viii. p. 26, pl. 1. fig. 9, *a, b, c*, under the name of *Trichogramma Walkeri*, which has the antennæ 4-jointed or (if the last joint consists, as the author supposes possible, of three joints soldered together) 6-jointed—the 1st of moderate size, the 2nd and 3rd equal, subovate, and nearly as large as the basal joint, and the terminal part of the antennæ forming an elongated oval mass, the whole antennæ being very slightly setose. In his 'Hymenopt. Studien,' Heft 2, p. 89, Foerster incorrectly alludes to this insect as having been described by him (*loc. cit. suprâ*) under the name of *Calleptiles Walkeri*, and proposes, on account of the great length of the ovipositor of the female, to form it into a separate genus *Centrobia*.

In Foerster's figures of the antennæ of *Poropoea*, those of the male are represented as 7-jointed, the first of moderate size, the 2nd small ovate, and the five following equal-sized, twice as large as the 2nd, and shortly ovate. The female antennæ are also 7-jointed, the 3rd and 4th joints thicker than in the male, and the last three joints clearly uniting to form a terminal oval mass. In Ratzeburg's second species, *Ophioneurus signatus*, the basal joint of the antennæ is of moderate size, the 2nd as thick and nearly as large as the first, the remainder (7 joints as figured) forming a large oval mass.

In the 'Annals of Natural History,' 2nd ser. vol. vii. pp. 211-213, Mr. Walker published, from Mr. Haliday's MSS., descriptions of several of these very minute insects found in Ireland—namely, *Myina annulipes* and *livens*, *Chætostricha* (n. g.) *dimidiata*, *Trichogramma vitripennis*, and *Oligosita* (n. g.) *collina*—accompanied by the following note, also by Haliday.

“*Synopsis of the Trichogrammini.*”

“Tarsi trimeri: tibiæ anticæ calcari apice inciso: antennæ articulis 6, 3 extremis in clavam coarctatis (an semper?): abdomen sessile: statura *Aphelinæ* (*Myinæ*) fere et huic magis affines videntur quam *Eulophinis*: *Oligosita* vero pedibus gracilibus, tarsis 2di paris elongatis, alis longe fimbriatis *Thysani* speciem mentitur.

GENERUM CONSPECTUS.

* Alæ anticæ seriatim pubescentes.	
† Vena costam sinu tantum attingens ad ortum radii.	1. <i>Trichogramma</i> , Westw.
†† Vena costam longius decurrens ante ortum radii.	2. <i>Chatostricha</i> , n. g.
** Alæ vage pubescentes.	
† Alæ anticæ latæ, margine subtiliter ciliatæ.	3. <i>Brachista</i> , n. g.
†† Alæ anticæ angustæ longe fimbriatæ (plumatæ).	4. <i>Oligosita</i> , n. g.”

Of the species of these minute insects having the hairs of the wings disposed in linear series and 3-jointed tarsi, Foerster describes five genera, viz. :—

1. *Poropoea*, Foerster. in Verhandl. nat. Vereins Rheinlande, 8th year, p. 28, pl. 1. fig. 10, *de* (1851) = *Ophioneurus*, Ratzeburg, Ichn. der Forstinsecten, iii. p. 197 (1852), consisting of two species, which are parasitic in the eggs of *Apoderus curculionoides* and *Rhynchites betulæ*, which reside, in the larva state, in rolled-up oak-leaves.
2. *Trichogramma*, Westw.
3. “*Chatosticha*, Walker” [rectius “*Chatostricha*, Haliday,” pace Foersteri].
4. *Lathromeris*, Foerster, and
5. *Centrobia*, Foerster.

But he adds to the family a section consisting of three other genera, in which the hairs of the wings are not arranged in lines, viz. :—

6. *Asynacta*, Foerster; 7. *Brachista*, Haliday; and 8. *Oligosita*, Haliday.

And it is, I do not doubt, in this latter section that *Prestwichia* must be placed. These three genera are thus tabulated by Foerster :—

aa. Flügel nicht reihenweise behaart.	
f. Fühler siebengliederig.	<i>Asynacta</i> .
ff. Fühler sechsgliederig.	
g. Vorderflügel breit, am Rande mit zartem Haarsaum.	<i>Brachystica</i> [rectius <i>Brachista</i> *, Hal.].
gg. Vorderflügel schmal, lang gewimpert.	<i>Oligosita</i> , Hal.

The difficulty pointed out in a preceding part of this paper as to the precise character of the antennæ of *Prestwichia* prevents me from determining whether it does not in reality enter into the genus *Oligosita*, Hal., of which the antennæ are thus described :— “Subclavate, brown towards the tips, much more than half the length of the body, first joint very long, second cup-shaped, third and following forming a spindle-shaped club.”

This description seems to indicate that the specimen described by Haliday was a male, as these organs in the opposite sex would probably be differently formed; at all events, in this uncertainty, I venture to describe and figure in this place a minute species, probably congeneric with *Prestwichia* (and of which I took several specimens on the 18th of August, 1837, by sweeping grass in Richmond Park), under the name of

\* Changed by Foerster as being too near to *Brachistes*, Wesmael.



## OLIGOSITA SUBFASCIATA. (Pl. LXXIII. figs. 14–19.)

*Picea*, capite et dorso thoracis fulvis, hujus parte postica picea, linea media longitudinali fulva, oculis magnis, nigris; antennis pedibusque fulvescentibus; alis anticis nubila media pallide fusca notatis.

Long. corp.  $\frac{3}{4}$  millim. Expans. alar.  $1\frac{1}{2}$  millim.

*Habitat* Richmond Park, comit. Surrey, mense Augusto capta.

The antennæ (fig. 15) are about twice the length of the head, and consist of a long basal joint, more slender in the middle, a second joint, not quite half the length of the first, followed by a minute annular joint, the fourth joint being rather smaller than the second, and three terminal joints forming an elongate oval setose mass.

The mandibles (fig. 16) are strong, horny, and terminated by four small obtuse teeth; the maxillæ (fig. 17) are large, and terminated by a large fleshy setose lobe, having a very short cylindrical and apparently exarticulate palpus, with two terminal short setæ; the lower lip (fig. 18) is nearly of equal size with the maxillæ, elongate-conic, rounded at the extremity; the labial palpi very small, slender, cylindrical, and terminated by a small seta. The tarsi (fig. 19) are 3-jointed, terminated by a large pulvillus, with two small lateral ungues. The fore wings are dilated at the hinder extremity; they are well clothed with fine setæ, and their apical margin is fringed with very long hairs; the subcostal vein is free for a short distance from the base of the wing, where it unites with the margin, and extends to the middle of the wing, terminating in a very short and nearly triangular stigmatic branch extending into the disk. The hind wings are very narrow, with a prominent hook before the middle of the costal edge, the margins with a fringe of long hairs, and a row of fine hairs on the disk.

Amongst the numerous minute Hymenoptera collected at or near Colombo, in Ceylon, by Mr. Staniforth Green, which he has mounted in Canada balsam and kindly presented to me, are several *Trichogrammæ* and allied species, of which I add descriptions and figures as further illustrating the relations of *Prestwichia*.

## OLIGOSITA STANIFORTHII. (Pl. LXXIII. figs. 20, 21.)

Tota luteo-fulva, oculis fuscis; antennis perbrevis, geniculatis, articulo primo magno, secundo semiovali, tertio annuliformi, quarto parvo subrotundato, reliquis tribus clavam longe ovalem formantibus; alis anticis subangustis, angulo antico apicali rotundato-truncato, longe ciliatis, disco parum setigero, ramo stigmatico distincto, apice angulato-truncato; alis posticis angustis, utrinque longe ciliatis; abdomine elongato-conico; oviductu longitudine abdominis, e basi hujus exeunte, apice serrato.

Long. corp. 0·017 unc.

*Habitat* in graminosis in insula Taprobana (*D. Staniforth Green*).

The insect here described is a female, as shown by the exerted ovipositor (fig. 21), which is finely serrated at the tip. The structure of its antennæ and wings are very clearly shown in the specimen, and lead me to infer that it cannot be generically separated from *Ol. subfasciata*. The peculiar form of the fore wings, which have the hind margin straight and produced, whilst the anterior apical angle is rounded off, gives the wings a form quite unlike that of any other Hymenopterous insect.

## OLIGOSITA? NODICORNIS. (Pl. LXXIII. fig. 22.)

Tota fulvo-lutea, oculis obscuris, venis alarum pedibusque pallide luteo-albis; capite lato; antennis brevibus, geniculatis, articulo primo elongato, secundo brevi obconico, 4 proximis semiovalibus, fere æqualibus, singulo secundo parum majore, setis longis antice subverticillatis, articulo apicali (septimo) ovali, quam præcedens paulo minore; alis anticis magnitudine ordinaria, angulo antico apicali rotundato-truncato, longe ciliatis, disco parum setoso, setis in lineas 5 irregulariter dispositis; alis posticis angustis utrinque longe setosis, angulo hamifero costali conico; genitalibus masculinis porrectis quasi biarticulatis, parte basali subtus spina armata. An mas *Ol. Staniforthii*? Long. corp. 0·014 unc.

*Habitat* cum præcedente in Taprobana (*D. Staniforth Green*).

I am obliged to add a mark of interrogation to the generic name applied above to this insect, from ignorance of the true structure of the male antennæ of the type of *Oligosita*. The specimen before me is a male, as shown both by the exerted genitalia and the structure of the subverticillated antennæ (fig. 23), with the terminal joints not forming a triarticulated mass.

## TRICHOGRAMMA (APROBOSCA) EROSICORNIS. (Pl. LXXIII. fig. 24.)

Corpus breve, contractum; abdomine sessili; capite magno; antennis brevibus, geniculatis, articulo primo longo, secundo parvo semiovali, tertio minimo annuliformi, ultimo (quarto) elongato, valde irregulari, quasi eroso, subnodoso, nodulis verticillatis; mandibulis angustis, curvatis, apice bidentatis; maxillis cum labio massam ovalem apice breviter setosam formantibus palpisque brevibus exarticulatis instructam; pedibus sat longis, tarsi 3-articulatis, pulvillo magno; alis anticis latis, ciliis mediocriter elongatis marginatis, ramo stigmatico elongato, apice crasso inflexo, setis disci in lineas circiter 10 dispositis; alis posticis angustis, fere linearibus, longius ciliatis, angulo hamifero costali prominente.

Tota fulva, oculis obscuris, pedibus antennisque pallidioribus. Long. corp. 0·018 unc.

*Habitat* in insula Taprobana (*D. Staniforth Green*).

The form of the fore wings, which are relatively broad, and the linear arrangement of the fine hairs on their disk, prove that this curious insect must be closely allied to our English *Trichogramma*; but the singular antennæ (fig. 25), of which the terminal nodose portion under my strongest power shows no trace of transverse articulation (although the groups of verticillate hairs might be supposed to indicate so many joints which have become ankylosed), render it necessary to form at least a separate subgenus for its reception. In favour of the exarticulation of this terminal part, the genus *Thysanus*, described by Haliday\*, may be quoted, in which the terminal joint is exarticulated, elongated, and cylindrical; it has been placed in the section Tetrastichoidæ by Foerster. The antennæ appear, at first sight, to consist of only three joints, of which the last is very long and linear, especially in the males; but between the second and third joints there appear to be three very minute annuli (more distinctly shown in the figure of the female than in the male antennæ †). The tarsi are not described, except that the intermediate pair are said to be "longissimi" (very long); the detached figure of one of the tarsi represents it as five-jointed, with a scarcely visible pulvillus; but Foerster states

\* *Annals Nat. Hist.* iv. 234, December 1839. This name has been unnecessarily (as it seems to me) altered by Foerster to *Tripshasius* (*Hymen. Studien*, p. 84).

† 'Entomologist,' No. 26, December 1842, plate K. fig. 3 a male, fig. 3 b female antenna; fig. 3 c tarsus.

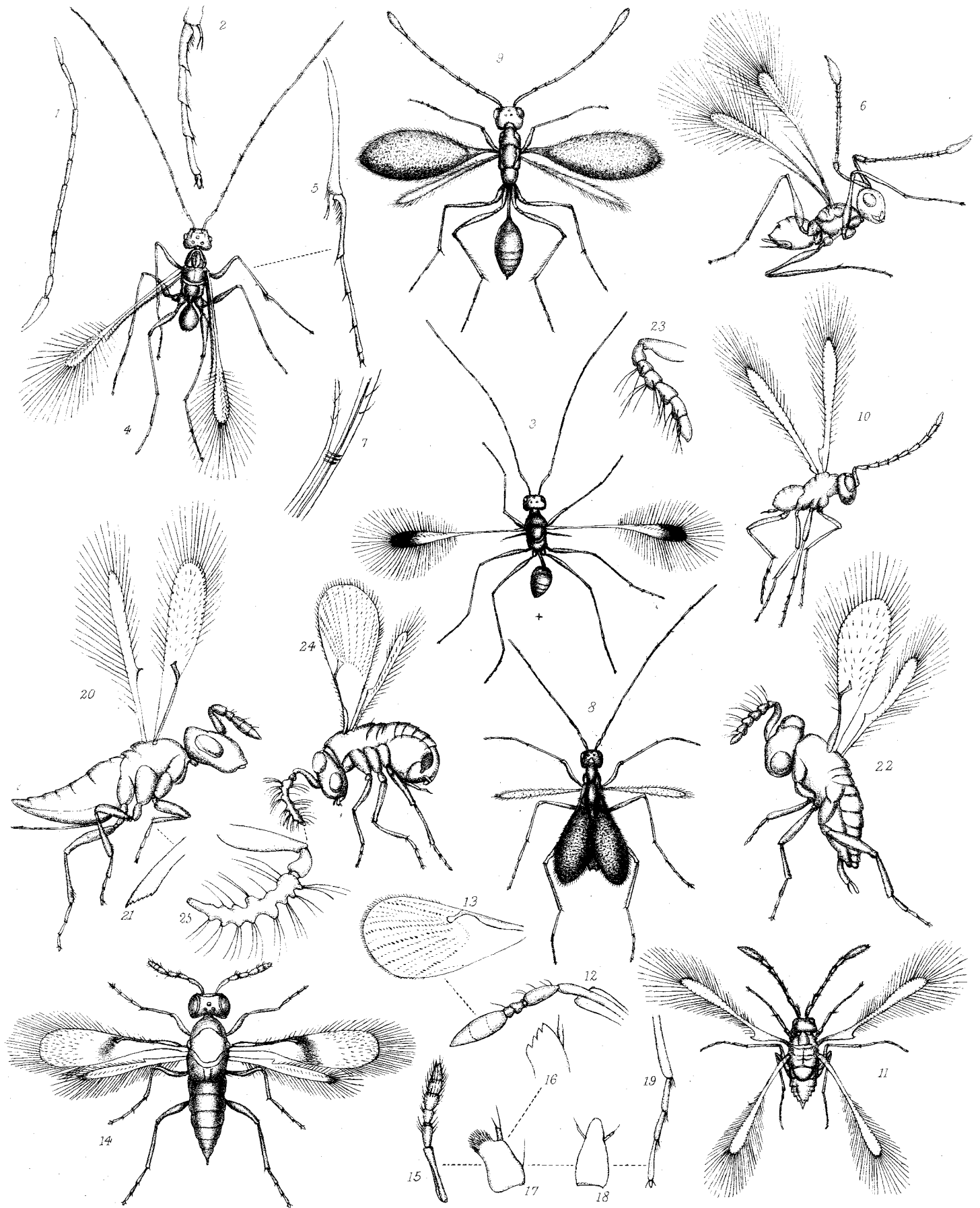
that they consist only of four joints (*l. c.*), and hence the genus is placed by that author in the section Tetrastichoidæ. The wings, however, are very strongly ciliated; and notwithstanding the difference in the number of joints of the tarsi, I should be inclined to place the genus near *Pteroptrix*, Westw. (unnecessarily altered to *Pterothrix* by Foerster), and not far removed from the Trichogrammatini.

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### EXPLANATION OF PLATE LXXIII.

The whole of these figures are highly magnified.

- Fig. 1. Antenna of the male of *Valkerella (Polynema) natans*.  
 2. Tarsus of the fore leg of the same species.  
 3. *Mymar pulchellus*, male.  
 4. *Mymar taprobanicus*, male.  
 5. Tibia and tarsus of the same insect.  
 6. *Mymar taprobanicus*, female.  
 7. Hooklets of wings of this species, necessarily represented much too coarse.  
 8. *Mymar Wollastonii*, male.  
 9. *Mymar Wollastonii*, female.  
 10. *Alaptus excisus*, male.  
 11. *Alaptus excisus*, female.  
 12. Antenna of *Trichogramma evanescens*.  
 13. Fore wing of the same species.  
 14. *Oligosita subfasciata*.  
 15 to 19. Parts of the same insect: fig. 15, antenna; fig. 16, the mandible; fig. 17, maxilla; fig. 18, labium; and fig. 19, the tarsus.  
 20. *Oligosita Staniforthii*, female.  
 21. Extremity of ovipositor of the same insect.  
 22. *Oligosita? nodicornis*, male.  
 23. Antenna of *O. nodicornis* ♂.  
 24. *Trichogramma (Aprobosca) erosicornis*.  
 25. Antenna of the same species.



SPECIES OF MYMAR ALAPTUS, OLIGOSITA, & TRICHOGRAMMA.

*With details all highly magnified.*