

- Fig. 13.* Transverse section through the sinus rhomboidalis at the point where the multiaxial fibre decussates.
- Fig. 14.* Transverse section through the sinus rhomboidalis at the apparent origin of the vagus, $\times 14$.
- Fig. 15.* Transverse section through the spinal cord a short distance behind the fourth ventricle. Some of the detail was added from another specimen. $\times 24$.
- Fig. 16.* Transverse section through the middle portion of the spinal cord, $\times 24$.
- Fig. 17.* Transverse section through the posterior part of the spinal cord, $\times 24$.
- Fig. 18.* Two cells from the ventral ganglion of the cord: *v*, the side turned towards the ventral edge; *d*, the side turned towards the dorsal edge; the grey substance of the ventral horn is situated between the two on the concave side of the upper and on the convex side of the lower cell. $\times 65$.
- Fig. 19.* Section through the multiaxial fibre: *m. s.*, medullary sheath; *a. c.*, axis-cylinders; *b*, the axis-cylinder destined to decussate. $\times 120$.
- Fig. 20.* Cells from the roof-ganglion of the optic lobe, $\times 180$.
- Fig. 21.* Transverse section through the olfactory lobe, $\times 180$.
- Fig. 22.* Longitudinal and vertical section through the dorsal part of the cerebrum, $\times 180$.
- Fig. 23.* Transverse section through the optic lobe, $\times 180$.

XIX.—*New Genera and Species of Trichopterygidæ.*

By Rev. A. MATTHEWS.

THE Trichopterygidæ have numerically increased to such an extent since the publication of the 'Trichopterygia Illustrata' in 1872, that I have for some time contemplated adding a second part to that work. Many of the new species have been already described in various periodical and other works, but some few still remain unnoticed. And since the publication of a more comprehensive work has hitherto been, and may yet be, retarded by causes over which I have no control, I propose in the following pages to give a short summary of their chief distinctive characters, reserving more detailed descriptions to some future period.

The two new genera described in this paper are both of a most extraordinary and novel character, and extremely elegant in form. In *Mikado* the front of the head is produced into an elongated snout or rostrum, after the manner of some species of *Rhinosimus*; but this part is deflexed, and, when at rest, laid upon the prosternum, so that, if viewed from above, the head presents the appearance usual to *Trichopteryx*. In *Dimorphella*, as its name implies, the sexes would appear

generically distinct; the males, except that their elytra are slightly truncate at the extremities, resemble *Ptenidium* or *Camptodium*, while the females, with short elytra and elongate abdomen, look like *Ptinella*. Of the sixteen new species eight have been discovered by the researches of Herr E. Reitter; two only are British, and the rest come from various parts of the world and from many different collectors.

MIKADO, gen. nov.

Corpus obconicum, postice valde attenuatum, convexum.

Caput sat magnum, antice valde elongatum, rostriforme, fortiter deflexum.

Antennæ modicæ, 11-articulatæ, clava biarticulata.

Palpi maxillares parvi, gracillimi, 4-articulati.

Palpi labiales sat magni, triarticulati, moniliformes, setis longis ad apices instructi.

Labrum magnum, suboblongum.

Mandibulæ sat angustæ, apicibus bidenticulatis.

Maxillæ magnæ, robustæ, quasi trilobatæ, lobo interiore elongato, ad apicem dentibus curvatis, acutissimis armato.

Mentum modicum, fere quadratum.

Labium suboblongum, ad apicem in processu paraglossali longo, acuto, divergente utrinque productum.

Lingua parva, apice bifido.

Pronotum magnum, ad basim latissimum, angulis posterioribus maribus parum productis.

Scutellum late triangulare.

Elytra elongata, apicibus oblique truncatis.

Alæ lanceolatæ setis marginalibus prælongis instructæ.

Venter segmentis sex compositus apicali integro.

Pedes sat breves, graciles; tarsis triarticulatis, coxis posterioribus late laminatis, fere contingentibus.

This genus is allied to *Myrmicotrichis*, but distinguished from that and from all other genera by its rostriform head.

Mikado japonicus, sp. nov.

L. c. 0.50 mm. Obconicus, elongatus, postice validissime attenuatus, nitidus, flavus, pilis brevibus aureis vestitus; capite magno, antice rostriformi, oculis nigris, valde prominentibus; pronoto sat magno, ad basim latissimo, glabro, nitidissimo; elytris ad humeros latissimis, postice valde attenuatis, remote asperatis, apicibus oblique truncatis; abdominis segmentis duobus apertis; pedibus atque antennis brevibus, flavis.

This interesting species was found by Mr. Lewis near Yuyama, Higo, Japan. From the anatomy of its mouth *Mikado*
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appears to be carnivorous, and was probably inhabiting the fungus in which it occurred rather plentifully for the purpose of preying upon the eggs and young larvæ of minute animals, which the peculiar shape of its head would enable it to extract from the cells without difficulty.

DIMORPHELLA, gen. nov.

Corpus subovatum, valde convexum.

Caput prominens, antice sat productum.

Antennæ longæ, graciles, 11-articulatæ, clava tenui, triarticulata.

Palpi maxillares robusti, 4-articulati, articulo apicali brevi, aciculari.

Palpi labiales perbreves, triarticulati, articulis transverse subquadratis, apicali setis erectis longissimis ad apicem instructo.

Labrum magnum, latum, subquadratum.

Mandibulæ sat longæ, obtuse uncinatæ.

Maxillæ permagnæ, robustæ, quasi trilobatæ, lobo interiore valido, dentibus multis, curvatis, acutissimis armato.

Mentum magnum, oblongum.

Labium oblongum, sub mento ferme occultum, in processu paraglossali brevi, acutissimo, divergente ad apicem utrinque productum.

Lingua perbrevis, lata, apice profunde bifido.

Pronotum parvum, angustum, ad basim fortiter constrictum, pone medium latissimum atque in maribus dente acuto, magnitudine variabili ad latera armatum, margine basali recta angulis salientibus.

Scutellum magnum, triangulare.

Elytra magna, tumide convexa, extremis truncatis, femineis multum abbreviata apicibus truncatis.

Alæ angustæ, lanceolatæ, setis marginalibus instructæ.

Venter segmentis sex compositus, apicali integro.

Pedes sat longi, graciles; tarsis triarticulatis, coxis posterioribus magnis, sat remotis, late laminatis.

Dimorphella does not appear to be intimately allied to any other genus; the males bear some resemblance in outward form to *Pterycodes* and the females to *Ptinella*, and for that reason it should, I think, be placed in the vicinity of one or other of those genera.

Dimorphella Reitteri, sp. nov.

L. c. 0.63–0.75 mm. Subovata, valde convexa, nitidissima, vel flava, vel rufo-castanea, pilis aureis sparse vestita; capite modico, antice producto, oculis valde prominentibus; pronoto capite multum latiore, ad medium latissimo atque in maribus dente acuto laterali armato, basim versus fortiter constricto, margine basali recta angulis salientibus; elytris capite atque pronoto multum et

latioribus et longioribus, ante media latissimis, in maribus tumide incrassatis et punctis foveolatis profunde impressis, apicibus extremis truncatis, in femineis modice convexis et multum abbreviatis; antennis prælongis, gracillimis, atque pedibus læte flavis.

In a collection of Trichopterygidæ made by Herr Blumenau in Brazil and kindly presented to me by Herr E. Reitter I found four males and two females of this beautiful insect and several of the other novelties which I now describe; but I regret to add that there was no note of the precise locality or the conditions in which they were found.

Ptinella brasiliانا, sp. nov.

L. c. 0.75–0.87 mm. Elongato-ovalis, sat depressa, nitidula, modice punctata, haud tuberculata, pilis aureis vestita, mascula læte flava, feminea castanea, abdomine flavescente atque alis nigris visis; capite magno, antice rotundato, oculis mas. nullis, fem. nigris; pronoto modico, capite parum latiori, ante medium latissimo, ad basim leviter contracto, in disco profunde impresso; elytris capite atque pronoto longioribus et latioribus, ad media latissimis, profunde asperatis, apicibus valde rotundatis; abdomine flavescente segmentis quinque apertis, apicali obtuso; pedibus atque antennis longis, læte flavis.

One male and one female found by Herr Blumenau in Brazil.

Trichopteryx caucasica, sp. nov.

L. c. 1.12 mm. Late oblonga, valde convexa, nitidula, sat rugose tuberculata, pilis aureis vestita, rufo-picea, elytris rufescentibus; capite magno, nigro, oculis parvis, haud prominentibus; pronoto magno, nigro-piceo, ad basim latissimo, capite multo latiore, tuberculis magnis ornato, angulis posterioribus longe productis; elytris fere quadratis, capite atque pronoto parum angustioribus, profunde asperatis; abdomine rufescente, apice bidentato; pedibus atque antennis sat longis, læte flavis.

This species was taken not unfrequently in the region of the Caucasus by Herr Leder; it is chiefly distinguished by its large size, dilated thorax, quadrate elytra, and coarse sculpture.

Trichopteryx hellenica, sp. nov.

L. c. 0.87 mm. Oblonga, valde convexa, nitidissima, pilis flavis vestita, rufo-picea, remote tuberculata; capite magno, oculis parvis; pronoto magno, valde convexo, nitidissimo, capite multum latiore, ad basim latissimo, tuberculis parvis remote ornato, mar-

gine basali leviter arcuata angulis latissimis longe productis; elytris brevibus, parum attenuatis, capite atque pronoto brevioribus et angustioribus, modice et remote asperatis, apicibus dilutioribus; abdomine castaneo; pedibus atque antennis sat brevibus, rufescentibus.

T. hellenica differs from the preceding species in its much smaller size, very convex and shining thorax, and faint sculpture. It is in the collection of Herr E. Reitter, and was found in the Morea.

Trichopteryx truncatissima, sp. nov.

L. c. 0.75 mm. Brevissima, postice validissime attenuata, convexa, rugose exsculpta, nigra, pilis fulvis dense vestita; capite magno, oculis magnis, haud prominentibus; pronoto magno, ad basim latissimo, rugose tuberculato, angulis posterioribus latis, longe productis; elytris perbrevibus, fusciscentibus, postice validissime attenuatis, capite atque pronoto multum brevioribus et multum angustioribus, profunde asperatis, apicibus dilutioribus, extremis albidis; abdomine nigro; pedibus robustis, læte flavis; antennis gracilibus, obscure flavis.

Three specimens of this very distinct and remarkable species were found in Brazil by Herr Blumenau; it is easily recognized by its broad thorax and short and excessively attenuated elytra.

Trichopteryx angusta, sp. nov.

L. c. 0.80 mm. Elongata, valde angusta, convexa, nitida, nigra, pilis fulvis sparse vestita; capite magno, oculis modicis; pronoto parvo, capite latiore, ad basim latissimo, indistincte tuberculato, nitido, margine basali fere recta angulis productis, acutissimis; elytris fusciscentibus, perbrevibus, capite atque pronoto brevioribus et angustioribus, ad humeros latissimis, sat profunde asperatis, apicibus obtusis; abdomine elongato segmentis quinque apertis, nigro, apice obtuso, integro; pedibus læte, antennis obscure flavis.

This species may be distinguished from others by its intermediate size, long and narrow form, very short elytra, and long abdomen.

Three specimens were found by myself in Leicestershire.

Trichopteryx brasiliensis, sp. nov.

L. c. 0.75 mm. Suboblonga, convexa, nitida, fortiter cælata, fuscens, pilis fulvis vestita, atque setis lateralibus erectis in-

structa; capite magno, lato, oculis parvis; pronoto sat magno, ante basim latissimo, fortiter tuberculato, seta erecta laterali pone medium utrinque instructo, angulis posterioribus modice productis; elytris brevibus, quadratis, capite atque pronoto multum brevioribus, parum angustioribus, profunde asperatis, setis duabus erectis, nigris ad latus utrumque instructis, apicibus fere rectis; abdomine rufo-fusco; pedibus robustis, læte flavis; antennis obscure flavis.

Differs from other species in its short quadrate elytra, thorax widest before the base, rufescent abdomen, and short, erect, lateral setæ.

Found in Brazil by Herr Blumenau.

Trichopteryx reticulata, sp. nov.

L. c. 1.25 mm. Brevis, lata, valde convexa, nitida, elytris strigose asperatis, fusco-picea, pilis brevibus aureis vestita; capite magno, lato, umbilicatum punctato, oculis sat prominentibus; pronoto sat magno, capite multum latiore, ad basim latissimo, punctis umbilicatis confertim impresso, margine basali leviter arcuata angulis latis productis; elytris brevibus, subquadratis, pronoto angustioribus, reticulatum et strigose asperatis, apicibus rotundatis; abdomine sat longo, umbilicatum punctato, atque reticulato, apice integro; pedibus atque antennis læte flavis.

Differs from all other species in its strigose and very peculiar sculpture.

Found in Brazil by Herr Blumenau.

Trichopteryx Darwinii, sp. nov.

L. c. 0.63 mm. Oblonga, convexa, nitidula, modice tuberculata, tota castanea, pilis sat longis aureis vestita; capite modico, oculis parvis; pronoto brevi, ad basim latissimo, tuberculis parvis remotis ornato, angulis posterioribus vix productis; elytris sat brevibus, quadratis, pronoto vix latioribus, postice latissimis, modice asperatis, apicibus fere rectis; pedibus flavis, antennis gracillimis, pallide flavis.

This species differs from *T. brevis* in its broader form, shorter thorax, very slender antennæ, and finer sculpture. I feel much pleasure in dedicating this insect to the memory of the late C. R. Darwin, by whom it was found in a fungus near Rio Janeiro.

Trichopteryx tesserula, sp. nov.

L. c. 0.63 mm. Brevissima, quadrata, sat depressa, nitidula, pilis pallidis vestita, fusca; capite permagno, antice producto, oculis parvis; pronoto brevi, capite parum latiore, ad basim latissimo,

tuberculis parvis remotis ornato, angulis posterioribus vix productis; elytris perbrevis, omnino quadratis, depressis, capite atque pronoto nec latioribus, neque longioribus, modice asperatis, apicibus vix rotundatis; abdomine modico, rufo-piceo; pedibus atque antennis sat gracilibus, læte flavis.

This species was found in California by Lieut. T. L. Casey, U. S. E., and is distinguished from others by its small size and quadrate form.

Ptenidium Caseianum, sp. nov.

L. c. 0.75 mm. Angustum, elongatum, modice convexum, sat profunde punctatum, nitidissimum, pilis griseis indutum, nigrum elytrorum apice rufo-piceo; capite magno, punctis sat magnis impresso, nigro, labro rufo-piceo, oculis modicis; pronoto sat parvo, capite latiore, ante basim latissimo, punctis sat magnis remote impresso, foveis basalibus minutis, inconspicuis, margine basali fere recta angulis rotundatis; elytris longis, angustis, capite atque pronoto parum angustioribus atque profundius punctatis, ante media latissimis, apice angusto, rufo-piceo; pedibus læte flavis; antennis atque palpis obscure flavis.

Differs from other species in its long narrow form and especially in sculpture.

Found by Lieut. Casey in California.

Ptenidium attenuatum, sp. nov.

L. c. 0.75 mm. Elongatum, valde angustatum, nitidissimum, obscure castaneum, pilis brevibus flavescentibus sparse indutum, foveis basalibus pronoti permagnis; capite magno, indistincte punctato, oculis sat prominentibus; pronoto capite longiore atque latiore, ante medium latissimo, indistincte punctato, foveis basalibus permagnis et profundis, angulis posterioribus obtusis; elytris valde angustatis, pronoto haud latioribus, prope humeros latissimis, striis valde remotis minute punctatis, castaneis dimidio apicali flavescenti, apice attenuato; pedibus atque antennis longis, flavis.

This species occurs in Italy, and may be known by its long narrow form, very large thoracic foveæ, and otherwise peculiar sculpture.

Ptenidium africanum, sp. nov.

L. c. 0.75 mm. Ovatum, convexum, nitidum, alutaceum, modice punctatum, nigrum, pilis brevibus flavis sparse indutum, foveis basalibus pronoti nullis; capite magno, fere impunctato, oculis haud prominentibus; pronoto magno, prope basim latissimo, alutaceo, fere impunctato, angulis posterioribus obtusis; elytris pro-

noto haud latioribus, ante media latissimis, alutaceis, modice striatim punctatis, apice obtuso, parum dilutiore; pedibus atque antennis læte flavis.

Differs from *Pt. evanescens* in its much smaller size, narrower form, alutaceous surface, and faint sculpture.

Found on Mont Carrée in Algeria by Mr. Lewis.

Ptilium obcæcatum, sp. nov.

L. c. 0.75 mm. Elongato-ovale, valde convexum, nitidulum, nigropiceum, pilis pallidis sparsissime indutum, lineis pronoti nullis; capite magno, antice producto, oculis rudimentariis, longe retropositis; pronoto modico, capite parum latiore, ante basim latissimo, tuberculis modicis irregulariter dispositis ornato, angulis posterioribus obtusis; elytris ovalibus, pronoto vix latioribus, leviter asperatis, apicibus rotundatis, dilutioribus; pedibus modicis, piceis; antennis elongatis, gracillimis, piceo-testaceis.

This species is distinguished from all its congeners by its minute, almost rudimentary eyes and very long slender antennæ.

In the collection of Herr E. Reitter, found by Herr Brenske near Taygetus in the Morea.

Ptilium incognitum, sp. nov.

L. c. 1 mm. Elongato-ovatum, nigro-piceum, valde convexum, leviter et confertim tuberculatum, pilis brevibus argenteis sparse indutum, lineis pronoti parallelis; capite parvo, antice elongato, oculis haud prominentibus; pronoto modico, capite parum latiore, pone medium latissimo, basim versus fortiter constricto, lineis tribus parallelis in disco distinctissime impresso, angulis posterioribus prominulis, acutis, anterioribus valde deflexis; elytris ovatis, convexissimis, capite atque pronoto duplo longioribus, multo latioribus, pone media latissimis, ad humeros valde attenuatis, leviter confertimque tuberculatis, atque tuberculis majoribus hinc et illic ornatis, apice obtuso, dilutiore; abdominis pygidio valde obtuso; pedibus longioribus, læte flavis; antennis longis, piceis, ad basim dilutioribus.

This large and very distinct species has, owing to the parallel lines on its thorax, been confounded with *Pt. affine*, Erichs., but, with the exception of the thoracic lines, differs entirely from that species in size, form, colour, and sculpture. It appears to be very rare. I found it in Wicken Fen, Cambridgeshire, but have met with it in only two continental collections; in both of these it was labelled "*Pt. affine*."

Gumley,
December 22, 1888.



Matthews, A. 1889. "New genera and species of Trichopterygidae." *The Annals and magazine of natural history; zoology, botany, and geology* 3, 188–195.

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