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XXXIV.—On the Elateridæ of Japan

G. Lewis F.L.S.

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- f.ca.* Foramen caroticum internum.
f.ca'. Foramen for a branch of the internal carotid.
fe. Fenestra.
f.hy. Fossa hypophyseos.
f.j. Foramen jugulare internum.
f.l. Foramen lacrymale.
f.oc. Foramen occipitale.
fo.f. Foramen canalis semicircularis frontalis.
fo.h. Foramen canalis semicircularis horizontalis.
fo.s. Foramen canalis semicircularis sagittalis.
fp. Foramen parietale.
h.a. Posterior ampullary chamber.
ij. Incisura venæ jugularis.
iot. Incisura otosphenoidæ.
iv. Incisura foraminis vestibuli.
j. Jugal.
m. Maxilla.
n. Nasal.
o.a.s. Orificium ampullæ canalis semicircularis sagittalis.
o.c.h. Orificium canalis semicircularis horizontalis.
or.s. Orbitosphenoid.
o.s. Otosphenoid.
p. Parietal.
p.a.i. Processus anterior inferior.
p.al. Processus alaris.
p.a.o. Paroccipital.
p.a.s. Parasphenoid.
p.a.s. Processus anterior superior.
p.c. Pars condyloidea.
p.f. 1. First postfrontal.
p.f. 2. Second postfrontal.
p.m. Premaxilla.
p.o. Pleuroccipital.
p.p. Processus paroticus.
p.p.s. Processus posterior superior.
p.pt. Processus pterygoideus.
pr.f. Prefrontal.
pr.p. Processus parietalis.
pr.s. Presphenoid.
r.a. Ramus ascendens.
r.d. Ramus descendens.
s.c.a. Sulcus columellæ auditus.
s.l. Semicanalis lymphaticus.
s.o. Supraoccipital.
u.c. Inferior cylindrical processes.
v. Vestibulum.
v.a. Anterior ampullary cavity.
x. Cleft between *fo.f.* and *fo.h.*
x'. Cleft between *fo.s.* and *v.a.*
x''. Cleft between *fo.h.* and *v.a.*
 II. Foramen opticum.
 VII. Foramen nervi facialis.
 VIII. Foramen nervi acustici.

XXXIV.—*On the Elateridæ of Japan.*
 By G. LEWIS, F.L.S.

[Continued from p. 266.]

Agriotes longicollis, sp. n.

Infuscatus, subopacus, fulvo-pubescent; elytris brunneo-testaceis, interstitiis planis, rugosis, striis tenuiter impressis; antennis pedibusque infuscatis.

L. 13 mill.

Elongate, dusky brown, somewhat opaque, with tawny pubescence; the head closely, rather coarsely and roughly punctate, frontal carina oblique laterally and well elevated; the thorax closely and evenly punctate, elongate, rounded off anteriorly, sides parallel in the middle, widening out a little before the posterior angles, angles rather acute; the scutellum obscurely punctulate, little pointed behind; the elytra testa-

ceous, narrowly dusky at the apices, striæ fine, interstices flat, 2 to 5 rather wide, all evenly and finely rugose; the antennæ infusate, rather long, with rather lax joints; the legs also infusate; the thorax and antennæ are shorter in the female.

This species has the facies of a very large specimen of *A. sericeus*, Cand., but it is apparently nearer to *A. pilosus*, Panz.

Hab. Nikko. Four examples.

Agriotes persimilis, sp. n.

Infuscatus, subopacus, fulvo-pubescent; elytris brunneis, sutura infuscata; antennis pedibusque brunneis.

L. $12\frac{1}{4}$ mill.

This species is more robust than the last, with the thorax shorter, scutellum wider and less pointed behind, elytral suture infusate, and legs and antennæ reddish brown. The frontal carina also is much less conspicuous and is not notably oblique at the sides. If I did not know the female of *A. longicollis* I should with some hesitation consider this to belong to it. The species, however, were found more than 500 miles apart.

Hab. Junsai. One example.

Agriotes sericeus, Cand.

Agriotes sericeus, Cand. Ann. Belg. 1878, p. 189.

Agriotes sericans, Lew. Ent. Month. Mag. 1879, p. 157.

Hab. Subashiri and Wada-toge. Abundant.

Agriotes sepes, Lew.

Agriotes sepes, Lew. Ent. Month. Mag. 1879, p. 157.

Elongatus, niger, fulvo-pubescent; thorace creberrime punctato, punctis obscure ocellatis, angulis inconspicue carinatis; antennis valde serratis; pedibus rufis.

L. 9 mill.

Elongate, black, with fulvous pubescence; the head coarsely and very closely punctate; the thorax also closely punctate, punctures minutely ocellate, posterior angles little acute, turning outwards, with the carina scarcely visible; the elytra punctate-striate, interstices finely punctulate and transversely rugose; the antennæ, articulations rather long and lax, distinctly serrate (male), three basal joints red, others darker; the legs wholly reddish brown.

This species is similar to *A. exulatus*, Cand., but it is larger and more robust, antennæ serrate, and the carina at the base of the thorax scarcely perceptible.

Hab. Kii. I have only seen one example.

Note.—In *Agriotes exulatus*, Cand., the thoracic carina is well-marked. I found it in abundance under dead leaves at a rather high elevation near Nagasaki in March.

Agriotes elegantulus, sp. n.

Fusco-brunneus, nitidus, fulvo-pubescent; thorace angulis posticis haud carinatis; elytris punctato-striatis, interstitiis punctulatis, obscure rugosis; antennis pedibusque pallidis.
L. $5\frac{1}{2}$ mill.

Rather dark brown, shining, pubescent; the head rather uneven, not very closely punctured; the thorax parallel at the sides until well before the hind angles, hind angles not carinate, long, rather acute, and turning outwards, surface finely, evenly, and not thickly punctulate; the scutellum relatively large, finely punctulate; the elytra punctate-striate, striæ fine, interstices sparsely punctulate, obscurely rugose; the antennæ and legs pale.

Hab. Fukushima. Two examples.

Agriotes helvolus, Cand.

Agriotes helvolus, Cand. Mém. Liège, 1873, p. 30.

The head in this species is sometimes black.

Hab. Nagasaki, Kobé, Hakone, and Junsai.

Agriotes ogurae, sp. n.

Obscure brunneus, parum nitidus, griseo-pubescent; capite thorace-que dense punctatis; elytris punctato-striatis, interstitiis conspicue scabris; antennis pedibusque pallide brunneis.
L. $7\frac{1}{4}$ mill.

Dusky brown, with griseous pubescence; the head strongly punctured, with a faint median impression; the thorax densely punctured, punctures finer than those of the head, convex, infuscate on the disk, margins reddish brown, hind angles slightly turned outwards and carinate; the scutellum reddish brown, obscurely punctulate; the elytra punctate-striate, markedly scabrous, reddish brown, but distinctly darker on interstices 2, 3, 4, 5; the antennæ and legs concolorous, pale brown.

Smaller and narrower than *A. marginipennis*, Luc.; the thorax less parallel, posterior angles longer and turning outwards, and the asperity of the elytral interstices more conspicuous.

Hab. Kioto, at the Ogura lakes.

Agriotes palustris, sp. n.

Brevis, obscure brunneus, griseo-pubescens; thorace sparse punctulato, punctis parvis et grossis intermixtis; elytris punctato-striatis, interstitiis vage rugosis; antennis pedibusque brunneis.

L. 5 mill.

Short, rather robust, obscure brown, pubescence grey; the head rather closely and irregularly punctate; the thorax arched anteriorly, straight at the sides, hind angles with same direction, convex and punctate, punctures close laterally, but somewhat sparse on the disk, where the punctures are of various sizes, many fine, with a number of large ones between them; the elytra punctate-striate, interstices feebly rugose; the antennæ and legs dull palish brown.

Hab. Tokio, Nikko, Ogura lake, and Sakai.

Agonischius obscuripes, Cand.

Agonischius obscuripes, Cand. Mon. Elat. iv. p. 420, pl. v. fig. 5; Mém. Liège, 1873, p. 31.

Hab. Kagoshima. There are two examples in the Janson collection from Central Japan. According to Candèze it is found also in China, on the Himalayan Mountains and Cochin China.

Sericosomus viridis, sp. n.

Viridis vel aureo-viridis, metallicus; capite thoraceque dense punctatis; antennis (basi excepta) nigris; pedibus læte rufis.

L. 6-8 mill.

Bright metallic green or golden green, scarcely pubescent; the head densely punctured, usually with a round frontal impression between the eyes; the thorax narrowest anteriorly, gradually widening to base, angles continuing in same direction, wholly punctate like the head, with a short median channel before the scutellum; the scutellum obtusely pointed behind, punctulate; the elytra rather deeply punctate-striate, interstices convex and rugosely punctulate; the antennæ, three basal joints clear red, the rest black; the legs also clear red.

Hab. Hitoyoshi, Oyama, and Miyanoshita. At the last

place taken abundantly in May from the flowers of *Viburnum* and *Spiræa*.

Glyphonyx illepidus, Cand.

Glyphonyx illepidus, Cand. Mém. Liège, 1873, p. 31.

The frontal stria of this species is, as Candèze states, Λ -shaped, and there is a variety with the elytra testaceous, which is introduced as a new species by Schönfeldt in the last supplement of his Catalogue as *G. bicolor*, Cand., *in litt.*

Hab. Natakugawa, Tsumago, Fukushima, Hosokute, and Shinkano; also in Higo.

Silesis musculus, Cand.

Silesis musculus, Cand. Mém. Liège, 1873, p. 31.

There is a variety of this species also (var. *flavipennis*) with pale elytra which I think is *Agriotes ferruginipennis*, Motsch., 1866. Motschulsky's name for an *Agriotes* is preoccupied by Leconte in 1861, so Candèze's name will remain in either case.

Hab. Hakone, Fukui, Tsumago, Numata, and other places on the Nakasendo.

Silesis scabripennis, sp. n.

Ellipticus, nigro-brunneus, subnitidus, fulvo-pubescent; thorace antice rufo-marginato; elytris punctato-striatis, interstitiis granulatis, opacis; antennis pedibusque brunneo-rufis.

L. $6\frac{1}{2}$ mill.

Elliptical, dark brown, somewhat shining, pubescence tawny; the head not very closely punctulate; the thorax sparingly punctured on the disk, narrowly rufous on the anterior margin, hind angles a little acute, turning a little outwards; the elytra obscurely brown at the base, darker posteriorly, punctate-striate, interstices markedly rugose and opaque; the antennæ and legs reddish brown.

The sculpture of the interstices separates this species at once from *S. musculus*, Cand.; it is also narrower and more elliptical, thorax but little convex, and the scutellum less pointed behind.

Hab. Yuyama. One example.

Adrastus patagiatus, sp. n.

Niger, nitidus, griseo-pubescent; antennis basi testaceis, articulo

tertio secundo æquali ; elytris testaceis, sutura infuscata ; pedibus testaceis.

L. $4\frac{1}{2}$ –6 mill.

Black, shining, with griseous pubescence ; the head clearly, not very closely punctured ; the thorax much more finely punctured, infuscate, usually with a narrow margin anteriorly and at the sides, including the posterior angles, reddish ; the elytra punctate-striate, striæ rather fine, especially that next the suture, interstices flat, sparsely punctulate, interstices 1 and 2 wholly infuscate, 3 and 4 dark at base, 3 dark behind the middle, outer margin dusky about the middle or, in a variety, wholly dark ; the antennæ reddish at base, other articulations darker ; the legs wholly testaceous or reddish brown in the dark varieties.

This species varies in colour, sometimes the thorax and elytra are wholly infuscate. It is similar to *A. pallens*, F., in having the second and third joints equal and to *A. limbatus*, F., in general appearance ; the outer margin of the elytra in most of the specimens is narrowly infuscate in the middle only.

Hab. Chiuzenji, Hakone, Wada-toge, and Junsai.

Lepturoides (Campylus) versicolor, sp. n.

♂. Elongatus, colore variabilis ; capite grosse ocellato-punctato, fronte triangulariter excavata ; thorace rufo-brunneo, in medio canaliculato, ocellato-punctato ; elytris testaceis, punctato-striatis, interstitiis transversim rugosis, tibiis infuscatis.

♀ tota nigra.

L. 14–15 mill.

Elongate, male variable in colour, female black, with knees and claws only pale. The head rather uneven, with large ocellate punctures, forehead behind the carina triangularly excavated ; the thorax punctured like the head, median channel not wide, but well-marked, emarginate before the hind angles, which last turn outwards almost at right angles to the sides (this is a varying character) ; the scutellum punctulate, not carinate ; the elytra punctate-striate, obscurely punctulate near the base, interstices are then transversely rugose to the apex, the rugosities apparently crossing the striæ. The male : head black, thorax varying from black to reddish brown ; elytra usually testaceous, sometimes black, or with the suture and outer margins black ; legs equally variable, but the tibiæ usually infuscate. The antennæ black in both sexes.

Hab. Chiuzenji. Seventeen specimens, taken in June.

Lepturooides (Campylus) miniatus, Cand.

Campylus (Lepturooides) miniatus, Cand. Notes Leyd. Mus. 1885, vii. p. 121.

This species does not vary much in colour; there are generally two red spots on the head, but sometimes these are absent. The scutellum is distinctly carinate.

L. 9–15 $\frac{1}{2}$ mill.

Hab. Nikko, Miyanoshita, Subashiri, Ichiuchi, and Oyayama. Rather common in forests in May.

Lepturooides (Campylus) scutellaris, sp. n.

Lepturooidi miniato similimus sed minor; elytris obscure rufis; scutello valde carinato.

L. 10 mill.

This species is intermediate between *L. miniatus* and *oculatus*, but most like the first. The head punctate, punctures deep, rather close, but irregular, coloured like the head of *L. oculatus*, without the two spots seen in *L. miniatus*; the thorax blackish, with four nodules and margin reddish brown; the scutellum very strongly carinate, carina arched in outline, and well raised above the level of the elytra; the elytra dull red, punctate-striate, punctures very deep, interstices convex and rugose; the antennæ and legs black.

The scutellum in this species is as curiously formed as that in *Athous subcyaneus*, Motsch., of this series.

Hab. Oyayama. Two female examples.

Lepturooides (Campylus) oculatus, sp. n.

Infuscatus, subnitidus, pilosus; oculis prominulis; elytris coccineis profunde punctato-striatis, interstitiis rugosis; antennis pedibusque nigris.

L. 8–9 mill.

Infusate, rather shining, with fulvous hairs on the head and thorax, bright red hairs on the elytra; the head, frontal carina between the antennæ and a small space behind testaceous, punctate (in male not densely, in female densely), excavated behind the frontal carina, eyes small in the female, very prominent in the male; the thorax canaliculate in the middle, with two nodules on each side of the channel, nodules most conspicuous in the female, lateral margins testaceous, sometimes there are pale markings near the nodules; the scutellum punctate, carinate; the elytra bright red, punctate-striate, punctures very deep and similar to those of *L. miniatus*,

interstices flattish, quite flat in male, less so in female, rugose; the antennæ and legs infusate, claws pale; in two specimens there is a sutural dusky band, not, however, well-marked.

There are no spots on the head of this species like those of *L. miniatus*, Cand., but in facies it resembles small examples of it. In this and the two previous species the anterior trochanters are pale.

Hab. Miyanoshita and Subashiri. Nine examples.

Note.—Since the second part of the paper was printed I have received a new species of *Limonius* from Herr von Schönfeldt, viz. :—

Limonius eximius, sp. n.

Capite thoraceque viridi-aureis, sparse cinereo-pubescentibus; scutello perspicue carinato; elytris obscure purpureo-tinctis, interstitiis punctatis; antennis nigris; pedibus infuscatis.

L. 6 $\frac{1}{2}$ mill.

Greenish golden on the head and thorax, metallic, with ashy pubescence; the head punctate, punctures somewhat deep, not closely set, frontal carina well-marked, with the edge feebly sinuous, forehead conspicuously impressed, impression extending backwards triangularly between the eyes; the thorax narrowest anteriorly, punctured less deeply than the head, especially on the disk, hind angles obtuse; the scutellum coarsely and roughly punctured laterally, with a median smooth carina; the elytra dark bronze, with a purple tint, punctate-striate, interstices very feebly transversely rugose, almost flat and punctate; the antennæ black, joints 2 and 3 small and equal, 4 to 10 triangularly dilated on the inner edge; the legs, tibiæ, and tarsi infusate, femora obscurely brown.

This species in general facies resembles *L. ignicollis*, Lew. The frontal impression is similar, but the thorax is more finely punctured and less narrowed anteriorly, the scutellum is less wide but similarly punctate and carinate, the elytral interstices are not conspicuously rugose, but distinctly punctate only; the antennæ also are less dilated. The type examples of both species are males. The two species mentioned above, with *L. approximans*, Lew., and *L. aurifer*, Cand. (from N. America), appear to form a small group in the genus; all have a more or less distinct scutellar carina.

Hab. Main island (*Herr Roesing*).

List of Species.

- Adelocera Mäklinii*, *Cand.*
 — antennata.
 — parallela.
Lacon cordicollis, *Cand.*
 — binodulus, *Motsch.*
 — fuliginosus, *Cand.*
 — quadrinodatus.
 — scrofa, *Cand.*
 — tumens, *Cand.*
 — brunneus.
 — difficilis.
 trifasciatus, *Cand.*
Meristhus niponensis.
 — scobinula, *Cand.*
Alaus berus, *Cand.*
 — pini.
Tetrigus Lewisii, *Cand.*
 grandis, *Lew.*
Pectocera Fortunei, *Cand.*
Heteroderus agnatus, *Cand.*, 1891
 (*Æolus*, *Cand.*, 1873).
Anchastus aquilus, *Cand.*
 — mus.
 — rufipes.
Elater niponicus.
 — optabilis.
 — orientalis.
 — fagi.
 — convexicollis.
 — scutellaris.
 — rubridorsus, *Lew.*
 — ainu.
 — chlamydatus.
 — montanus.
 — puniceus, *Lew.*
 — miles.
 — canalicollis.
 — hypogastricus, *Cand.*
 — nigroventris.
 — vestitus.
 — tenuistriatus.
 — rufipes.
 — carbunculus, *Lew.*
 — bicarinatus, *Cand.*
 — rugipennis.
 — parvulus.
 — pauxillus.
 — gracilipes.
Megapenthes opacus, *Cand.*
 — bicarinatus.
 — higonius.
 — insidiosus.
- Megapenthes fujisanus*.
 — bifoveolatus.
 — cariniceps.
 — gracilis, *Cand.*
 — pallidus.
 — insignitus.
 — versipellis.
 — ornatus.
Melanoxanthus pictipennis.
 — similis.
Hypolithus saxatilis.
 — expansicornis.
 — fluviatilis.
Cryptohypnus rivalis.
 — cruciatus, *Cand.*
 — quadrillum, *Cand.*
 — optatus.
 — interstinctus.
 — tutus.
 — modestus.
 — humeralis, *Cand.*
 — curatus, *Cand.*
 — insulsus, *Cand.*
 — telluris, *Lew.*
 — luteipes, *Cand.*
 — difficilis.
 — albipilis, *Cand.*
 — atomarius.
 — ellipticus, *Cand.*
 — ovalis, *Cand.*
 — carinicollis.
 — minutissimus, *Germ.*
 — cinefactus.
 — agilis.
Cardiophorus pinguis.
 — niponicus.
 — opacus.
 — pullatus, *Cand.*
 — sequens, *Cand.*
 — pauper, *Cand.*
 — rameus, *Lew.*
 — nothus, *Cand.*
 — adjutor, *Cand.*
 — ferrugineus.
 sobrinus, *Cand.*
Melanotopsis cete, *Cand.*
 amussitatus, *Cand.*
 — restrictus, *Cand.*
Melanotus longipennis.
 — legatus, *Cand.*
 — sperendus, *Cand.*
 — annosus, *Cand.*

Melanotus correctus, *Cand.*

— *ocellato-punctatus*.

— *senilis*, *Cand.*

— *erythropygus*, *Cand.*

— *invecitius*, *Cand.*, ♂.

— *Fortnumi*, *Cand.*, ♀.

— *caudex*, *Lew.*

— *seniculus*, *Cand.*

Limonium niponensis.

— *montivagus*.

— *marginipennis*.

— *brunneus*.

— *marginicollis*.

— *vittatus*, *Cand.*

— *imitans*.

— *rufipennis*.

— *atricolor*, *Lew.*

— *ignicollis*.

— *eximius*.

— *approximans*.

Athous umbratilis.

— *subcyaneus*, *Motsch.*

— *secessus*, *Cand.*

— *sinuatus*.

— *virens*, *Cand.*

— var. *brunneipennis*.

— *sanguinicollis*, *Friv.*

— *desertor*, *Cand.*

— *comes*.

— *suturalis*.

— *porrecticollis*.

— *singularis*.

— *jactatus*.

— *inornatus*.

— *undatus*.

Corymbites daimio.

— *pruinatus*, *Motsch.*

— *orientalis*, *Cand.*

— *aerosus* (*Athous*), *Lew.*

— *modestus*.

— *selectus*, *Cand.*

— *fulvipennis*.

— *prænobilis*.

— *serrifer*, *Cand.*

— *hypocrita*.

Corymbites notabilis, *Cand.*

— *puncticollis*, *Motsch.*

— *onerosus*.

— *pacatus*.

— *vagepictus*.

— *mundulus*, *Lew.*

— *puerilis*, *Cand.*

— *gratus*.

— *ferrugineipennis*.

— *rubripennis*.

— *chlamydatus*.

— *concolor*.

— *obscuripes*.

Ludius niponensis.

— *Candezei*.

— *Sieboldii*, *Cand.*

Crigmus plebejus, *Cand.*

— *junior*, *Cand.*

— *linteatus*, *Cand.*

Sericus (*Dolerosoma*?) *sericarius*,
Motsch.

Agriotes longicollis.

— *persimilis*.

— *sericeus*, *Cand.*

— *sericans*, *Lew.*

— *sepes*, *Lew.*

— *exulatus*, *Cand.*

— *elegantulus*.

— *helvolus*, *Cand.*

— *oguræ*.

— *leucophæatus*, *Cand.*

— *palustris*.

Agonischius obscuripes, *Cand.*

Sericosomus viridis.

Glyphonyx illepidus, *Cand.*

— var. *bicolor*, *Cand.*

Silesis musculus, *Cand.*

— var. *flavipennis*.

— *scabripennis*.

Adrastus patagiatus.

Lepturoides (*Campylus*) *versicolor*.

— (—) *miniatus*, *Cand.*

— (—) *scutellaris*.

— (—) *oculatus*.