VII. *A Monograph of the British Species of the Genus Choleva.* *By William Spence, Esq. F.L.S.*

Read December 19, 1809.

It must have struck the Entomologist who has attended to the philosophy of his science, that Linné, in his institution of entomological genera, has been guided by a rule very different from that which he has followed in the sister science Botany. In the latter, his genera are numerous. When a tribe of plants was marked by a peculiar habit, he seldom scrupled to erect it into a distinct genus, even though obliged in some of the natural families to adopt very slight and evanescent generic characters. And where a plant decidedly differed in its inflorescence from every known genus, he rarely allowed similarity in habit to be any bar to its separation into a new one. In Entomology, on the contrary, his genera are extremely few; and of these a great proportion are clearly natural families: while at the same time, under more limited genera are not seldom included insects diametrically at variance with the generic character. But if, in Botany, the *Cruciatæ*, *Papilionaceæ*, &c. were to be regarded as families composed of several genera; so, on every principle of analogy, ought the Linnean entomological genera *Scarabæus*, *Curculio*, *Cerambyx*, *Musca*, &c., each of which includes tribes of insects of the most opposite œconomy, and most distinct and peculiar habit. And if

a variation in one essential character was deemed by Linné sufficient to entitle a single plant to rank as a genus, he ought unquestionably to have followed the same rule in Entomology.

Two solutions of this anomaly in the practice of our great head, present themselves. One, that chiefly occupied with botanical labours,—labours of which a tithe might well have employed the life of any ordinary man,—he had not leisure to give equal perfection to the other departments of natural history. The other, advanced by Fabricius in the preface to his first work the *Systema Entomologiæ*, and again repeated in his *Philosophia Entomologica*, that Linné, conscious of the imperfections and insufficiency of his entomological system, avoided the multiplication of genera, from fear of increasing that confusion which he was aware had in part arisen*.

The latter supposition, few but the devoted disciples of Fabricius will assent to. The former is more plausible, and is, in some measure, confirmed by the circumstance of Linné's having regarded natural families as genera in the Cryptogamic department of Botany, just as he has done in Entomology.

The incorrectness of both conjectures, however, may be inferred from a passage in the *Biga Insectorum*, the last of Linné's entomological labours, and composed when old age had matured his judgement. In this work the following paragraph occurs: "Plurima insectorum genera jam tum esse detecta, observamus, eorum consideratâ historiâ. Dom. Doct. Thunberg, qui singularem omninò operam rebus impendit entomologicis, per literas commemorat, se sub triennii ad Caput Bonæ Spei vix ullum genus novum reperire potuisse; et longius latiusque peregrinatus Dom.

* "Perspexit perbene summus Vir defectum systematis in characteribus genericis, ideoque rarissime nova genera condidit, ne e characteribus hisce vacillantibus accumulatis, major oriatur confusio." *Syst. Ent. Prolegom.* p. 9. See also *Philos. Ent.* p. 85 and 92.

Doct.

Doct. Forster, qui regiones invisit circa polum antarcticum sitas, neque ibi nova insectorum genera, sed paucissimas tantummodò species, se deprehendisse, narrat. Unde patet, genera insectorum nova admodum esse rara, nisi ante cognita quispiam vellet separata, ut *Hydroum* a *Dytiscis*, *Ipsidem* a *Dermestibus*."

From this it is obvious that Linné neither admitted the instability of his entomological system, nor was conscious of its incongruity with that which he had adopted in Botany. From his own long continued observation, and that of his travelling pupils, he infers, that few new genera of insects exist. And though he seems to admit that some of the old genera might be divided, the examples which he cites, prove that he was far from contemplating any general or numerous divulsions of this kind.

The anomaly in question may probably be more satisfactorily explained by adverting to the small number of entomological compared with botanical objects, with which Linné was acquainted. In that process of generalization which the mind adopts for the purpose of easily recollecting numerous facts, upon which is founded the institution of the groupes of natural objects termed genera, we do not usually subdivide our assemblages of ideas, until their accumulation has rendered it necessary. No more than 87 species of *Scarabæus*, 95 of *Curculio*, and 83 of *Cerambyx*, had ever been seen by Linné. Had he known the 657 species of his genus *Scarabæus*, the 725 of *Curculio*, and the 485 of *Cerambyx*, which crowd the pages of Fabricius's last work, there can be no reasonable doubt that he would have admitted the claim of such hosts to be deemed each a natural family including several genera, to be fully as well founded as that of the Papilionaceous, Umbelliferous, and Cruciate tribes of plants. And if he thought it proper to divide 893 species of Coleoptera (the whole number described in the last edition of the *Systema Naturæ*) into 30 genera,

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it is not likely that he would have objected to the division of the three just mentioned, now alone including twice as many species, into the 31 genera under which Fabricius has disposed them; or even into a greater number, if sufficient and obvious generic characters could be selected. The botanist who recollects his own original feelings of repugnance to the Hedwigian separation of the Mosses, or the Acharian of the Lichens; or the local entomologist who remembers what was his aversion to adopt many of the new genera of insects of modern authors until the inspection of foreign collections had enlarged his views—will see nothing unnatural, or injurious to the fame of his great master, in the supposition that the arrangements of his vast mind were bounded by the extent of his experience, and proportionably contracted where his observations were few.

Whatever was the cause of Linné's instituting so few entomological genera, succeeding authors soon saw the necessity of increasing the number. Geoffroy was the first to attempt much in this way, and for the most part with success. But Fabricius is the author who has established the most new genera; and if he had confined himself to improving the Linnean method, his efforts alone would by this time have brought Entomology to a high degree of perfection. Unhappily his notion that in insects the generic characters ought to be drawn, as they are in plants, from one class of organs only, and his ambition to be the founder of a new system, led him to build his genera upon parts which in nine cases out of ten it is impossible to see, and which, when seen, frequently do not afford characters so valuable as those which may be derived from more obvious organs. And it may be affirmed with perfect truth, that if Fabricius's generic characters were stripped of those explanatory accessories which he did not admit to be essential to them, it would be next to impossible

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for a tyro ever to make out a single insect by his works. Fortunately the arduous labours of this undoubtedly excellent entomologist are not greatly vitiated by the unsoundness of the base on which they rest. Fabricius is an almost solitary instance of the founder of a system entirely neglecting his own peculiar principles, and acting in nearly every instance agreeably to those which he professes to supersede. He has not, perhaps, constructed any one of his genera upon its Instrumenta Cibaria. Habit alone has evidently in almost every case led to their separation, th echaracters of the Instrumenta Cibaria of one species of each genus being for form's sake placed at its head. It is only upon this supposition that we can account for the undeniable facts, that many of the genera into which Fabricius has split some natural families (as *Scarabæus* and *Cerambyx* Linn.), though differing essentially in habit, have little or no difference in their Instrumenta Cibaria; and on the other hand, that all his large genera include insects which, having some affinity in point of habit, are yet *toto cælo* at variance with their generic characters. From this inconsistency has resulted the good consequence, that the bulk of the Fabrician genera are *natural*, and, when designated by intelligible and distinctive characters, may be adopted into any system.

The generic subdivisions, however, for which Entomology has to thank Fabricius, are much fewer than even the present state of the science demands, and probably not one fourth that will hereafter be called for. It is contrary both to analogy and experience to suppose that the Creator has formed fewer of those groupes into which we divide the vast tribes of nature by the name of genera, in one department than in another. Now in Botany, in which not more than about 20,000 species have been described, we have upwards of 2000 genera. In Entomology at least

least as many species are already described; and when we combine the circumstances that in Britain not fewer than 8000 species of insects are to be found, while we have but about 3000 plants; that these are probably not one half of the European insects, while we know that every other quarter of the globe is still more prolific in species wholly different; and lastly, that every kind of plant probably affords nutriment on the average to three or four species of insects, there can be little doubt that the insect is vastly more populous than the vegetable world. Is it likely, then, that the number of genera should be much fewer than in Botany; or at any rate that it should not very greatly exceed its present amount?—We need not fear that the science will be rendered more difficult by an augmentation of its genera. This cannot happen if a proper system be adopted. If two or three insects, or even a single one, be strikingly characterized by peculiarity of habit, they certainly ought in any system to be distinguished at least as sections of the genera under which they are placed. And will it increase the difficulty of investigation if they be established as genera upon the same characters, and distinguished by a name? Clearly not. On the contrary, the science can be effectually promoted in no other way; for names have an important influence upon the clearness of our ideas, and it will be impossible for us ever to gain correct views of the philosophy of our science, while genera essentially distinct are jumbled together under one title.

Entomology, therefore, is under the greatest obligation to Illiger in Germany, and Latreille in France, who having had the good sense to reject the useless while they retain the valuable parts of Fabricius's system, are labouring, by the institution of new genera built upon firm and intelligible characters, to extricate the science from the chaos into which that author has unwittingly

wittingly reduced it. Fabricius's system has now had a fair trial of upwards of thirty years, and it was at one time universally followed on the continent; yet so far is experience from having confirmed the assertion of its author, that the Linnean system is only calculated to introduce confusion into the science, that the very system professing to dissipate that confusion is even now fast sinking into oblivion, while the Linnean orders and generic characters, with such improvements as reason and analogy suggest, and as Linné himself would have approved, are reverted to by the most acute and learned entomologists of the age.

These observations, called for in some measure by the state of entomological opinion in this country, will not, I trust, be deemed an inappropriate introduction to the description I have here attempted of the British species of the genus *Choleva*—one of those which have been recently separated from the genera established by Linné.

By preceding authors, its species were referred to *Mordella*, *Dermestes*, or *Tritoma*. But between the years 1796 and 1800 not fewer than four entomologists, Latreille, Illiger, Paykull and Frölich, recognised their claims to be ranked under a distinct genus; each, from ignorance of the other's intention, selecting a different generic name. Of these, that of Latreille, having the priority in point of date, has been here adopted.

It may seem superfluous, perhaps, to attempt a new elucidation of a tribe which has engaged the attention of so many eminent entomologists; but it will probably be deemed a sufficient apology for this apparent presumption, to state, that our British cabinets contain at least nine yet undescribed species; and that I have attempted in the following arrangement to facilitate the investigation of the genus, by an attention to sectional and specific characters, hitherto unnoticed.

 Without

Without dwelling upon these, which will be sufficiently pointed out by the subsequent detailed descriptions, I shall pass on to a few remarks relative to the natural affinities of the genus.

As far as mere external appearance is concerned, *Choleva* has a considerable resemblance to *Mordella*. It has the same arched body, abdominal laminæ (as the posterior coxæ have been termed) and elongated feet. But this resemblance is merely superficial; and when we compare the parts of each, we see at once that *Choleva* which has subulated palpi, clavate antennæ, and setaceous tarsi of five joints, cannot justly be considered of the same genus with *Mordella* which has filiform antennæ, securiform maxillary palpi, and compressed posterior tarsi of four joints. The genus *Anisotoma* of Knoch (including *Silpha polita* Ent. Brit. &c.) can claim a more essential relationship to *Choleva*. The antennæ have the same short eighth joint, (a character peculiar, as far as I know, to these two genera and some species of two others to be mentioned hereafter,) the palpi are not very dissimilar; and though the body is more convex and hemispherical, there are not wanting species which in some degree supply the connecting links. But not to dwell upon the difference in the shape of the antennæ, which in *Anisotoma* are much shorter, with the club more distinct and compressed; the circumstance of the last genus having but four joints in the posterior tarsi, is alone a sufficient reason for regarding *Choleva* as distinct. *Dermestes* and *Silpha* (particularly the family of the latter with clavate antennæ excluding *S. obscura*, &c.) are the only two remaining genera known to me that have any affinity with *Choleva*. They have a similar œconomy, and in two or three species of the latter (e. g. *S. thoracica*, *rugosa*, and *sinuata*,) the eighth joint of the antennæ, is, though very slightly and inconspicuously, shorter than the one preceding it. But in *Dermestes* the short antennæ

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with a distinct triarticulate clava, the different Instrumenta Cibaria, epipleuræ, posterior coxæ, and feet,—and in *Silpha*, the dilated margin of the thorax, the more depressed body, antennæ with triarticulate clava, and different Instrumentaria Cibaria &c., —afford discriminating generic characters amply sufficient. Latreille has associated *Choleva* in his "*Stirps tertia*" of his family "*Necrophagi*" along with *Scaphidium*, *Agyrtes*, and *Mylæchus*. *Agyrtes* I am not acquainted with. *Mylæchus* is unquestionably rightly placed here; but I greatly doubt the existence of any relationship between *Choleva* and *Scaphidium*. It is true that in one species (*Silpha agaricina* Linn. *Scaphidium acuminatum* Ent. Brit.) the eighth joint of the antennæ is shorter than those adjoining. But this is the only resemblance. The remarkably thin-stalked antennæ of *Scaphidium*; its large emarginate eyes; abbreviated elytra; acute abdomen; remote posterior feet and differently formed coxæ—in short the whole habit; strikingly remove it to a very wide distance from *Choleva*.

These remarks, imperfect as they are, on the affinities of the genus under consideration, lead us to its essential character. This is drawn from the relative short eighth joint and mucronate last joint of the more or less clavate antennæ, and the subulato-conical last joint of the incurved palpi; combined with the entire elytra and five-jointed tarsi. The first member of this character distinguishes *Choleva* from every other genus known to me except *Anisotoma*, one or more species of *Scaphidium*, and some of *Silpha**. The character drawn from the tarsi separates it from the first: that from the elytra from the second; and that from the palpi from the last.

* That singular insect *Dermestes Cassidoides* Ent. Brit., which has very properly been formed into a genus by Andersch, under the title of *Clypeaster* (a name, however, preoccupied in another Class) has, like *Choleva*, the fourth joint of the antennæ, from the *apex*, much shorter than the rest; but as in it the antennæ have but nine joints, it is the *sixth* and not the eighth joint from the *base* that is the shortest.

It may be necessary to add a few words relative to the species included under this genus by other authors, but not here described or referred to. Of the five enumerated by Frölich in his paper in the *Naturforscher*, the three first are true *Cholevæ:* the two last, *Luperus pallidus*, and *sanguinicollis*, with filiform antennæ, seem to belong to some other genus. The former is probably *Cyphon pallidus* of Fabricius, *Crioceris pallida* of Marsham. Of the six species of *Catops* described by Fabricius in the *Systema Eleutheratorum*, *C. sericeus*, *agilis*, and *Morio*, are doubtless true *Cholevæ*, and probably synonymous with species here described; though from the brevity of the descriptions it is not possible to be certain on this head. *C. vittatus* was before a *Tritoma;* and being described from Dr. Hunter's cabinet, which Fabricius could not refer to, its claim to be deemed a *Catops* is very doubtful; which may be said also of *C. flavipes*, a *Helops* of the *Ent. Syst.* This last is an American species with crenate striæ,—a character found in none else of the genus, and is, according to Illiger, a true *Cistela.* The remaining species, *C. rufescens* (*Tritoma minuta* Ent. Syst.) is very obscure. It is synonymed with *Chrysomela minuta* Linn., which is beyond all question one of the laminated *Dytici*, (*D. ruficollis* Ent. Brit.) and in the *Ent. Syst.* Fabricius gives as its habitat "In aquosis." This he has changed in the *Syst. Eleuth.* for "sub corticibus arborum:" but he still retains Linné's synonym, adding to it, surely very erroneously, *Ptomaphagus rufescens* of Illiger. The description is very short and inexpressive, so that it is impossible to guess what is meant by this species; and no cabinet is referred to.

It is somewhat remarkable that I have never observed a single species of this genus in any of the rich foreign cabinets of the metropolis.

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CHOLEVA.

CHOLEVA* *Latr.* PTOMAPHAGUS *Knoch, Illig.* CATOPS *Fab. Payk. Gyll.* LUPERUS *Frölich.* MORDELLA *Forster, Marsham.* DERMESTES *De Geer.* PELTIS *Geoffroy.*

Character Essentialis.

Antennæ subclavatæ: articulo octavo contiguis minori, extimo submucronato.

Palpi quatuor inæquales: exteriores fracti, articulo extimo subulato-conico.

Coleoptra integra.

Tarsi quinque-articulati, setacei.

Character Naturalis.

CORPUS parvum, agile, oblongum, sub-crassum, convexum, fornicatum, (vel anticè et posticè declive,) alatum, subtilitèr rugulosum, pube breve adpressâ vestitum, colore obscuro sed florido obductum.

CAPUT thorace minus, perpendiculariter inflexum, subtriangulari-ovatum, anticè subtruncatum, posticè rotundatum, margine posteriori acutissimo, collo valdè constricto thoraci insertum.

Oculi parvi, subhemisphærici, prominuli, laterales, in angulo postico capitis inserti.

* A χωλεύω, *claudico*; from the halting gait of some species.

Antennæ

Antennæ ante oculos in fovea laterali capitis insertæ, corporis dimidium longitudine haud superantes, sed capite semper longiores, subclavatæ, undecim-articulatæ (radiculâ exclusâ): articulis 1—3 subcylindricis, primo paulò crassiore, secundo paulò breviore; 4—6 precedentibus sensim paulò brevioribus et apice crassioribus; 7—11 reliquis crassioribus clavam quinque-articulatam subperfoliatam efficientibus: articulo secundo (vel antennarum 8vo) contiguis minori; extimo submucronato, mucrone conico.

Nasus (s. *Clypeus*) haud distinctus, apice truncatus.

Labrum transversum, angustum, apice emarginato-truncatum.

Mandibulæ sub labro dimidiato-absconditæ, corneæ, breves, validæ; basi triangulares, crassæ, latæ, dorso planiusculæ; apice tenuiores, incurvæ, dente acuto adunco terminatæ; margine interiori apice inciso vel denticulato, basi membrana ciliato.

Maxillæ tenues, stipite sub-æquilata, cornea; lobo bipartito: laciniis corneo-membranaceis; *exteriori* lineari apice obliquè truncata; *interiori* paulò breviori sub-triangulari-securiformi, ungue corneo incurvo desinente, margine interiori apice ciliato.

Palpi quatuor inæquales: *exteriores* (s. *maxillares*) longiores, maxillarum dorso innati, exserti, quadriarticulati: articulo primo minutissimo vix conspicuo; secundo multò longiore, versus apicem sensim crassiore, subincurvo; tertio magno, obconico, precedentis ferè longitudine, apice obliquè truncato, cum precedente angulum obtusum efficiente, unde fractus

tus evadit palpus; extimo paulò breviore subulato-conico;—*interiores* (s. *labiales*) sub apice ligulæ a lateribus provenientes, brevissimi, sed lobis ligulæ paulò longiores, sine dissectione vix conspiciendi, tri-articulati: articulis brevissimis longitudine æqualibus, subcylindricis, sensim crassitie decrescentibus; extimo obtuso.

Ligula membranacea, diaphana, sub labio dimidiato-abscondita, apice excisione magna triangulari in lobis duobus subtriangularibus partita.

Labium transversum, trapeziforme-quadratum, acclivè.

Mentum obversè trapeziforme-quadratum labii magnitudine, declivè.

Jugulum (*Gula* Knoch) distinctum, sub-oblongo-quadratum.

TRUNCUS. *Thorax* plerumque transversus, sub-orbiculato-quadratus, anticè pro capitis receptione leviter emarginatus, posticè truncato-sinuatus; plano-convexus, angulis anticis deflexis, marginibus lateralibus rotundatis; apice lateribusque canaliculo marginali tenuissimo, sub lente forti solummodo conspiciendo, circumdatus.

Scutellum triangulare, ad basin laminâ transversâ, angustâ, lævi, nitidâ, sub thorace plerumque delitescente, instructum. Truncus pone scutellum (*Interscapulium* Illig.) sulculo longitudinali exaratus.

Coleoptra oblongiuscula, vel ovata, convexa, thorace haud multò latiora, sed duplò vel triplò longiora; rigidula, integra, abdomen tegentia. Elytra margine exteriori tenui, et striâ juxta suturam impressa; *Epi-*

pleura

*pleura** inflexa, post-pectoris abdominisque latera amplectens, concava, interdum plana, sublineari-lanceolata, a basi ad apicem Elytrorum ferè extendens, vix marginata, rarissimè canaliculo marginali instructa.

Alæ transversè plicatæ, hyalinæ, dimidiato-ovatæ, corpore longiores, neuris tribus vel quatuor validiusculis.

Pectus naviculare: sternum acutè carinatum, concavum, sive segmento circuli dempto, inter coxas pedum anticorum latens.

Post-pectus (*Pectus* Illig.) subgibbosum abdominis longitudine. *Peristethium* subplaniusculum (est ubi in medio acutè carinatum) acumine longo spectante inter coxas intermedias terminatum. *Scapularia* (*Scapula* Knoch) triangulari-trapeziformia. *Mesostethium* subcordato-quadratum, gibbosiusculum, interdum processu apice bifido, inter coxas posticas delitescente terminatum. *Parapleuræ* angustissimè triangulares, cum pleuris in carinulam obtusangulam longitudinaliter coalitæ.

Pedes cursorii, subelongati, graciles, antici intermediis, intermedii posticis breviores†. *Coxæ* approximatæ: anteriores dimidiato-conicæ, femoribus crassiores et breviores; posticæ (*Meriæa* Knoch) transversè lineares supra planiusculæ, subtus convexæ, intus cavæ.

* A term happily suggested by Mr. Kirby to designate the deflexed lateral margin of the elytra so conspicuous in *Blaps*, *Cychrus*, &c. and, if I mistake not, often supplying very valuable subsidiary generic characters.

† I adopt Knoch's very convenient suggestion, and apply the term *anteriores* when the *four fore* feet, *posteriores* when the *four hind* feet, are understood; using *antici*, *medii*, and *postici* for the two fore, two middle, and two hind feet, respectively.

Trochanteres

Trochanteres subtriangulares latere exteriori rotundati, femora suffulcientes: anteriores parvi, minus conspicui; postici plus duplò majores. *Femora* compressa, sublinearia, subinde dimidiato-ovata: antica in fœmina apice tenuiora, in mare plerumque incrassata. *Tibiæ* tenuiores ex triquetro teretiusculæ, a basi ad apicem sensim crassiores, setis rarioribus brevibus apicem spectantibus extus adspersæ, apice interiori bicalcaratæ; anticæ reliquis validiores; intermediæ versus apicem tenuitèr incurvatæ. *Tarsi* setacei, tibiarum ferè longitudine, articulis quinque: primo et extimo longioribus, tribus intermediis subæqualibus; apice ungulati, ungulis binis incurvis. Tarsi antici masculi articulis tribus primis, medii interdum articulo primo, dilatatis.

ABDOMEN subtriangulare, tergo levitèr concavo: segmentis penultimo et ultimo convexiusculis; ventre convexo; segmentis dorsalibus septem, coriaceis, transversis, subæqualibus, ultimo longiore; segmentis ventralibus sex: primo reliquis longiore, basi utrinque obliquè excavato, excavationibus sublanceolatis, pro coxis posticis recipiendis; et inter has plerumque dente uno alterove erectiusculo inter coxas delitescente, instructo. Segmenta sequentia transversa, latitudine sensim decrescentia, extimo minuto acutiusculo.

METAMORPHOSIS nondum innotuit.

VICTUS in fungis, cadaveribus, sub lapidibus, et quisquiliis.

CHOLEVA.

Synopsis Sectionum.

* Antennis subfiliformibus; thorace angulis posticis obtusis. (*Spec.* 1 & 2.)

** Antennis clavatis; thorace angulis posticis acutis; Elytris plerumque obsoletè striatis.

(Femoribus anticis in mare plerumque apice subincrassatis, tarsis mediis articulo primo dilatato.)

a Thorace margine basilari prope angulos exciso. (*Spec.* 3—6.)

b ——————————————— recto. (*Spec.* 7—12.)

*** Antennis clavatis; thorace angulis posticis acutis; Elytris haud striatis. (*Spec.* 13—18.)

(Femoribus anticis in utroque sexu similibus, tarsis mediis articulo primo rarè dilatato.)

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1. CHOLEVA *oblonga.*

C. angustato-oblonga, thorace posticè angustiore, medio subfoveolato.

Latr. Gen. Crust. et Ins. ii. 27. 1.

Cistela angustata. *Fab. Ent. Syst.* i. *b.* 46. 25. *Syst. Eleuth.* ii. 20.

Catops elongatus. *Payk. Faun. Suec.* i. 345. 3. *Gyllenhal Ins. Suec.* i. 281. 6.

Ptomaphagus rufescens. *Illig. Käfer Preussens* 87. 1.

Mordella picea. *Marsh. Ent. Brit.* i. 494. 21.

Luperus

Luperus Cisteloides. *Frölich Naturforsch. St.* xxviii. 25. 3. *Tab.* i. *f.* 15.

Carabus rufescens. *Herbst Arch.* v. 139. 49?

Long. Corp. $2\frac{1}{2}$ lin. Lat. $\frac{3}{4}$ lin.

Habitat ——— *Mus.* D. Marsham, Kirby, Nostr.

DESCR. CORPUS angustato-oblongum, pube parvâ fulvescente obscuratum.

CAPUT nigrum, nitidum, læve. *Labrum Palpi*que pallidè ferruginea. *Mandibulæ* ferrugineæ, latere interiore denticulis 4 vel 5 parvis instructæ. *Antennæ* ferrugineæ, filiformes, apice paulò crassiores, corporis dimidio ferè longiores; articulis longitudine subæqualibus, secundo et octavo reliquis paulò brevioribus exceptis; 2—6 cylindricis apice paulò incrassatis, 7—11 sensim paulò crassioribus ferè obconicis, ultimo lanceolato.

TRUNCUS. *Thorax* plerumque piceus lateribus seu angulis posticis dilutioribus, interdum totus niger sive nigro-piceus; lævis vel obsoletissimè sub lente forti rugulosus; subplanus, quadrato-orbiculatus, longitudinis latitudine, basi apiceque latitudine subæqualis, in medio latior; posticè rectus angulis rotundatis; in medio plerumque obsoletè longitudinaliter foveolatus. *Scutellum* acuminatum, sub lente rugulosum. *Coleoptra* plerumque obscurè rufescentia, interdum nigra, sive nigro-picea, sive picea; sub lente obsoletè rugosa; oblonga, apice obtusè rotundata, thorace triplò longiora et in medio paulò latiora; parum convexa; striis septem obsoletis in singulo Elytro a basi ad apicem excurrentibus, et ut in omnibus, striâ suturali profundiore; paginâ inferiore striis septem punctorum. *Pectus* et *Post-pectus* sub-lævia nigra. *Mesostethium* posticè magis acutum quàm in reliquis, in processum apice emarginatum productum. *Pedes* ferruginei: posticis elongatis corporis longitudine; femoribus anticis ejusdem formæ in utroque sexu; posticis in mare trochanteribus latere inferiori dente curvato extante, in fœmina inermibus; tarsis mediis articulo primo in utroque sexu filiformi.

ABDOMEN sub-læve, nigrum, segmentis extremo apice pallidioribus.

Var. β. flavo-testacea tota, forsan nuper e nymphâ declarata.

No species of the genus can be less easily mistaken than this; and accordingly no doubt attaches to any of the synonyms quoted except that from Herbst.

The unsuspected identity of this species and *Cistela angustata*

of Fabricius, I accidentally discovered in looking over the Banksian cabinet from which he described that species.

2. CHOLEVA *agilis.*

C. oblongo-ovalis, nigra, supra piceo-brunnea, antennis pedibusque ferrugineis; thorace posticè latiori.

Ptomaphagus agilis. *Illig. Käf. Preus.* 88. 2.
Catops agilis. *Fab. Syst. Eleuth.* ii. 565. 6?
Tritoma dubia. *Fab. Ent. Syst.* i. b. 506. 5?
Catops fuscus. *Gyll. Ins. Suec.* i. 281. 5.
Helops fuscus. *Panz. Faun. Germ.* 18. 1??

Long. Corp. $2\frac{1}{4}$ lin. Lat. $1\frac{1}{4}$ lin.

Habitat ——— *Mus.* D. Kirby, Wilkin, β. nostr.

DESCR. CORPUS paulò brevius et latius quàm in precedente, pube griseo-fulvescente paulò densiori, sub lente obsoletè rugulosum.

CAPUT nigro-piceum, læve. *Labrum Mandibulæ Palpique* flava. *Antennæ* ferrugineæ, apice saturatiores, eâdem ferè structurâ ut in precedente, sed articulis paulò brevioribus et crassioribus.

TRUNCUS. *Thorax* piceo-brunneus, disco saturatiore; sub-convexus, ex transverso subquadratus, longitudine paulò latior, ab apice ferè ad basin sensim dilatatus, sed apud basin ipsam iterum paulò angustatus, ita, tamen, ut basis latior quàm apex maneat; posticè rectus, angulis obtusis rotundatis. *Scutellum* subacuminatum. *Coleoptra* ovato-oblonga, apice obtusè rotundata, thorace ferè triplò longiora, piceo-brunnea, striis septem obsoletis in singulo Elytro a basi ad apicem excurrentibus, quàm in precedente obsoletioribus. *Pectus* et *Postpectus* piceo-nigra. *Pedes* ferruginei.

Var. β. flavo-testacea tota. An specimen immaturum?
Choleva testacea. *Latreille Gen. Crust. et Ins.* ii. 26. 2.

Illiger, Latreille and Gyllenhal are the only authors to whom I can refer with confidence as having described this species. I have little doubt that it is the former's *Ptomaphagus agilis*, with the

the description of which in the main it very well agrees. The only discordance is in the character given to the posterior angles of the thorax, which he calls acute. He quotes as synonymous *Tritoma dubia* of Fabricius, and I have therefore inserted this reference; but Fabricius's description is too brief to give certainty as to the identity of his species with ours. Certainly *C. agilis* of Panzer, which Panzer calls *C. agilis* Fab., is a very different insect; belonging to the last section of this monograph, only $1\frac{1}{2}$ line long, with antennæ shorter than the thorax.

Latreille's description very well suits the flavo-testaceous immature variety, if we suppose, as is most probable, that the male is furnished with toothed hind trochanters, and that this was the sex he had before him. He synonyms with his species, but in doubt, Panzer's *Helops fuscus* 18. 1. and there is certainly some resemblance; but the latter is figured with the basal margin of the thorax sinuate on each side; which will by no means apply to *C. agilis.*

* * a

3. CHOLEVA *nigricans.*

C. oblongo-ovalis, nigra, antennis thorace longioribus, pedibusque, ferrugineis.

Luperus niger. *Frölich Naturforsch.* 28. 23. 1. *Tab.* i. *fig.* 17?

Dermestes fornicatus. *De Geer Mem.* iv. 216. 9. *Tab.* viii. *fig.* 15?

Long. Corp. $2\frac{1}{2}$ lin. Lat. $1\frac{1}{4}$ lin.

Habitat ——— *Mus.* D. J. Hooker, Wilkin. β. D. Kirby. γ. D. Kirby, Wilkin.

DESCR. CORPUS oblongius quàm in reliquis hujus familiæ; nigrum, obsoletè rugulosum, pube griseo-fulvescente vestitum.

CAPUT sub lente subtilitèr punctatum: punctis confertis, distinctis. *Palpi* ferruginei. *Antennæ* ferrugineæ apice interdum fuscescentes, sub-clavatæ, thorace paulò longiores; articulis 2—6 obconico-cylindricis subæqualibus, 7—11 precedentibus sensim

sensim crassioribus, 8vo contiguis paulò breviori et angustiori, extimo reliquis crassiore globoso-ovato, apice obtusè mucronato.

TRUNCUS. *Thorax* ex transverso quadratus, longitudine paulò latior, margine basali in medio parum rotundato, ad angulos utrinque distinctè exciso. *Coleoptra* thorace plus duplò longiora et paulò latiora, obsoletè striata, striis a basi ad apicem excurrentibus. *Pedes* piceo-ferruginei.

Var. β. piceo-brunnea, labro, antennis, pedibusque ferrugineis.
Mordella cicatricata. *Marsh. Ent. Brit.* 495. 23.

γ. flavo-testacea, capite obscuriore; an nuper e nymphâ declarata?

I have referred De Geer's *Dermestes fornicatus* to this species, rather than, as is usually done, to *C. tristis* of this paper, because both his figure, and his description of the antennæ, which he calls longer than the head and thorax, are much more applicable to the former than to the latter.

4. CHOLEVA *sericea.*

C. ovata, gibboso-convexa, fusco-picea, antennis thorace paulò longioribus, pedibusque, piceo-ferrugineis.

Catops sericeus. *Payk. Faun. Suec.* i. 342. 1. *Fab. Syst. Eleuth.* ii. 564. 2?

Tritoma sericea. *Fab. Ent. Syst. em.* i. *b.* 507. 8? *Herbst Col.* iv. 196. 6?

Luperus fuscus. *Frölich Naturf.* xxviii. 24. 2. *Tab.* i. *fig.* 16?

Long. Corp. $2\frac{1}{4}$ lin. Lat. $1\frac{1}{3}$ lin.

Habitat ——— *Mus.* Nostr.

DESCR. CORPUS quàm in congeneribus latius et convexius, precedente brevius, pube tenui adpressâ fulvescente glaucâ griseâve versicolore vestitum; sub lente (pube abrasâ) obsoletè rugulosum.

CAPUT sub lente distinctè et confertim punctulatum. *Palpi* piceo-ferruginei. *Antennæ* ferrugineæ basi apiceque dilutiores, thorace paulò longiores; structurâ fere eâdem ut in precedente, sed paulò breviores et ad apicem paulò tenuiores.

TRUNCUS.

TRUNCUS. *Thorax* quadrato-transversus longitudine tertiâ parte latior, anticè ferè dimidio angustior quàm posticè, basi rectior quàm in precedente truncatus, excisionibus levioribus. *Coleoptra* thorace plus duplò longiora et in medio dimidio latiora, pone medium latissima, obsoletissimè striata, striis sub lente a basi ad apicem excurrentibus.

Var. β. flavo-testacea tota; an nuper e nymphâ declarata?

The antennæ of this and the preceding are of a conformation intermediate between that of the antennæ of *C. oblonga* and *agilis*, and of the remaining species of this family; the fifth and sixth joints not being so distinctly shorter than the third and fourth as in the next two species; the eighth joint not so evidently less than the ninth, and the club of the antennæ not so distinctly formed. I have not seen the male of this insect.

I have little hesitation in quoting Paykull's *Catops sericeus* as synonymous with this species, although it has generally been referred to the next. His description for the most part accords much better with this than with that, or indeed with any other of the genus. His omission to notice the small eighth joint of the antennæ, may be easily accounted for in describing this species, in which that part is not much more distinctly less than in *C. oblonga*, where also he has overlooked it. The thorax, though contracted just at the base as in all the rest of this section, is yet, as he describes it, in this species, nearly twice as wide there as at the apex, which is by no means the case in the next. But the characters in his description which most indisputably fix the identity of the two insects are those given of the elytra—"*anticè valdè convexa, gibba, latitudine vix dimidio longiora.*" These will suit no other species, but are, if we refer the convexity to the middle rather than the base of the elytra, very applicable to this. The only incongruity in his description is the obscure testaceous colour attributed to the elytra, which in my insect are

of

of the same colour as the rest of the body: but this difference is of little moment in so variable a genus.

The references to Fabricius and to Herbst are adopted on the authority of Paykull. The characters given by the former are too brief to decide by; and the latter seems merely to have copied Fabricius. The figure of Frölich's *Luperus fuscus*, as well as his description in which he characterizes that as "*kleiner und mehr buchlicht*" than the foregoing, (his *L. niger*,) appear to be intended for this species.

5. CHOLEVA *tristis*.

C. oblongo-ovalis, nigra, antennis basi, tibiis, tarsisque ferrugineis; capite anticè abbreviato.

Latreille Gen. Crust. et Ins. ii. 28. 3.

Ptomaphagus fornicatus. *Illig. Käf. Preus.* i. 89. 3.

Dermestes fornicatus. *Rossi Faun. Etrusc.* 352. 31?

Catops Morio. *Payk. Faun. Suec.* i. 344. 4. *Fab. Syst. Eleuth.* ii. 564. 4?

Mordella clavicornis. *Forst. Cent.* 66. *Marsh. Ent. Brit.* i. 494. 22.

Cistela ovata. *Oliv. Ent.* iii. 54. 10. 12. *Tab.* i. 11. *a. b*?

Helops tristis. *Panz. Faun. Germ.* 8. 1. *Ent.* i. 43. 9.

Chrysomela gibbosa. *Thunberg. Nov. Act. Ups.* iv. 14. 24.

Tritoma Morio. *Fab. Ent. Syst. em.* i. 507. 7?

Catops fornicatus. *Gyll. Ins. Suec.* i. 276. 1.

Long. Corp. $1\frac{3}{4}$—2 lin. Lat. $1\frac{1}{4}$ lin.

Habitat ——— *Mus.* D. Marsham, Wilkin, Nostr.

DESCR. CORPUS oblongo-ovale, nigrum, pube fulvescente quàm in precedente rariori vestitum; sub lente obsoletè rugulosum.

CAPUT sub lente levitèr et crebrè punctatum, ante antennas brevius quàm in duabus precedentibus. *Palpi* ferruginei. *Antennæ* thoracis longitudine, articulis 4, 5, vel 6 primis, ferrugineis, reliquis nigro-fuscis; articulo 8vo contiguis ferè dimidiò breviore et angustiore.

TRUNCUS.

TRUNCUS. *Thorax* transverso-sub-quadratus, longitudine paulò latior, basi apiceque latitudine subæqualis. *Coleoptra* thorace vix latiora sed plus duplò longiora, striis obsoletissimis a basi usque ad apicem decurrentibus, apice rotundata sed magis acuta quàm in precedente. *Pedes* rufo-ferruginei; interdum nigro-picei, tibiis tarsisque rufo-ferrugineis; in mare femoribus anticis apice incrassatis, tarsis mediis articulo primo dilatato.

If the preceding species can be best referred to Paykull's *Catops sericeus*, there is equal reason to believe that the present is his *C. Morio*, which he characterizes as more oblong than that, its thorax narrower, and nearly as broad before as behind; the antennæ with a minute eighth joint; the elytra less convex, "*thorace plus quam dimidio longiora;*" the thighs fuscous; and, lastly, almost one half less in size.

The synonyms quoted from Illiger, Latreille, and Panzer are liable to little or no doubt. The magnified figure which the latter has given of the head and antennæ of his *Helops tristis* aptly represents those parts in this species, the fore part of the head being shorter than is common in this family, just as he has figured it. I refer to Fabricius on the authority of Paykull. His description of *C. Morio* suits neither this species nor any other of the genus: for I know not one with wholly black antennæ.

6. CHOLEVA *festinans.*

C. oblongo-ovata nigra, antennis basi, labro, elytris, pedibusque rufo-testaceis; thorace anticè angustiore.

Long. Corp. 2 lin. Lat. $1\frac{1}{6}$ lin.

Habitat ——— *Mus.* D. Kirby.

DESCR. CORPUS oblongo-ovatum, pube fulvescente densiori quàm in precedente, vestitum, sub lente, pube abrasâ, obsoletissimè rugulosum.

CAPUT sub lente punctulatum. *Labrum Palpi*que ferruginea. *Antennæ* ferè ut in precedente, sed paulò breviores, articulis 6 primis ferrugineis, reliquis fuscis.

TRUNCUS. *Thorax* nigro-fuscus, ad margines fusco-testaceus, transversus, brevior et anticè angustior quàm in precedente, margine basilari utrinque ad angulos magis levitèr exciso. *Coleoptra* rubricosa (sive rufo-testacea) thorace triplò ferè longiora et paulò latiora, striis obsoletis, sed a basi usque ferè ad apicem ductis. *Pedes* rufo-ferruginei.

ABDOMEN sublæve, segmentis ventralibus apice brevissimè ciliatis; ano parum rufescente.

From the preceding, the only species with which it is likely to be confounded, this differs in colour; in having the thorax shorter in proportion to its width, narrower before, and the excisions at the angles more obsolete; and the elytra more densely clothed with pubescence.

* * b.

7. CHOLEVA *chrysomeloides.*

C. oblongo-ovalis, nigra, antennis basi, tibiis, tarsisque rufo-brunneis; antennis *fœmineis* fusiformi-clavatis, crassis: articulo extimo ovato, contiguis longiore.

Latr. Gen. Crust. et Ins. ii. 29. 4.

Helops chrysomeloides. *Panz. Faun. Germ.* 57. 1.

Long. Corp. $2\frac{1}{2}$ lin. Lat. $1\frac{1}{4}$ lin.

Habitat ——— *Mus.* D. Kirby, Watson, Wilkin, Nostr. β. D. J. Hooker.

DESCR. CORPUS ovale, nigrum, pube densâ griseo-fulvescente holosericeum, sub lente, pube abrasâ, subtilissimè punctato-rugulosum.

CAPUT confertissimè punctulatum. *Palpi* rufo-brunnei. *Mandibulæ* latere interiori sub apice emarginato vel unidentato. *Antennæ* in *fœmina* subfusiformes, crassæ, thorace tertiâ parte breviores, in mare paulò tenuiores longiores; basi rufo-brunneæ; articulis 1—3 subæqualibus obconicis: 2do contiguis paulò breviore; 4—6 turbinatis, precedentibus dimidio brevioribus; 7, 9 et 10 sub-pateræformibus; 8vo contiguis triplò breviore et multò angustiore; extimo precedente ferè duplò longiore, articuli tertii longitudine, ovato.

TRUNCUS. *Thorax* subquadratus, longitudine paulò latior, lateribus rotundatis, ad angulos posticos subrectis; margine basilari subrecto, excisionibus apud angulos nullis,

nullis, sed medio utrinque levissimè sinuato. *Alæ* apice fuscæ. *Coleoptra* oblongo-ovata, thorace ferè triplò longiora et in medio paulò latiora, pube derasâ, obsoletissimè striata. *Pedes* nigri, femoribus anticis apice, tibiis, tarsisque, rufo-brunneis.

Var. β. griseo-fusca, capite thoracisque disco obscurioribus; thorace pube fulvescente, elytris, grisescente, vestitis. An species distincta?

Of this species I have seen two or three specimens of each sex. They exhibit no other than the usual sexual differences. The females are slightly larger, and their antennæ a little thicker and longer.—There can be no danger of confounding this with any species of the two preceding sections. In habit it approaches nearest to *C. tristis*; but the resemblance is superficial merely, there being a wide difference in the form and structure of the antennæ and thorax, as the description of each has indicated.—The elytra of this insect have no appearance of striæ except the pubescence is scraped off, when a few faint traces are generally to be observed.—The antennæ vary with respect to the colour of the base. In some only the base of the first joint is reddish brown; in others the two first joints, and in one specimen the first six joints, were wholly of this colour.—In the female they are thicker than in any other species of the genus.—The lateral margins of the thorax are rounded from the apex almost to the base, but close to the base they are nearly straight and parallel. To see this character a microscope and a keen eye are requisite, especially if the thorax be clothed with the usual thick pubescence.

Panzer's figure appears to be intended for this species, though neither the antennæ nor the basal margin of the thorax are correctly drawn, and the feet are coloured wholly yellow.—Latreille's

description leaves no doubt as to the correctness of the reference to him.

8. CHOLEVA *Leachii.*

C. ovalis nigra, antennis basi, tibiis, tarsisque, rufo-brunneis; antennis clavatis: articulo extimo brevi, mucronato; capite anticè abbreviato.

Long. Corp. $2\frac{1}{4}$ lin. Lat. $1\frac{1}{4}$ lin.

Habitat ——— *Mus.* D. Leach, Watson, Wilkin.

Precedentis descriptio huic speciei applicari potest, differentiis sequentibus exceptis. *Antennæ* tenuiores, basi rufo-brunneæ, apice sub-fuscescentes; articulis sex ultimis pateræformi-turbinatis; extimo haud ovato contiguis angustiore et duplò longiore, sed globoso-ovata mucronata, illis subæquali. *Caput* quàm in precedente minus, ante antennas brevius. *Elytra* respectu thoracis breviora.

The characters which separate this species from the preceding are not very obvious, but sufficiently constant, as a narrow examination of not fewer than twelve specimens, ten of which were supplied by my friend Dr. Leach, F.L.S., whose name it bears, has proved, to constitute it perfectly distinct.

9. CHOLEVA *Kirbii.*

C. obovata fusca, pedibus dilutioribus, antennis basi ferrugineis, articulis ultimis transversis; elytris apice acutis.

Long. Corp. $1\frac{7}{8}$ lin. Lat. 1 lin.

Habitat ——— *Mus.* D. Kirby, Nostr. *β.* D. Kirby.

DESCR. CORPUS obovatum, fuscum, pube grisescente vestitum, sub lente, pube detritâ, obsoletè rugulosum.

CAPUT punctulatum. *Labrum Palpi*que ferruginea. *Antennæ* articulis quinque primis ferrugineis, reliquis fuscis; clavatæ, thoracis ferè longitudine, structura ut in precedente.

TRUNCUS. *Thorax* quadrato-subtransversus lateribus rotundatis sed ad angulos posticos subrectis; posticè rectus sine ullâ excavatione apud angulos, sed medio utrinque levitèr sinuatus. *Coleoptra* thorace duplò longiora et in medio paulò latiora,

latiora, apice quàm in precedente acutiora, sine ullis, vel apice obsoletissimis solummodo, striarum vestigiis.

Var. β. nigra, elytris rubellis, antennis basi tibiis tarsisque ferrugineis. Femora antica ad apicem incrassata. Tarsi antici et mediorum articulus primus dilatati. An varietas sexus ?

This species has precisely the same habit as the foregoing. It differs from it in colour, size, in having the thorax more distinctly narrowed behind, the elytra in proportion to the thorax broader, and somewhat more acute at the apex. The body, too, is shorter in proportion to its breadth, and its outline obovate rather than oval. The head, as in the preceding, is proportionally shorter than in *C. chrysomeloides*, and the antennæ thinner, with their last joint shorter and more distinctly mucronate.

I have seen but two specimens of this insect; one from the rich cabinet of my excellent friend the Rev. William Kirby, B.A. F.L.S., by whose name I have designated it; the other in my own. That in Mr. Kirby's cabinet has its antennæ wholly ferrugineous, but differs in no other respect, and this variation is probably accidental. I cannot positively satisfy myself whether or not the apex of the elytra has any vestige of striæ. When the pubescence is removed, there seemed, in some lights, to be one or two very obsolete lines.

10. CHOLEVA *Marshami.*

C. oblongo-ovalis, fusca, antennis, thoracis longitudine, pedibusque, flavo-ferrugineis; elytris apice obtusiusculis.

Long. Corp. 2¼ lin. Lat. 1 lin.

Habitat ——— *Mus.* D. Marsham, Nostr.

DESCR. CORPUS oblongo-ovale fuscum, pube griseo-flavescente vestitum, sub lente, pube derasâ, punctato-rugulosum.

CAPUT

CAPUT nigrum, sub lente punctatum. *Labrum Palpi*que flavo-ferruginea. *Antennæ* flavo-ferrugineæ, medio saturatiores, subclavatæ, thoracis longitudine, seu illo paulò longiores; articulis 4—6 obconico-cylindricis, reliquis sensim crassioribus turbinatis; 8vo contiguis dimidio minori, extimo ovato.

TRUNCUS. *Thorax* transverso-sub-quadratus longitudine vix latior, lateribus rotundatis (haud ad angulos posticos subrectis), posticè rectus sine ullâ excisione. *Coleoptra* thorace vix latiora, sed plus duplò longiora, interdum apud apicem obsoletissimè striata, apice obtusiuscula. *Pedes* flavo-ferruginei femoribus anticis in utroque sexu similibus, apice vix attenuatis.

Var. β. Picea tota, antennis pedibusque ferrugineis.

Of this insect I have seen but two specimens, which chanced to be the sexes—the female in the cabinet of my kind friend Thomas Marsham, Esq. V.P.L.S., after whom I have named the species; the male in my own. The fore thighs of the latter are not incrassated at the apex, as in the males of the preceding species, and it is a shade or two lighter in colour than the female. This difference and the usual sexual distinctions in the tarsi excepted, the sexes are precisely similar.

11. CHOLEVA *Dissimulator.*

C. ovalis, nigra, antennis thoracis longitudine basi apiceque, tibiis, tarsisque, rufo-ferrugineis.

Long. Corp. 2 lin. Lat. 1 lin.

Habitat ——— *Mus.* D. Watson ♂. Leach ♂. ♀.

DESCR. CORPUS oblongo-ovale, nigrum, pube densâ fulvescente-griseâ vestitum, supra, sub lente, pube derasâ, rugulosum.

CAPUT sub lente punctatum. *Palpi* rufo-ferruginei. *Antennæ* structura ut in precedente, thoracis longitudine, fuscæ, articulis duobus primis extimoque ferrugineis. *Thorax* subquadrato-transversus longitudine paulò latior, lateribus ab apice ad basin ut in precedente rotundatis; posticè rectus sine ullâ excavatione. *Coleoptra* thorace paulò latiora et duplò longiora, striis nullis. *Pedes* antici (coxis nigris exceptis) rufo-ferruginei; posteriores nigri: tibiis tarsisque rufo-ferrugineis.

Var.

Var. β. nigro-fusca, coxis anticis rufo-ferrugineis. L. C. $1\frac{3}{4}$ lin. Mus. D. Leach.

This in its general habit, and in the form of its thorax, which is rounded at the sides from the apex to the base, and straightly truncate behind, agrees with the preceding. It differs from it in colour, and in having its thorax more transverse, and appears a distinct species. The present section, if more species belonging to it should be discovered, will admit of a further very natural separation into two other smaller divisions; one including *C. chrysomeloides*, *Leachii*, *Kirbii*, and those akin to them which have the sides of the thorax parallel or sub-recurved just at the base; and the other comprising those which, like the present species, and *C. Marshami*, have the sides rounded from the base to the apex.

This insect affords a striking example of the necessity of attending in these obscure genera to minute characters, such as those upon which the families are here separated. In colour and general appearance it so exactly resembles *C. tristis*, that an entomologist not versed in the genus would decidedly pronounce them the same; which, in fact, at first I considered them. Upon a more careful examination, however, and on separating the thorax from the coleoptra, which is often the only way to get a clear idea of its basal outline, the difference between the two species was abundantly manifest; this being without the slightest trace of the lateral excisions which in that are so obvious. Other distinctions too exist. The fore part of the head is longer; the antennæ are longer and slightly thicker at the apex; and the body, when closely compared, narrower.

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12. CHOLEVA *villosa.*

C. quadrato-oblonga, supra striis levissimis transversè acuducta; elytris apice subtruncatis.

Latr. Gen. Crust. et Ins. ii. 29. 5.

Choleve soyeuse. *Latr. Hist. Nat. des Crust. et Ins.* ix. 251.

Catops truncatus. *Gyll. Ins. Suec.* i. 279. 3.

Ptomaphagus truncatus. *Illig. Magazin für Insektenkunde* i. 42. 4.

Mordella silphoides. *Marsh. Ent. Brit.* i. 493. 19.

Mycetophagus picipes. *Kugellan Schneid. Mag.* 558. 9.

Helops dermestoides. *Panz. Faun. Germ.* 57. 2?

Helops sericeus. *Panz. Faun. Germ.* 73. 10?

Dermestes. *Linn. Faun. Suec. Edit.* 1746. *no.* 371. *Edit.* 1761. *no.* 2268?

Le Bouclier brun velouté. *Geoff. Hist. des Ins.* i. 123?

Peltis villosa. *Fourcroy Hist. Ins. Par.* 1. 32?

Long. Corp. $\frac{3}{4}$—$1\frac{1}{2}$ lin. Lat. $\frac{1}{2}$—$\frac{3}{4}$ lin.

Habitat ——— *Mus.* D. Marsham, Kirby, Nostr.

DESCR. CORPUS nigrum, sub lente, pube derasâ, subtilissimè transversè acuductum; subquadrato-oblongum, anticè paulò latius, pube densâ grisescente vestitum.

CAPUT sublæve. *Labrum Palpique* ferruginea, interdum nigra. *Mandibulæ* latere interiori sub apice exciso vel unidentato. *Antennæ* clavatæ, basi ferrugineæ apice nigro-fuscæ, thorace tertiâ parte breviores; articulis 1—3 subcylindricis, 4—6 brevioribus turbinatis, 7—10 pateræformibus, transversis, 8vo contiguis triplò breviore et paulò angustiore, extimo ovato acuto.

TRUNCUS. *Thorax* subquadratus, longitudine paulò latior, convexus, lateribus anticè subcompressis posticè subrectis, margine basali recto, ad angulos utrinque excisione levi. *Coleoptra* nigra, sive picea, interdum testacea, reliquo corporis magis distinctè et obliquè acuducta, thorace paulò angustiora, et ferè triplò longiora, lateribus subrectis, a basi ad apicem sensim paulò angustata, apice obliquè truncata, angulis exterioribus rotundatis; striis (suturali marginalique exceptis) nullis.

Pedes

Pedes nigri, tibiis tarsisque plerumque nigro-fuscis sive piceis: *antici:* coxis magnis femorum longitudine; femoribus margine interiori apice constricto; tibiis femorum ferè longitudine, validis, clavatis, apice valdè incrassatis;—*posteriores:* femoribus oblongo-ovalibus, margine exteriori rotundato, interiori subrecto; tarsis mediis in utroque sexu similibus.

Var. β. Elytris rubellis.

Var. γ. Elytris pedibusque pallidè testaceis.

Exclusive of the sectional distinctions which separate this from the preceding species, it may at once be known from them, as well, indeed, as from all here described, by its oblong-square nearly parallel-sided body, transversely acuducted surface, and subtruncate elytra. Of these the greatest peculiarity, which, however, is not visible but through a powerful lens when the pubescence is removed, is the fine, thickly-set, needle-drawn striæ, considerably analogous to those which are found on *Dyticus striatus* Ent. Brit. which cover more or less the whole surface.

Another peculiarity which distinguishes this and some of the following species from those of the preceding sections, is the relative shortness of the fore thighs, which in the former are barely longer than the coxæ; whereas, in the latter, they are twice as long, or at least half as long again.

In size no other species is so variable as this; the largest specimens being nearly a line longer than the smallest, with individuals intermediate. The pubescence varies in regard to its tint of colour and thickness. In some specimens the first two joints only of the antennæ are ferrugineous; in others the first four or five. In some the feet are wholly piceous or testaceous; in others the tibiæ and tarsi, or tarsi only. The elytra vary from black to piceous, dull red, and pale testaceous. No specific distinction can be drawn from any of these variations. In the unchangeable attributes of form and sculpture all

the individuals agree, and constitute therefore in reality but one species.

No species of the genus has been so frequently described as this. Of the correctness of the synonyms quoted from Illiger, Marsham, Kugellan, and Latreille, there is no question. The remainder are less certain. With Illiger, I have doubtfully referred to Panzer's *Helops dermestoides* and *sericeus*. The general habit, clavate antennæ, and truncate elytra of the former suit very well; but the elytra are figured broader than the thorax, and punctate; both which characters are at variance with our species. *H. sericeus* in the colour of its elytra and the outline of the body would tolerably suit var. γ: but the antennæ are too thin at the apex, and the elytra are punctate, and at the apex too much rounded. If these two be correctly figured, they are species not here described, though belonging to this section.

I am indebted to Mr. Kirby for pointing out the probability that *Dermestes no.* 371 of the first edition of *Fauna Suecica* is synonymous with this species. Major Gyllenhal has, with I think less plausibility, referred it to *C. tristis*. In the Linnean cabinet there is not, as Mr. Kirby informs me, any specimen of *Choleva* extant.

13. CHOLEVA *velox*.

C. ovalis fusco-cinnamomea, capite nigro, antennis subclavatis, thoracis longitudine, pedibusque dilutioribus.

Catops agilis. *Panz. Faun. Germ.* 95. 10 ?

Long. Corp. $1\frac{1}{3}$ lin. Lat. $\frac{2}{3}$ lin.

Habitat ——— *Mus.* D. Kirby, Wilkin, Nostr.

DESCR. CORPUS ovale, lateribus quàm in precedente rotundioribus, supra cinnamomeum sive fusco-ferrugineum, subtus saturatius, pube flavo-grisescente, sub lente forti, pube derasâ, obsoletissimè transversè acuducto-rugulosum.

CAPUT

CAPUT nigrum sublæve. *Labrum Palpi*que ferruginea. *Antennæ* ferrugineæ, thoracis longitudine, sub-clavatæ, apice multò minùs incrassatæ quàm in precedente; articulis subcylindricis, subæqualibus, sensim crassioribus, 8vo contiguis vix dimidio breviore, extimo subovato.

TRUNCUS. *Thorax* disco interdum nigricante; transverso-subquadratus, quàm in precedente convexior, longitudine dimidio latior; margine postico subrecto, apud angulos inconspicuè et latè exciso. *Coleoptra* thorace duplò longiora, et in medio paulò latiora, apice rotundata. *Pedes* ferruginei: *antici:* femoribus coxis paulò longioribus lanceolato-ovatis, apice in utroque sexu attenuatis; —— *posteriores:* femoribus sub-linearibus; tarsis mediis in utroque sexu filiformibus.

Var. β. rufo-ferruginea tota.

While this species agrees with the foregoing in having the same formed thorax, and something of the same acuducted transverse striæ, it differs from it in colour, in having a more rounded body and elytra round at the apex; and from it, as well as the following species, in the structure of its antennæ, which are longer, much thinner at the apex, barely clavate, the five last joints scarcely turbinate, and the eighth but slightly differing either in length or breadth from the rest of the club. The transverse aciculations are much more crowded, fainter, and less distinct than in *C. villosa*, partaking in some degree of the slightly elevated rugæ common to the species of the first and second sections.

14. CHOLEVA *fumata.*

C. oblongo-ovalis, nigra, antennis thoracis longitudine, basi, elytris pedibusque obscurè rufo-ferrugineis.

Catops agilis. *Gyll. Ins. Suec.* i. 279. 3.

Cistela fusca. *Oliv. Ent.* iii. 54. 10. 13. *Fab.* 1. *fig.* 14. *a. b*?

Long. Corp. $1\frac{1}{2}$ lin. Lat. $\frac{7}{8}$ lin.

Habitat —— *Mus.* D. Watson, Wilkin.

DESCR. CORPUS exactè oblongo-ovale, nigrum, pube densâ fusco-griseâ vestitum, sub lente, pube derasâ, rugulosum.

CAPUT sublæve. *Palpi* rufo-ferruginei. *Antennæ* fuscæ, articulis duobus vel tribus primis rufo-ferrugineis; magis quàm in precedente clavatæ, thoracis ferè longitudine; articulis quinque ultimis subturbinatis, 8vo contiguis dimidio breviore.

TRUNCUS. *Thorax* transversè subquadratus, longitudine paulò latior, margine postico subrecto, apud angulos inconspicuè et latè exciso. *Coleoptra* obscurè fusco-rufescentia, thorace duplò et dimidio longiora et ejus latitudine, apice rotundata. *Pedes* rufo-ferruginei.

For regarding this species, which is very distinct from the preceding, as *Catops agilis* of Gyllenhal, I have the authority both of his excellent description, and of a Swedish specimen sent me by my kind correspondent Mr. Schönherr, of Stockholm, author of the valuable *Synonyma Insectorum.*

15. CHOLEVA *Watsoni.*

C. oblongo-ovalis, nigra, antennis crassis thorace brevioribus, basi, elytris, pedibusque rufo-brunneis; thorace brevissimo.

Long. Corp. $1\frac{1}{3}$ lin. Lat. $\frac{6}{8}$ lin.

Habitat ——— *Mus.* D. Watson.

DESCR. CORPUS nigrum, oblongo-ovale, pube subdensâ griseo-fulvescente; sub lente, pube derasâ, punctato-rugulosum.

CAPUT sub lente sub-punctatum. *Labrum* fusco-ferrugineum. *Palpi* ferruginei. *Antennæ* fuscæ, articulis tribus primis rufo-brunneis, extimo pallido; crassiores quàm in duobus precedentibus, thorace ferè tertiâ parte breviores, structura ferè ut in *C. truncatâ.*

TRUNCUS. *Thorax* niger, angulis posticis obscurè rubentibus, quadrato-transversus, longitudine duplò latior, margine postico subrecto, apud angulos vix exciso. *Coleoptra* rufo-brunnea, thorace triplò longiora et paulò latiora, apice subacuta. *Pedes* rufo-brunnei, anticis (coxis exceptis) dilutioribus.

In colour this does not much differ from the preceding, but is furnished with other characters strikingly distinctive. The antennæ are shorter and thicker, almost precisely the shape and structure of those of *C. villosa*; with which, indeed, were it not for its round apexed elytra and rugulose surface, it might be confounded. The thorax is very short, being at least twice as broad

broad as long; in fact, it is proportionably shorter than in any species of the genus. And the coleoptra, which are three times longer than the thorax, are more acute at the apex than in *C. fumata.*

Having seen but one specimen of this insect, which stands in the cabinet of my friend and neighbour P. W. Watson, Esq., an acute entomologist, with whose name I have designated it, I am unable to speak as to the constancy of the colour of the elytra; but as they are not of the pale shade of immature specimens, but of a dark red ochre tinge, there is no reason to suppose that they vary materially.

16. CHOLEVA *anisotomoides.*

C. ovalis, convexa, nitida, subpilosa, fusco-picea, antennis pedibusque pallidè ferrugineis; thorace posticè recto.

Long. Corp. $\frac{2}{3}$ lin. Lat. $\frac{1}{2}$ lin.

Habitat sub foliis putridis. *Mus.* D. Kirby, Wilkin, Nostr.

DESCR. CORPUS nitidum, ovale, fusco-piceum, precedentibus convexius, habitu *Phalacri* vel *Anisotomæ*, pilis raris brevibus grisescentibus vestitum.

CAPUT nigro-piceum, sublæve. *Labrum Palpi*que ferruginea. *Antennæ* dilutè flavescentes thoracis longitudine, sub-capitato-clavatæ, articulis duobus baseos subæqualibus reliquis paulò longioribus; 3tio illis breviore sed sequente paulò longiore; 4—6 subovali-cylindricis; reliquis turbinatis magnitudine sensim paulò crescentibus; 8vo contiguis ferè dimidio minore; ultimo magno, subgloboso submucronato.

TRUNCUS. *Thorax* margine postico plerumque dilutiori, sublævis, sub-quadrato-transversus, anticè angustior, longitudine ferè duplò latior, margine postico recto, sine excisione ullâ. *Coleoptra* ovata, convexa, sub lente vagè rugulosa, thorace duplò longiora et paulò latiora. *Pedes* pallidè ferruginei: antici femoribus in utroque sexu apice attenuatis, coxis vix longioribus.

Var. β. pallidè testacea tota.

The most distinguishing characteristics of this species are the straightly truncate hinder margin of the thorax, and the more than ordinary convexity of the body, which is such as to give it in some degree

degree the habit of an *Anisotoma* or *Phalacrus* (*Dermestes fimetarius, politus, &c.* Ent. Brit.). The antennæ have nearly the structure of those of *C. velox*, but they approach almost to capitato-clavate; the first two joints seem more distinctly longer than the third; and the eighth is rather more obviously less than the seventh and ninth than in that. The pubescence approaches more to the character of pili than in the other species.

17. CHOLEVA *Wilkinii.*

C. oblonga, fusco-picea, antennis pedibusque flavo-ferrugineis; thorace posticè recto.

Long. Corp. $1\frac{1}{4}$ lin. Lat. $\frac{1}{2}$ lin.

Habitat ——— *Mus.* D. Wilkin.

DESCR. CORPUS oblongum, vel sublineare, fusco-piceum, pube brevissimâ grisescente vestitum.

CAPUT sublæve. *Palpi* flavo-ferruginei. *Antennæ* flavo-ferrugineæ thoracis longitudine, structura ut in precedente.

TRUNCUS. *Thorax* sublævis ferè ut in precedente conformatus, margine postico recto. *Coleoptra* oblonga lateribus subrectis, sub lente rugulosa, thorace paulò angustiora et ferè triplo longiora, apice rotundata. *Pedes* flavo-ferruginei: antici femoribus in utroque sexu apice attenuatis.

In colour this very distinct species, which I have seen only in the cabinet of my friend S. Wilkin, Esq. F.L.S., whose name it bears, has at first sight considerable resemblance to *C. velox*; but is at once distinguished from that by its proportionally much longer and narrower body, which also well distinguishes it from the preceding, with which it agrees in the structure of its antennæ and thorax.

18. CHOLEVA *brunnea.*

C. oblongo-obovata, nigro-brunnea, antennis articulo 8vo contiguis æquali, extimo obtuso.

Mylæchus brunneus. *Latr. Gen. Crust. et Ins.* ii. 30. 1. *tab.* 8. *fig.* 11.

Catops

Catops brevicornis. *Payk. Faun. Suec.* i. 140. 4. *Gyll. Ins. Suec.* i. 280. 4.

Hallominus testaceus. *Panz. Faun. Germ.* 57. 23?

Long. Corp. 1 lin. Lat. $\frac{1}{2}$ lin.

Habitat ——— *Mus.* D. Watson, Nostr.

DESCR. CORPUS nigro-brunneum, oblongo-obovatum, pilis flavescenti-griseis vestitum, subtilitèr vagèque rugulosum.

CAPUT nigrum, collo haud constrictum. *Labrum Palpi*que structura ut in precedentibus, ferruginea. *Antennæ* fusco-ferrugineæ basi apiceque dilutiores, subincurvæ, thorace dimidio breviores, apice valdè incrassatæ; articulis duobus baseos sequenti paulò crassioribus et longioribus, ovali-cylindricis; tertio subobconico; 4—7 precedenti brevioribus, obconicis, sensim crassioribus; 8—10 transversis, æqualibus, precedentibus duplò crassioribus; extimo contiguis paulò longiori et angustiori obtuso.

TRUNCUS. *Thorax* brunneo-niger, convexus, trapeziformis, anticè subcompressus, posticè dilatatus et ferè duplò latior, longitudine ferè latitudinis, lateribus ab apice ad basin rotundatis, margine postico truncato recto, sine excisione ullâ. *Scutellum* triangulare, nigrum. *Coleoptra* castaneo-brunnea, thorace duplò longiora et paulò angustiora a basi sensim ad apicem angustata, apice rotundata, striis (suturali marginalique exceptis) nullis. *Pedes* piceo-brunnei; *antici* coxis globoso-pyramidalibus, femoribus latioribus et paulò brevioribus; femoribus subdimidiato-ovatis, apice lateri interiori in mare constricto; tarsis in mare articulis tribus primis dilatatis; *postici* femoribus in mare subtus in medio dente parvo acuto triangulari armatis.

It is obvious, from the description of this species, that it recedes materially not only from the characters of the foregoing, but even of the genus; its antennæ being sub-incurved, the two first joints manifestly thicker than the three next, the eighth not in the slightest degree less than the other joints of the club, and the last obtuse at the apex. These differences, certainly, are so considerable, as in the system to warrant Latreille's institution of a new genus to include this insect and its congeners. In a monograph like the present, I have not thought it necessary to follow his example, because I know but this single species furnished with the