

and long, jointed, superior spinners it would be impossible to relegate the specimen to the genus *Atypus* with absolute authority. Neither would one be warranted in characterizing a new genus by the absence of eyes and spinners, since these organs were doubtless present, but have simply failed to impress themselves upon the matrix. I have therefore felt compelled on the one hand to propose a new generic place for this fossil, and on the other to present no sharply defined generic characteristics. Indeed, it must be admitted that besides expressing the general facies of the fossil, as above described, the generic value of the name *Eoatypus* consists largely in assigning the specimen rank as a fossil spider.

On one side portions of all the four legs are preserved, the first three showing the articulations at the trochanter, femur, and patella. The second leg shows also the patella entire, indicating the articulation with the metatarsus. On the other side a portion of the femur of the first leg is shown with the patella and its articulations. Both hind legs are represented by the apical parts of the femora.

The horizon from which this new fossil was obtained is that from which most European fossil spiders have been taken, viz. the Eocene Tertiary. It is also that from which have come our American Araneid fossils as recently studied by Mr. S. H. Scudder from specimens collected at Florissant, Colorado.

---

L.—*The Staphylinidæ of Japan.*  
By Dr. D. SHARP.

[Continued from p. 295.]

*Tachyusa coarctata.*

*Tachyusa coarctata*, Er. Käf. Mark-Brand. i. p. 308.

Apparently a common species in the Japanese archipelago, and found by Mr. Lewis as far north as Hakodate. The species is very variable in Japan as well as in Europe.

*Xenusa rufescens.*

*Tachyusa rufescens*, Sharp. Trans. Ent. Soc. Lond. 1874, p. 11.

The genus *Xenusa*, recently established by Rey for a part

of *Tachyusa*, appears to be a valid one, and we have two species of it in Japan. Fauvel thinks it the same as *Myrmecopora*, Saulcy, but this appears to me very doubtful. *T. algarum* is also a *Xenusa*.

#### ECTOLABRUS, nov. gen.

Corpus sat latum, posterius acuminatum, fortiter punctatum, pubescens, thorace transverso, anterieus rotundato, posterius bisinuato. Antennæ sat graciles, laxè articulatae. Palpi maxillares articulo ultimo sat elongato, gracillimo, præcedente gracili, latitudine plus duplo longiore. Genæ marginatae. Prosternum brevissimum. Coxæ intermediae subcontiguæ, mesosterno inter eas processum elongatum tenue, tenuiter carinatum formante. Pedes graciles; tarsi anteriores 4-articulati, intermedii et posteriores 5-articulati; posteriorum articulo basali secundo haud duplo longiore.

The insect for which I establish this genus is in appearance somewhat intermediate between *Homæusa* and *Dinarda*. None of the examples brought back by Mr. Lewis are in good preservation, and the structure of the tarsi has not been very clearly perceived by me; but I feel pretty sure that the intermediate feet are five-jointed.

#### *Ectolabrus laticollis*, n. sp.

Fusco-niger, haud nitidus, prothoracis marginibus elytrisque ferrugineis; antennarum basi pedibusque rufis; fortiter punctatus; thorace valde transverso, elytris paulo latiore, angulis posterioribus acutis.

Long. 4 millim.

Antennæ with the three basal joints yellow, the others darker; third joint a little longer than second, fourth to tenth each a little broader than its predecessor, the fourth longer than broad, seventh to tenth each transverse. Head broad and short, scarcely half as broad as the thorax, closely and coarsely punctate. Thorax twice as broad as long, sides rounded and narrowed in front, the base rounded in the middle, nearly concealing the scutellum, the hind angles slightly acute, the surface closely and coarsely punctate, with a vague depression in front of the base in the middle. Elytra a little longer than the thorax, roughly punctate, hind margin deeply sinuate on each side. Hind body acuminate behind, moderately closely punctate and pubescent, beneath densely pubescent.

Miyanoshita and Nikko; main island.

Group BOLITOCCHARINA.

*Autalia rufula*, n. sp.

Rufula, tenuiter pubescens ; abdomine ante apicem nigro ; thorace tricanaliculato.

Long.  $2\frac{1}{2}$  millim.

Antennæ rather slender, third joint shorter than the second, penultimate joints slightly transverse. Head almost impunctate, neck slender. Thorax small, only half as broad as the elytra, about as long as broad, with a deep channel on the middle in front and with a lateral channel or depression on each side, these latter convergent behind. Elytra elongate, deeply marked at the base with four depressions.

Nagasaki, in March ; four examples.

This minute insect is not one half the size of its European congener *A. impressa*, to which, however, it appears to be rather closely allied in other respects.

*Bolitochara varipes*, n. sp.

Nitida, picea, abdomine basi rufo, nigro-variegato ; antennis basi pedibusque testaceis, femoribus fuscis ; subtiliter punctulata, elytris crebrius fortiusque punctatis.

Long. 4 millim.

Antennæ thicker externally, second and third joints equal in length, fourth and fifth each about as long as broad, sixth to tenth transverse, terminal joint stout, obtuse, longer than the two preceding together, its extremity paler. Head very feebly punctate. Thorax considerably narrower than the elytra, not quite so long as broad, feebly punctate, shining, with a very distinct fovea in front of the base in the middle. Elytra much longer than the thorax, closely and coarsely punctate, the humeral angle reddish. Hind body shining, almost impunctate, varied with red and black, the red predominating on the basal, the black on the apical segments. Legs yellow, the middle and hind femora infuscate.

Kashiwagi, June 22nd, 1881 ; two specimens.

*Leptusa impressicollis*, n. sp.

Minus elongata, subdepressa, rufo-ferruginea, capite fusco, pedibus testaceis ; prothorace fortiter transverso, basin versus longitudinaliter biimpresso.

Long.  $2\frac{1}{4}$  millim.

Antennæ short, thicker externally, fourth joint small, fifth to tenth transverse, the last of them strongly so. Head nearly black, dull, obsolete, moderately closely, rather coarsely punctate. Thorax rather narrower than the elytra, twice as broad as long, rather coarsely punctate, with two rather indefinite impressions on the middle near the base. Elytra short, a little broader and a little longer than the elytra, moderately closely granulose-punctate, somewhat shining. Hind body shining, the basal segments sparingly punctate, the apical nearly impunctate.

Yokohama and Nagasaki in early spring; found under the bark of fir-trees.

*Tachyusida velox*, n. sp.

Elongata, angustula, rufo-brunnea; abdomine ante apicem picescente; antennis pedibusque rufis; opaca, densissime subtiliter punctata; prothorace vix transverso, basin versus angustato.

Long. 5 millim.

Antennæ elongate, rather stout, third joint slightly longer than the second, fourth to tenth each slightly longer than its predecessor, the tenth slightly transverse, terminal joint acuminate, not so long as the two preceding together; palpi slender. Head elongate, narrowed behind, much narrower than the thorax, extremely densely and finely punctured, quite dull. Thorax about as broad as the elytra, nearly as long as broad, very densely and extremely finely punctured, quite dull, much narrower at the base than in the middle. Elytra scarcely longer than the thorax, densely and finely punctured, dull. Hind body elongate and slender, rather shining, finely punctate. Legs elongate. Tarsi long and slender, the basal and the apical joint each very long. Male with a short carina or elongate tubercle on each of the terminal and penultimate dorsal plates.

Kashiwagi, June 1881; two specimens.

*Silusa rugosa*, n. sp.

Rufa, opaca, fortiter dense punctata; abdomine nitido, ante apicem nigro; elytris fortiter granulatis.

Long. 3 millim.

Antennæ rather short, thicker externally, third joint slightly shorter than the second, sixth to tenth joints transverse. Head extremely densely punctured, quite dull. Thorax strongly transverse, slightly narrower than the elytra, the

sides rounded in front, considerably narrowed behind, coarsely, extremely densely punctured, quite dull. Elytra short, but distinctly longer than the thorax, very coarsely and deusely punctured, so that the surface appears to be granulate. Hind body with the basal segments rather closely punctured, the apical nearly impunctate. Legs rather short. Male with a fine carina on the middle of the terminal and penultimate dorsal plates.

Nagasaki, in early spring.

I have not been able to see the labial palpi in this and the allied insects, all of which appear to be rare, and I cannot say whether they are two-jointed or three-jointed; if the latter be the case, this insect would be placed in *Bolitochara*; but I think it will prove to be more nearly allied to *Silusa* (*Stenusa*) *rubra*.

*Silusa rorida*, n. sp.

Rufo-nigra, opaca, densissime punctata, abdomine basi rufo; antennis fusco-testaceis, tarsis testaceis; pube albida vestita, præsertim in capite densa.

Long.  $2\frac{1}{4}$  millim.

Antennæ rather short and slender, first joint infusate yellow, second and third paler, fourth to tenth fuscous, terminal joint short, a little paler than the preceding, tenth transverse. Head extremely densely punctured, quite dull. Thorax a little narrower than the elytra, rather strongly transverse, much narrowed behind, like the head excessively densely punctate and quite dull. Elytra a good deal longer than the thorax, quite dull, densely covered with finely rugose-granular sculpture. Hind body very sparingly punctured, shining. Legs nearly black, with the tarsi pale.

Oyama; one specimen.

Closely allied to *S. rugosa*, but smaller, darker in colour, with more slender antennæ and less coarse sculpture.

*Silusa punctipennis*, n. sp.

Rufo-nigra, capite thoraceque densissime punctatis, opacis; elytris fortiter punctatis, subnitidis; abdomine basi sanguineo; antennis rufis, pedibus piceis.

Long. 3 millim.

Antennæ rather short and slender, thicker externally. Head much narrower than the thorax, extremely densely punctured, quite dull. Thorax rather strongly transverse,

distinctly narrowed behind, very densely rugose-punctate, quite dull. Elytra rather longer than the thorax, densely and coarsely punctate. Hind body shining, rather closely punctate.

Nikko; one specimen.

Though allied to the preceding two species by the sculpture of the head and thorax, this differs by the more normal sculpture of the elytra; it is more like a *Bolitochara* in appearance than are the other two species.

*Silusa conferta*, n. sp.

Subdepressa, fusco-rufa, densissimo subtiliter punctata; abdomine parce punctato, nitido; antennarum basi, elytrorum marginibus pedibusque rufo-testaceis, abdomine ante apicem nigro.

Long.  $2\frac{1}{2}$  millim.

Antennæ short, moderately stout, thicker externally, fifth to tenth joints transverse. Head a little narrower than the thorax, extremely densely punctured, dull. Thorax rather strongly transverse, a little narrowed behind, extremely densely, rather finely punctate, quite dull. Elytra considerably longer than the thorax, densely punctate, not quite dull, the punctuation being coarser than that of the head and thorax; the hind margins and shoulders are more distinctly rufescent than the other parts. Hind body very sparingly punctured, basal segments rufescent, the others black; legs sordid yellow.

Miyanoshita; two specimens, in bad preservation.

In this species I have been able to get a rather unsatisfactory view of the labial palpi; they are apparently slender and elongate, only two-jointed. *S. conferta* is distinguished from the preceding species by the more depressed form and finer sculpture.

*Silusa crassicornis*, n. sp.

Minus depressa, rufo-testacea, abdomine ante apicem fuscescente; antennis articulis 4<sup>o</sup>-10<sup>m</sup> fuscescentibus; capite thoraceque densissime punctatis, opacis, hoc fortiter transverso, basin versus angustato.

Long.  $2\frac{1}{3}$  millim.

Antennæ rather stout, second and third joints equal, sixth to tenth transverse, terminal joint elongate and paler in colour than those preceding it. Head much narrower than the elytra, very densely punctate. Thorax twice as broad as long, its punctuation like that of the head. Elytra short and

broad, rather longer than the thorax, rather roughly and coarsely punctate. Hind body convex and setose beneath, flat and shining above, sparingly punctate.

Yokohama; two specimens.

In this species the basal joint of the hind tarsus is as long as the two following together and the middle coxæ are rather more distant than in the previous species; the labial palpi, so far as I can gather from an imperfect view, are of the *Silusa* type of construction.

*Silusa lanuginosa*, n. sp.

Nigra, pubescens; antennis, pedibus, elytris abdominisque basi et apice rufis; thorace transverso, basi in medio impresso; abdomine parce punctato.

Long. 4 millim.

Antennæ moderately long and stout, third joint equal to second, fifth to tenth differing little from one another, each transverse, terminal joint quite twice as long as the tenth. Head finely punctate. Thorax slightly narrower than the elytra, twice as broad as long, not narrowed behind, closely and rather finely punctate, very distinctly pubescent, with a transverse impression in front of the base in the middle; in colour red suffused with black. Elytra a good deal longer than the thorax, closely and somewhat coarsely punctate. Hind body finely and sparingly punctate. Male with an extremely fine crenulation of the hind margin of the last dorsal plate.

Nagasaki, 16th February, 1881; three specimens.

This is a true *Silusa* with the labial palpi elongate and rigid.

*Placusa infima*.

*Placusa infima*, Er. Gen. et Spec. Staph. p. 196.

Nagasaki, in March and April.

The specimens are in very bad condition, and there is no male in which the characters can be seen, so that the determination is doubtful; if not *P. infima*, the species is no doubt new.

*Epipeda granigera*, n. sp.

Piceo-ferruginea, capite, thorace elytrisque densissime punctatis, opacis, abdomine punctato, nitido, pedibus flavis; prothorace subquadrato, medio vage depresso.

Long. 2½ millim.

Antennæ short and stout, red at the base, darker beyond, third joint a little shorter than the second, fifth to tenth joints strongly transverse, terminal joint elongate, acuminate, nearly three times as long as the tenth. Head much narrowed behind the prominent eyes, densely punctate, quite dull. Thorax narrower than the elytra, not so long as broad, very densely covered with a granular sculpture, and broadly vaguely depressed along the middle. Elytra scarcely longer than the thorax, sculptured like it, but not quite so dull. Hind body finely punctate, the terminal segments almost impunctate.

Nagasaki, 16th March, 1881 ; one specimen.

*Epipeda fraterna*, n. sp.

Valde depressa, nigra ; elytris fuscis, pedibus sordide testaceis ; subtiliter punctata, subopaca ; prothorace plano, medio vix perspicue impresso.

Long.  $2\frac{1}{2}$  millim.

This obscure little insect is in all respects very similar to the common European *E. plana*, but is apparently a little smaller and narrower, and the male characters are not sufficiently similar to allow it to be considered a mere variety. In this sex the raised processes on the last dorsal plate are more distinct and enclose a much wider space, and each projects beyond the hind margin, so as to form a short, acute, free spine ; the hind margin in the middle is rounded, and there is a slight emargination on each side close to the spine.

Miyanoshita, December 22nd, 1880 ; five specimens.

*Epipeda Lewisa*.

*Homalota Lewisa*, Sharp, Trans. Ent. Soc. Lond. 1874, p. 14.

*Brachida clara*.

*Homalota (Brachida) clara*, Weise, Deutsche ent. Zeitschr. xxi. 1877, p. 90.

Hagi (*Hiller*) ; Yokohama, Nagasaki, and Hitoyoshi, in spring, rare (*Lewis*).

*Gyrophæna triquetra*.

*Gyrophæna triquetra*, Weise, Deutsche ent. Zeitschr. xxi. 1887, p. 91.

*Gyrophæna sapporensis*, n. sp.

Brevis, subdepressa, fusca, capite abdomineque nigricantibus ; an-



tennis pedibusque flavis ; elytris fulvis, margine exteriori nigro ; thorace parcissime punctato, elytris parce subtiliterque granulatis. Long.  $2\frac{1}{2}$  millim.

Antennæ short, clear yellow, fourth joint small, fifth to tenth similar to one another, each transverse. Head broad and short, almost impunctate. Thorax strongly transverse, narrower than the elytra, with three or four punctures on each side of the middle, forming an irregular series. Elytra a little longer than the thorax, bearing distant, minute, flattened granules. Hind body very finely and distantly punctate. In the male there is a series of very minute granules extending across the penultimate dorsal plate just in front of the hind margin ; the terminal plate bears some coarser flat granulations irregularly placed, and its hind margin forms a triangular prominence.

Sapporo ; three specimens.

In addition to these two species Mr. Lewis's collection contains a third *Gyrophæna* of very pallid colour ; but the examples are not in a fit condition for examination.

*Myllæna japonica*, n. sp.

Elongata, angusta, omnino subtilissime punctulata, opaca, fusco-ferruginea ; antennis palpis pedibusque testaceis ; thorace transverso, basi utrinque leviter sinuato ; elytris illo paulo longioribus.

Long.  $3\frac{1}{2}$  millim.

Antennæ very slender, scarcely any thicker externally, tenth joint much longer than broad. Head about half as broad as the elytra. Thorax nearly twice as broad as long, convex transversely, much narrowed in front, the punctuation excessively minute, the base a little sinuate on each side near the hind angles, these rectangular.

Nagasaki and Miyanoshita, in April and May.

This is similar in size and colour to the European *M. elongata*, Rey, but has more slender antennæ, and its thorax more transverse and distinctly sinuate at the base on each side.

Group OLIGOTINA.

PROTINODES, nov. gen.

Tarsi omnes breves, quadriarticulati, posteriores articulo basali brevissimo ; antennæ 11-articulatæ ; coxæ intermediae fere contiguæ.

The number of genera of Aleocharidæ with only four joints to the posterior tarsi is so small that the above characters are sufficient at present for the identification of the insect from which they are taken. It is of short convex form, somewhat intermediate in appearance between *Brachida* and *Oligota*. The maxillary palpi are small and short, the sides of the prothorax are very acutely inflexed, and the front coxæ are oblique, rather perpendicular in direction; the mesosternum is produced between the middle coxæ, forming a process very slender at the extremity and touching the raised margin on the front of the metasternum, which forms an angle immediately behind the coxæ without being produced between them. The basal joint of the hind tarsus is extremely short, projecting but little beyond the apex of the tibia; the second and third joints are short and equal, the fourth joint is longer than the other three together, and has beneath an excision giving rise in certain positions to an appearance of its forming two joints.

In an arrangement of the Aleocharidæ where predominance is given to the tarsal structure, the genus will be placed at the commencement of the Oligotina.

*Protinodes puncticollis*, n. sp.

Brevis, convexus, dilute rufus, brevissime pubescens; thorace elytris fortiter punctatis, abdomine subtiliter punctato.

Long.  $2\frac{1}{2}$  millim.

Antennæ rather short, not stout, fourth joint small, very much smaller than the fifth, fifth to tenth differing little from one another in length, each a little broader than its predecessor, tenth about as long as broad, terminal joint longer than the tenth. Head small, with convex eyes, densely and coarsely punctate. Thorax strongly transverse, short at the sides, the base greatly rounded, the surface closely and coarsely punctured. Elytra rather longer than the thorax, coarsely punctate, rather shining. Hind body short, convex beneath, the upper surface finely and rather indistinctly punctured, the penultimate segments vaguely darker in colour.

Tokio; three very mutilated specimens.

Subfam. *TACHYPORINÆ*.

This subfamily proves to be extremely well represented in Japan, and the fauna is in this respect more similar to that of North America than to that of Europe.

*Tachinus obesus.*

*Tachinus obesus*, Weise, Deutsche ent. Zeitschr. xxi. 1887, p. 92.

A unique female; Hagi (*Hiller*). Not found by Lewis.

*Tachinus japonicus*, n. sp.

Major, nigricans, nitidus; antennarum basi et articulo ultimo, palpis pedibusque testaceis; prothorace picescente, marginibus dilutioribus; elytris fuscescentibus, subrufis; prothorace fere impunctato, evidenter striguloso, elytris parce sat fortiter punctatis. Long. 9-11 millim.

Antennæ with the four basal joints red, the terminal joint also pale, the intermediates darker, the penultimate joints not so long as broad. Thorax only excessively finely and sparingly punctate, but with the fine reticulation dense and evident. Hind body shining, moderately closely and distinctly punctate.

In the male the terminal dorsal plate is slender, little produced in the middle, with the apex of this short broad lobe emarginate; the lateral angles form each a broad, extremely short prominence; the corresponding ventral plate is produced into two very long lacinia, which are not widely separated, are curved downwards, and nearly contiguous at their apices; the preceding ventral plate is very deeply and broadly emarginate, with the sides of the emargination twisted so as to be perpendicular at the angles; in front of the emargination the surface is depressed, the posterior part of the depression being broadly asperate.

In the female the last dorsal plate is trilobed, the three lobes being of one length and the middle one separated by a narrow space from the lateral; the middle lobe is the broadest and is obtuse behind, the lateral lobes are also obtuse; the last ventral plate is truncate in the middle behind, the margin of the truncation being setulose; each side of this middle lobe is armed with a short, slender, but truncate spine, and each lateral angle is produced to form a longer truncate spine, which does not, however, extend so far back as the intermediate spine, this latter itself extending considerably less backward than does the middle lobe.

A distinct species, somewhat allied to *T. humeralis*, but the individuals are larger, with very different punctuation, and strongly marked distinctions exist in the sexual characters.

The species is probably abundant in the northern parts of

the archipelago ; it was found at Awomori, at Chiuzenji in August, and at Nikko in June.

*Tachinus trifidus*, n. sp.

Niger, nitidus ; antennarum basi pedibusque testaceis ; elytris ad basin late vageque rufis, prothoracis lateribus angustissime piceis ; prothorace subtilissime parce punctulato, elytris crebrius fortiusque punctatis.

Long. 6 millim.

Antennæ rather short and moderately stout, the two basal joints yellow, the others dark, tenth joint about as long as broad. Thorax and elytra finely strigulose, the former only finely punctate, the latter red about the base and shoulders. Hind body shining, finely and moderately closely punctate.

This species closely resembles *T. basalis*, Er., but the female characters are totally different. In this sex the last dorsal plate ends in four acuminate spines, the lateral interspace being nearly twice as long as the middle one ; the lateral spines project slightly further backwards than do the middle pair. The last ventral plate is six-toothed, the lateral tooth and the intermediate on each side being elongate and slender ; the lateral tooth is in fact considerably longer than the median pair.

In the male the last dorsal plate terminates in two rather short distant teeth ; the external angle of the plate is not dentate and only projects as far back as the base of the notch separating the two middle teeth ; the last ventral plate forms two extremely large laciniaë, a little incurved at their apices ; the hind margin of the preceding segment is broadly but slightly emarginate and somewhat deflexed, the surface in front of it being flat and smooth ; there is also a corresponding smooth space on the preceding segment.

This has only been met with in the main island, six individuals having been found at Kiga, Miyanoshita in May, and Nikko.

*Tachinus bidens*, n. sp.

Angustulus, niger, nitidus, antennarum basi, pedibus prothoracisque lateribus testaceis ; elytris ad humeros rufis ; abdomine crebrius subtiliter punctulato.

Long. 6 millim.

Antennæ slender, the four basal joints yellowish, the rest darker, tenth joint distinctly longer than broad. Thorax

black, broadly, especially at the posterior angles, reddish or yellowish at the sides, finely and not closely punctate, and finely strigulose. Punctuation of elytra fine, though a good deal coarser than that of the thorax; their colour is dark, but a large vague red mark exists at the shoulder. The punctuation of the hind body is close and fine, and the hind margins of the segments are yellowish.

In the male the last dorsal plate forms in the middle an angular projection, the apex of the projection being divided by an angular notch that is evidently longer than broad, and each outer angle of the plate projects as a short but quite distinct tooth; the corresponding ventral plate terminates in two slender, parallel, linear, widely separated laciniaë, and each outer angle forms a rather long tooth; the hinder part of the preceding plate is deeply and rather broadly circularly emarginate, and the posterior part of the emargination is set with asperities; at each side of the emargination behind the surface is elevated in a plicate manner.

This species resembles *T. bipustulatus*, but is more slender and has longer and thinner antennæ and very distinct male characters; the slender, parallel, distant laciniaë of the last ventral plate are remarkable, as is also the fact that the sides of the emargination of the preceding segment are plicate in such a manner as to form the rudiments of laciniaë. The female is unknown.

Three specimens have been found; Nikko, 25th August, 1881, and Sapporo.

*Tachinus luridus*, n. sp.

Niger, nitidus; elytris ex parte majore luride rufescentibus, antennarum basi piceo, pedibus rufis; thorace elytrisq̄ue subtilius punctatis, dense strigulosis; abdomine sat crebre vix subtiliter punctato, tenuiter sed perspicue pubescente.

Long. 6 millim.

Antennæ black, with the basal joints rather paler, tenth joint about as long as broad. Thorax entirely black, only very finely and sparingly punctate, but very evidently strigose. Elytra more closely and coarsely punctate, but still only finely; they are of a rufescent colour, becoming darker behind and about the suture.

In the male the middle part of the last dorsal plate is only a little prolonged and forms in the middle two short teeth, which project only slightly further back than do the short, broad, lateral teeth. The last ventral plate is divided in the middle by a deep, narrowly oval excision; the sides of the

excision are not prolonged into laciniaë, and there is only an extremely short lateral tooth on each side; the posterior part of the preceding plate has in the middle behind a narrow deep depression, the anterior part of which is furnished with coarse granules. In the female the last dorsal plate is divided into three lobes by two incisions, but the lobes are not separated from one another and the last ventral plate is nearly simple, it being scarcely produced in the middle; but its hind margin is for a considerable breadth finely ciliate.

Though very similar to *T. trifidus* and *T. bidens* this species is very distinct; it will, apart from the sexual characters, be easily recognized by the entirely black thorax and the more distant pubescence of the hind body. Only two individuals have been found.

Hakone and Kiga.

*Tachinus nigrinus*, n. sp.

Niger, subnitidus; antennarum basi rufo, pedibus piceo-rufis; capite, thorace elytrisq̄ue subtiliter punctulatis, minus subtiliter strigulosis; abdomine dense subtiliter punctato.

Long. 7 millim.

Antennæ short and stout, four basal joints red, the others dark, third joint only a little longer than the second, tenth a good deal broader than long; palpi red. Thorax and elytra with their punctuation fine, but the reticulate strigulosity rather coarser and more evident than usual. Legs short and rather stout.

In the male the last dorsal plate is but little produced in the middle, and is divided in the middle by a short angular notch; the lateral teeth are quite short and extend about as far back as the middle notch; the last ventral plate is very deeply divided and the sides are prolonged into laciniaë, which are much curved downwards; the preceding plate has the hind margin broadly emarginate in the middle and the hind margin of the emargination set with a narrow band of asperities. In the female the last dorsal plate is quadrispinose, the two middle teeth are rather slender and are widely separated by a deep and rounded notch, the lateral teeth are very elongate and reach slightly further back than do the middle ones; the last ventral plate is sexdentate, the intermediate and external teeth being of about equal length and longer than the middle teeth, the latter, however, projecting rather farther backwards.

Kiga and Miyanoshita, but only two specimens. The

species is quite different from any other I am acquainted with.

*Tachinus sibiricus*, n. sp.

Niger, nitidus; antennarum basi pedibusque rufis; thorace elytrisque subtiliter strigulosis, illo parce subtiliter, his crebrius et magis fortiter, punctatis; abdomine subtiliter fere dense punctato. Long. 6 millim.

Antennæ moderately long and stout, the four basal joints red, the others darker, tenth about as long as broad. Thorax scarcely at all picescent at the sides.

This is similar to the common European species of *Tachinus*, especially to *T. pallipes*, but the individuals are only about half the size of those of that species, so that the resemblance to *T. laticollis* is still greater: but from that species it differs by the sexual characters, which, however, are sufficiently similar to warrant the two species being really allied.

In the male the middle lobe of the last dorsal plate is divided by a rather deep narrow notch, and each outer angle forms a rather stout, not very short tooth; the last ventral terminates in two rather long, slender, widely separated laciniaë, the space separating the laciniaë being continued backwards as a narrow excision; external to the laciniaë on each side there is a long slender tooth; the preceding plate has a very deep excision, the margin of which is broadly set with asperities; at the hind margin on each side of this excision there is a slight additional cavity, also asperate, and forming as it were an adjunct or continuation of the excision, and outside of this the surface is a little plicate, elevated and prolonged backwards; in the female the last dorsal plate ends in four long acuminate spines of about equal length, the middle notch being quite narrow; the last ventral is sex-dentate, the external tooth on each side being rather long.

This species is described from individuals found at Lake Baikal, in Eastern Siberia; a single female found by Mr. Lewis at Chiuzenji, 22nd July, 1881, apparently agrees with the Siberian individuals except in slight details; but it would be proper to examine Japanese individuals of the other sex before positively coming to a decision on this point.

*Tachinus mimulus*.

*Tachinus mimulus*, Sharp, Trans. Ent. Soc. Lond. 1874, p. 16.

Only four or five individuals have been brought this time. Nagasaki, Tokio, Nikko.

*Tachinus nigriceps*, n. sp.

Piceus, nitidus; capite nigro; antennis, palpis, thorace pedibusque flavis; thorace brevior, parce subtilissime punctulato; elytris abdomineque crebrius minus subtiliter punctatis.

Long. 4 millim.

Antennæ rather long and slender, entirely yellow, third joint much longer than second, tenth about as long as broad. Head quite black, very shining, broad and short. Thorax strongly transverse, shining yellow, broadly rounded at the hind angles. Elytra and hind body shining, very distinctly, not altogether finely, punctate.

In the female the last dorsal plate is trifid, the middle lobe being broad, parallel-sided, and terminated behind by a broad short emargination, so that each angle of the lobe is slightly acute; this central lobe is separated by only a small notch from the short broad lateral tooth, which projects just as far back as the middle lobe. The last ventral is sexdentate, the two middle teeth being broad and very short, the external tooth longer and slender.

This distinct species is somewhat similar to *T. collaris*. Only a single example has been found.

*Tachinus impunctatus*, n. sp.

Nitidus, niger; antennarum basi, palpis, thorace pedibusque testaceis; fere impunctatus; abdomine nitidior; antennis gracillimis.

Long. 7-8 millim.

Antennæ elongate, very slender, one or two of the basal joints yellow, the others dark, tenth joint three times as long as broad; palpi elongate. Head narrow, impunctate, black. Thorax quite shining, impunctate, yellow, the hind angles much rounded. Elytra nearly black, pitchy at the hind margin, without punctuation, and only very obsoletely strigulose. Hind body shining black, almost impunctate. Legs long and slender.

In the male the last dorsal plate terminates in four nearly similar and equidistant teeth, like those of a saw; the last ventral plate is divided by a deep, not broad, nearly parallel-sided fissure; the lateral portion on each side would be rounded, except that there is an extremely slight production of its hind part; the preceding ventral plate is very peculiar, it has in the middle behind a very large triangular depression, the surface of which is coarsely asperate; this part of the



segment projects further back than the lateral portions, and its hind margin is pectinate with coarse rigid cilia. The female has the central part of the last ventral plate prominent and split in the middle, but the two divided portions are not separated at all from one another, except that each is separately rounded at the apex, and each rounded part bears about three cilia; on each side there is a short broad tooth, and the outer angle forms also a short slender tooth; the last dorsal plate ends in four elongate spines, the external of which, though slender, is broader than the middle spines; the elongate middle notch is not quite so broad as the rather longer lateral notch.

Of this remarkably distinct species four individuals have been found.

Junsai Lake, under reeds, also at Sapporo.

*Tachinus diminutus*, n. sp.

Minimus, niger, nitidus; antennis fuscis, basi pedibusque rufis; prothorace lævigato; elytris crebre fortiter punctatis.

Long. 3 millim.

The antennæ are rather small and slender, the penultimate joint about as long as broad. The thorax is strongly transverse, broader than the elytra, its hind margin piceous. The elytra are much longer than the thorax, unicolorous.

Although I am not able fully to describe this species, owing to two examples only having been found and to their bad preservation, yet it cannot fail to be recognized owing to its small size, which is far less than that of any other species of the genus. The terminal dorsal plate in the male is almost unarmed, and the last ventral ends in two elongate, slender, extremely widely separated lacinia. In the female the last dorsal has in the middle two very short obtuse processes, and on each side a slender tooth projecting quite as far back as the median processes; while the terminal ventral plate has behind four short, nearly equidistant teeth, of which the middle two are ciliated.

Kiga and Sendai.

*Tachinus punctiventris*, n. sp.

Nigerrimus, antennis crassiusculis, fulvis, pedibus piceo-rufis; prothorace nitidissimo, sublævigato; elytris sparsim profunde punctatis, nitidis; abdomine minus nitido, fortiter profundeque punctato, tenuiter pubescente.

Long. 10 millim.

Antennæ largely developed, being both elongate and stout, third joint elongate, greatly longer than the second, fifth to eleventh extremely dull, tenth a good deal longer than broad; palpi yellow. Head small, very shining. Thorax large, rather broader than the elytra, remarkably polished, and with only a few distant very fine punctures; the hind angles project very slightly backwards. Elytra longer than the thorax, the hind margin at the outer angle oblique, not rounded, the surface very shining, with deep and distinct punctuation. Hind body with coarse, close, elongate, deep punctures, from each of which springs a fine rather elongate hair.

In the female the last dorsal plate is trifid, the central lobe being small and minutely emarginate at the extremity, and separated by a rather broad interval on each side from the lateral teeth, which are broad and short and project a little further back than the central lobe; the last ventral plate is rounded in the middle and very slightly notched, the hind margin being set with very coarse setæ; on each side of the notch the lateral angles form on each side only an extremely short projection.

The above description is made from two females, one from Oyayama, one from Nikko, agreeing closely; besides these I have five other individuals before me which may be either varieties of this remarkable species or may represent two or more closely allied distinct species, viz. a female from Nikko, which has the punctuation of the hind body and also of the elytra less coarse, the prolongations of the last dorsal plate slightly longer, the lateral teeth of the last ventral a good deal longer; in other respects this agrees with the type. Another female from Nikko is considerably smaller (8 millim. long) and narrower, and has the punctuation of the hind body much finer; the prolongations of the last dorsal plate are evidently shorter than in the type, but the lateral tooth of the last ventral is slightly longer. Another female, from Subashiri, is still smaller (only  $6\frac{1}{2}$  millim. long), and has the punctuation of the hind body a good deal coarser, the prolongations of the last dorsal plate evidently shorter than in the type, and the tooth of the side of the last ventral very obscure. There are also two males present from Nikko, one similar in size and form to the type female, but with the hind body more densely punctate; the last dorsal plate is at the hind margin a little prolonged in the middle, so as to form a well-marked prominence, rounded behind, but minutely emarginate in the middle of the rounding; the last ventral plate is very deeply cleft, the sides, however, not being prolonged as laciniaë, the sides of the fissure within its margin deeply and broadly impressed;

the preceding plate is simply emarginate in the middle, and in front of this has a rather small space covered with minute asperities. The second male is considerably smaller than the first and has the hind body coarsely punctate; the prominences of the last dorsal plate are rather longer, the central lobe being comparatively narrower, less rounded, and more emarginate; the ventral structure is nearly the same as in the other individual, except that the lateral portions of the last plate are rather more prolonged and less obtuse. In neither of these males are the front tarsi dilated. My impression is that these seven specimens represent three or four distinct species, in which the specific sexual characters are much more feebly differentiated than in the normal *Tachini*; but without further material or evidence as to the cohabitation of the sexes I cannot venture to attempt to characterize more than one species. In any case, however, *T. punctiventris* is at once distinguished by the polished surface of head, thorax, and elytra, and the punctuation of the hind body, the largely developed antennæ, and the very short metasternum. It will probably be found that it should be generically separated from the normal *Tachini*.

*Erchomus scitulus.*

*Erchomus scitulus*, Weise, Deutsche ent. Zeitschr. xxi. 1877, p. 91.

Mitzudake, near Nagasaki; Hitoyoshi, in Higo.

[To be continued.]

LI.—*On the Bib and Poor-Cod.*

By FRANCIS DAY, C.I.E., F.L.S., &c.

PROFESSOR M'INTOSH, in your last issue, admits that he was in error in having stated in the Ann. & Mag. Nat. Hist. for May 1886 that the bib and poor-cod were the same species; but as he also, possibly in error, misquotes some of my statements, or observes upon omissions made by me, but which do not exist, I beg for a short space in order to reply.

He says that "the main point contended for in my note was the confusion on the subject and the apparent uncertainty of the author of the 'British Fishes'" (p. 349)—an uncertainty which I think no one would have discovered but Dr.