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FAUNA BOREALI-AMERICANA.

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T H E I N S E C T S .

BY

THE REV. WILLIAM KIRBY,

M.A. F.R.S. F.L.S. F.G.S. ETC.

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FAUNA  
BOREALI-AMERICANA;

OR THE  
ZOOLOGY

OF THE  
NORTHERN PARTS  
OF  
BRITISH AMERICA:

CONTAINING  
DESCRIPTIONS OF THE OBJECTS OF NATURAL HISTORY COLLECTED ON THE LATE NORTHERN LAND  
EXPEDITIONS, UNDER COMMAND OF CAPTAIN SIR JOHN FRANKLIN, R.N.

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In the vertebrated animals almost every genus has an English as well as a Latin name: but this is not the case with insects, of which, comparatively speaking, very few are so distinguished. To invent appropriate English names for nearly 200 genera, would be no easy task; and as they are generally known by their scientific appellations, the author thought it would be better to use the Latin name, without translating it. For the convenience of those readers who wish to know by what English name any old genus or species has been usually distinguished, the author has added such name to it in the above Table.

## ARCTIC INSECTS.

To make the above List of the Insects of the Northern Provinces of America, chiefly under the dominion of Great Britain, as complete as possible, I shall add an enumeration of those described by Otho Fabricius in his *Fauna Groenlandica*, and those taken in the several Expeditions to the Arctic Regions of America, conducted by Captains Parry, Sir John Ross, and Back, described in the Appendix to their several Narratives by Mr. Curtis, Mr. Children, and myself, distinguished by the letters F. C. Ch. and K. affixed to each species.

- |                                      |   |                      |   |
|--------------------------------------|---|----------------------|---|
| Order THYSANURA. Lat.                |   | 36                   | <i>Cistela stoica F.</i>                |
| 1                                    | <i>Podura plumbea F.</i>                      | 37                   | <i>Bostrichus typographus Ch.</i>       |
| 2                                    | „ <i>aquatica F.</i>                          | 38                   | <i>Curculio nodosus F.</i>              |
| 3                                    | „ <i>ambulans F.</i>                          | 39                   | „ <i>arcticus F.</i>                    |
| 4                                    | „ <i>pusilla F.</i>                           | 40                   | <i>Altica Helxines F.</i>               |
| 5                                    | „ <i>maritima F.</i>                          | 41                   | „ <i>oleracea F.</i>                    |
| 6                                    | „ <i>humicola F.</i>                          | 42                   | <i>Coccinella trifasciata. F.</i>       |
| Order PARASITA. Lat.                 |   | Order DERMAPTERA. K. |   |
| * <i>Pediculus. Lat.</i>             |   | 43                   | <i>Forficula C.</i>                     |
| 7                                    | <i>Pediculus humanus F.</i>                   | Order ORTHOPTERA.    |   |
| 8                                    | „ <i>Canis F.</i>                             | 44                   | <i>Acrydium sulphureum Ch.</i>          |
| 9                                    | „ <i>Lagopi F.</i>                            | Order NEUROPTERA.    |   |
| ** <i>Ricinus De G. Nirmus Herm.</i> |   | 45                   | <i>Libellula Virgo F.</i>               |
| 10                                   | <i>Pediculus Strigis F.</i>                   | Order TRICHOPTERA.   |   |
| 11                                   | „ <i>Corvi F.</i>                             | 46                   | <i>Phryganea rhombica F.</i>            |
| 12                                   | „ <i>Clangulæ F.</i>                          | 47                   | <i>Tinodes hirtipes C.</i>              |
| 13                                   | „ <i>Grylle F.</i>                            | Order HYMENOPTERA.   |   |
| 14                                   | „ <i>Bassani F.</i>                           | 48                   | <i>Ichneumon Moderator F. (Pimpla?)</i> |
| 15                                   | „ <i>Lari F.</i>                              | 49                   | „ <i>Lariæ C.</i>                       |
| 16                                   | „ <i>Tringæ F.</i>                            | 50                   | <i>Ephialtes C.</i>                     |
| 17                                   | „ <i>Hiaticulæ F.</i>                         | 51                   | <i>Campoplex arcticus C.</i>            |
| 18                                   | <i>Philopterus (Docophorus) communis Ch.</i>  | 52                   | <i>Microgaster unicolor C.</i>          |
| 19                                   | „ „ <i>platyrhynchus Ch.</i>                  | 53                   | <i>Myrmica rubra C.</i>                 |
| 20                                   | „ „ <i>auritus Ch.</i>                        | 54                   | <i>Apis alpina F. (Bombus)</i>          |
| 21                                   | „ „ <i>ocellatus Ch.<sup>1</sup></i>          | 55                   | <i>Bombus Kirbiellus C.</i>             |
| 22                                   | „ <i>(Nirmus) affinis Ch.</i>                 | Order HEMIPTERA.     |   |
| 23                                   | „ „ <i>testudinarius Ch.</i>                  | 56                   | <i>Acanthia stellata C.</i>             |
| 24                                   | „ „ <i>biseriatus Ch.</i>                     | 57                   | <i>Pedeticus variegatus C.</i>          |
| 25                                   | „ <i>(Lipeurus) jejunos Ch.</i>               | Order LEPIDOPTERA.   |   |
| 26                                   | „ <i>(Goniodes) Chelicornis Ch.</i>           | <i>Diurna.</i>       |   |
| 27                                   | <i>Liotheum (Colpocephalum) subæquale Ch.</i> | 58                   | <i>Papilio Tullia F.</i>                |
| 28                                   | „ <i>(Physostomum) sulphureum Ch.</i>         | 59                   | <i>Colias Boothii C.</i>                |
| 29                                   | „ „ <i>marginatum Ch.</i>                     | 60                   | <i>Hipparchia Rossii C.</i>             |
| Order COLEOPTERA. L.                 |   | 61                   | <i>Melitæa Tarquinius C.</i>            |
| 30                                   | <i>Colymbetes mæstus C.</i>                   | 62                   | <i>Polyommatus Franklinii C.</i>        |
| 31                                   | <i>Dytiscus marginalis F.</i>                 | <i>Nocturna.</i>     |   |
| 32                                   | <i>Staphylinus balteatus F.</i>               | 63                   | <i>Laria Rossii C.</i>                  |
| 33                                   | „ <i>fuscipes F.</i>                          | 64                   | <i>Euprepia Hyperborea C.</i>           |
| 34                                   | „ <i>lignorum F.</i>                          |                      |   |
| 35                                   | <i>Silpha pedicularia F.</i>                  |                      |   |

<sup>1</sup> *Pediculus Corvi F.*

- |    |  |     |   |
|----|--|-----|---|
| 65 | Phalæna B. Graminis ( <i>Episema. Charæas</i> ) F. | 84  | Tipula regelationis F. ( <i>Trichocera</i> Meig.) |
| 66 | „ N. Lucerneæ ( <i>Agrotis</i> ) F.                | 85  | „ monoptera F. ( <i>Doubtful</i> )                |
| 67 | „ Brassicæ ( <i>Mamestra</i> ) F.                  | 86  | „ pennicornis F. ( <i>Cecidomyia</i> Lat.)        |
| 68 | „ Myrtilli ( <i>Anarta</i> ) F.                    | 87  | „ atra F. ( <i>Doubtful</i> )                     |
| 69 | „ depuncta ( <i>Orthosia</i> ) F.                  | 88  | „ arctica C.                                      |
| 70 | Hadena Richardsoni C.                              | 89  | Musca stercoraria F. } <i>Scatophaga</i>          |
| 71 | Psychophora Sabini K. C.                           | 90  | „ scybalaria F. }                                 |
| 72 | Oporaria punctipes C.                              | 91  | „ cloacaris F. ditto?                             |
| 73 | Phalæna G. tristata F.                             | 92  | „ roralis F. ( <i>Doubtful</i> )                  |
| 74 | „ hastata F.                                       | 93  | „ vivax F. ( <i>Doubtful</i> )                    |
| 75 | „ Tort. uncana ( <i>Erastria</i> ) F.              | 94  | Helophilus bilineatus C                           |
| 76 | Orthotænia Bentleyana C.                           | 95  | Tachina hirta C.                                  |
| 77 | Argyrotosa Parryana C.                             | 96  | Anthomyia dubia C.                                |
|    | Order DIPTERA.                                     | 97  | Scatophaga apicalis C.                            |
| 78 | Culex caspius C. ( <i>C. pipiens</i> L.)           | 98  | Volucella mortuorum F. ( <i>Sarcophaga</i> Meig.) |
| 79 | „ reptans F. ( <i>Simulium</i> Lat.)               | 99  | „ vomitoria F. ( <i>Musca</i> L.)                 |
| 80 | „ pulicans F. ( <i>C. pulicaris</i> L.)            | 100 | „ Cæsar F. ( <i>Musca</i> L.)                     |
| 81 | Chironomus polaris K. C.                           | 101 | „ Lappona F. ( <i>Sericomyia</i> Lat.)            |
| 82 | Ctenophora Parrii K.                               | 102 | Tabanus Groenlandicus F.                          |
| 83 | Tipula rivosa F. ( <i>Pedicia</i> Lat.)            | 103 | Empis borealis F.                                 |



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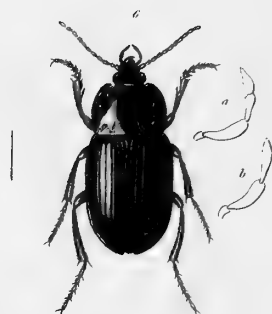
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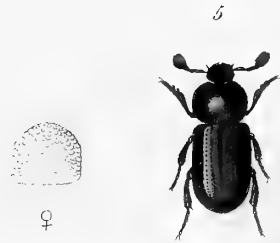
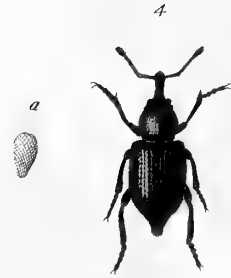


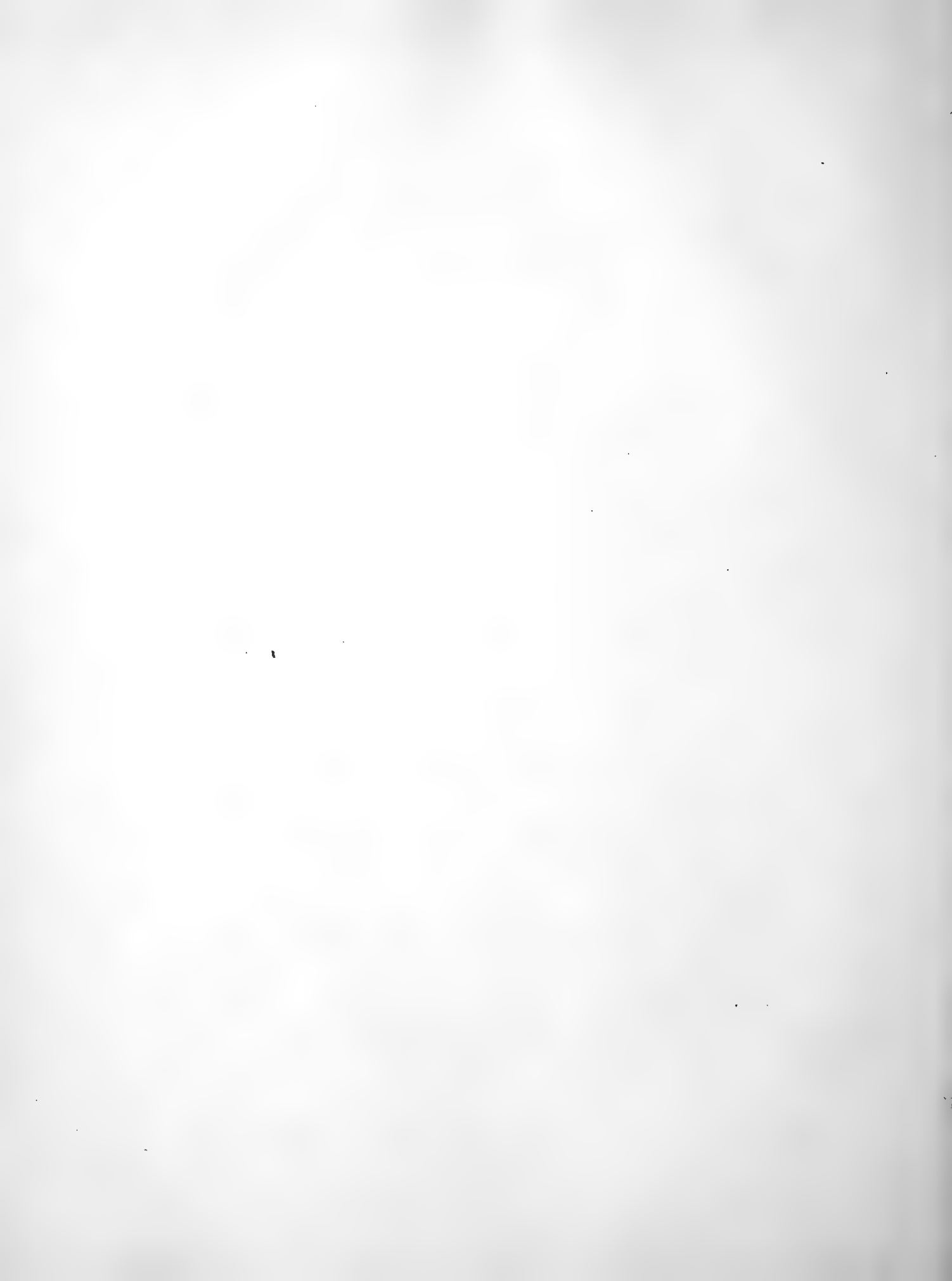














EXPLANATION OF SOME TERMS, USED IN THE FOLLOWING WORK,  
NOT IN GENERAL USE.

---

TERMS RELATING TO THE HEAD.

- MOLA. *Molary plate or space.* (See p. 82, 129, &c.) A broad flat space on the inner side of the base of some mandibles, having no molary teeth at their apex, of Coleopterous insects (many *Lamellicorns* and *Hydrophilus*) usually transversely grooved, but sometimes smooth, and used in mastication.
- PROMUSCIS. The *Haustellum*, or instrument of suction, of the *Hemiptera* and *Homoptera*.
- LINGUA. The *Tongue.* (p. 49, 78, &c.) Often connate with the *Labium* and called by that name. It is, however, sometimes a separate organ. (See *Introd. to Ent.* iii. 357, E.)
- SCAPUS. *Scape.* (p. 31, &c.) The first, and often most conspicuous joint of the *Antennæ*, terminating below in the bulb, which inosculates in the head and acts the part of a rotula.
- PEDICELLUS. The *Pedicel.* (p. 109, &c.) The second joint of the *Antennæ*, inosculating in the *Scapus*.
- NASUS. The *Nose.* (p. 67, 276) The terminal piece of the face with which the *Labrum*, or upper lip, articulates, often called the *Clypeus*.
- POSTNASUS. The *Afternose.* (p. 128) The part of the face, lying behind the *Nasus*, immediately contiguous to the *Antennæ*, when distinctly marked out as in *Camptorhina.* (p. 43, 94.)
- RHINARIUM. The *Nostril-piece.* (p. 43, 94) The space between the anterior margin of the *Nasus* and the *Labrum*, which in most of the *Lamellicorn* beetles is vertical; in *Necrophorus* it consists of membrane.

TERMS RELATING TO THE TRUNK.

- TRUNCUS ISTHMIATUS. *Isthmate-trunk.* (p. 188) When an isthmus is formed between the *Trunk* and the *Elytra*, as in *Passalus*.
- MANTRUNCUS. The *Manitrunk.* (p. 69) The anterior portion of the *Trunk* to which the arms or fore legs are attached.
- PROTHORAX. The *Fore-thorax.* (p. 8, 35, &c.) The *upper* side or *Shield* of the *Manitrunk*.
- ORA. The *Ora.* (p. 106, 142) The inflexed or *inferior* lateral margin of the *Fore-thorax*, in many genera separated from the *Fore-breast* by a suture.
- ANTEPECTUS. The *Fore-breast.* (p. 17, 126) The *under* side of the *Manitrunk*.
- PROSTERNUM. The *Fore-breastbone.* (p. 74, 87) An elevation of the *Fore-breast* between the *Arms*.
- BRACHIA. The *Arms.* (p. 72) Or first pair of legs.
- CLAVICULA. (p. 39) Or first joint of the *arms* answering to the *Coxæ* of the two last pair of legs.
- SCAPULA. The *Shoulderblade*, or *second* joint of the arms, answering to the *Trochanter* in the other legs.
- HUMERUS. The *Shoulder.* (p. 87, 132) The *third* joint of the *arms*, answering to the *thigh*.
- CUBITUS. The *Cubit* or *Fore-arm.* (p. 7, 74) The *fourth* joint of the *arms* answering to the *Tibia* or shank.
- MANUS. The *Hand.* (p. 2, 47) The *fifth* portion of the arms, usually consisting of more than a single joint, and answering to the *Tarsus* or foot.
- ALITRUNCUS. The *Alitrunk.* (p. 60) The *posterior* portion of the *Trunk*, which bears the organs of flight and the legs.  
This part is resolvable into two segments.
- MEDITRUNCUS. The *Mid-trunk*, to which the *upper* organs of flight and the *mid-legs* are attached.
- MESOTHORAX. The *Mid-thorax.* The *upper* side of the mid-trunk, bearing the *upper* organs of flight.
- ELYTRA. *Wing-cases.* Horny or leathery organs peculiar to *Coleoptera*.

- HYPODERMA. (p. 16) The membranous lining of the *Elytra*.
- EPIPLEURA. *Side-cover*. (p. 21, 27) The inflexed margin of many *Elytra*, covering the sides of the Alitrunk and Abdomen.
- TEGMINA. (p. 250) Organs of a less firm consistence peculiar to *Orthoptera*.
- HEMELYTRA. (p. 275) Organs peculiar to the *Hemiptera*, consisting of two portions, a hard or leathery base called the *Corium*, and a terminal *Membrane*. (p. 275.)
- ALÆ. *Wings*. Membranous organs of flight common to the remaining Orders.
- TEGULÆ. *Base-covers*. (p. 256, 264) Concavo-convex pieces that defend the *base* of the *wings* in *Hymenoptera*.
- MEDIPECTUS. *Mid-breast*. (p. 135, 165) The under side of the *Mid-trunk*, bearing the *intermediate* pair of legs.
- PERISTETHIUM. The anterior part of the *Mid-breast*.
- SCAPULARIA. The *Scapulars*. (p. 75) The lateral pieces outside the *mid-legs*.
- MESOSTERNUM. *Mid-breastbone*. The *middle* piece, between the above legs.
- POTRUNCUS. *After-trunk*. The last segment of the *Trunk*, bearing the *under* wings and *posterior* pair of legs.
- METATHORAX. The *After-thorax*. (p. 259) The *upper* side of the *After-trunk*, which bears the above wings, and terminates posteriorly in the *Postscutellum*. (p. 266.)
- POSTPECTUS. The *After-breast*. (94, 165, &c.) The *under* side of the *Potrunk*.
- MESOSTETHIUM. (p. 75) *Anterior* part of the above, situate between the *intermediate* and *posterior* legs.
- PARAPLEURÆ. (p. 77) Two pieces, one on each side the *postpectus*, outside the *posterior* legs.
- METASTERNUM. The *After-breastbone*. A central and often elevated part between these legs.

## TERMS RELATING TO THE ABDOMEN.

- HYPOPIGIUM. (p. 130, 155) The last *ventral* segment of the *Abdomen*, with the *Podex*, or last *dorsal* segment, forming the *Anus*.
- OVIPOSITOR. *Egg-placer*. (p. 257) The instrument with which the *Orthoptera*, and many *Hymenoptera*, convey their eggs to their proper station.
- CAUDULÆ. (p. 253) Two or more jointed, flexile, anal organs.

## INTRODUCTION.

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THE state of society in which the works of Creation are duly investigated, is not its state of infancy or boyhood, but that of its maturity and confirmed manhood; for, in its earlier and ruder stages, the sciences in general are looked upon with indifference, and not seldom with contempt; but, in proportion as civilization advances, they acquire daily more and more importance. The last, probably, that is raised to its proper rank in the public estimation, is the study which is distinguished by the name of Natural History: hence it happens that the patronage and fostering care of princes and statesmen have been usually extended later to this branch of science than to any other; and a just sense of the value of it, in public men, seems an indication of a very advanced state of society, and a proof that the public mind is wholly liberated from all the trammels of prejudice. When the inspired wisdom of the most powerful and magnificent of the Hebrew monarchs was directed to this object, and he composed treatises, for the instruction of his people, both upon plants and animals, then the Israelitish nation had attained the *acmé* of its civilization and glory; and that celebrated Græco-Macedonian prince and conqueror, whose highest privilege it was to have been the pupil of Aristotle, at the period when science in Greece had attained its zenith, is related to have given it in charge to his tutor to pay particular attention to the study of animals, and, in order to furnish him with materials, employed several thousand men, both in Europe and Asia,<sup>1</sup> in collecting them.

But it is seldom that sovereigns, or their ministers, have extended their fostering patronage to the science in question, till their attention has been excited by the

<sup>1</sup> Plin. *Hist. Nat.* l, viii, c, 16.

celebrity, studies, and labours of some eminent individual amongst their subjects ; and they have thus been induced to cast an eye of favour upon them ; their own thoughts and time are necessarily too much absorbed by politics, and the higher duties of their station, or office, to allow them much leisure to direct and employ them elsewhere, unless some such stimulus awakens their attention to the subject, its merits, and claims to notice.

It was by his ardent zeal in the cause he had embraced ; and the mighty power of his intellect ; and his indefatigable labours and studies ; and his profound knowledge of his subject for the time ; and the wide celebrity of his name, that the Aristotle of the North, the illustrious Linné, attracted to himself, and the science that he loved, the favourable regards, and the effectual aid of the higher powers ; in consequence of which, under their auspices, eminent naturalists were sent out to explore various and distant regions, for the purpose of discovering, studying in their native soil, and collecting, their natural productions. Thus it was that Kalm went out to North America ; Tornstroem and Osbeck to China ; Forskahl to Arabia ; Thunberg to Japan ; Sparrman to China and the Cape ; Hasselquist to the Levant, Palestine, and Egypt ; and others to various other regions of the globe.

In our own country, till within a few years, the collection of natural productions made no part of the official duty of those employed by government in exploring unknown, or little known, countries ; and if such collection was made in any expedition undertaken by authority, it was solely owing to the taste and inclination of some individual connected with it. It was thus that the late Rt. Hon. Sir Joseph Banks, led by the love of science alone, and his own native ardour in her cause, at first distinguished himself ; a circumstance that became the stepping-stone which originally placed him upon the eminence in the scientific world which from that time he held, and which caused him, in the event, to be looked up to by those in power, and enrolled him in the list of his Majesty's Most Honorable Privy Councillors. Accompanying Capt. Cook, the most illustrious of our circumnavigators, in his first voyage, with the aid of his zealous and learned friend the late

Dr. Solander, he made such collections, both in Zoology and Botany, as had never before rewarded the zeal and efforts of any single individual; and from regions which till then had remained unexplored, and of some of which the very existence was till then unknown, poured vast sums of her peculiar wealth into the general treasury of Natural Science.

Sir Joseph employed the influence he had acquired with the Government in promoting the interests of that science, and securing to it a portion of the same encouragement which had been bestowed upon other branches of art and literature; so that to examine and collect the natural productions of a country, began, at length, to be regarded as an important object, and to form part of the official duty contained in the instructions delivered to commanders of voyages and expeditions of discovery.

And, certainly, merely to ascertain the geographical position and limits of any country, considered as the sole object of such expeditions, although to the Geographer and Navigator confessedly of the first importance, yet considered *per se*, and independently of any knowledge of the inhabitants and productions of such country, it loses the largest portion of its interest. The advantages that may be derived from an intercourse with it, furnish one of the principal motives for exploring it, and these may be ranged under two heads, accessions to science, and accessions to commerce: the former as useful in the enlargement of the human mind, in the improvement of the human intellect, and in adding to our stores of knowledge; as the latter is in the enlargement of our property, and in adding to our stores of individual and national wealth. And the studies, labours, and observations of the man of science often lead to knowledge highly useful in ascertaining how far the latter object may be promoted by intercourse with any given country. The Zoologist, the Botanist, and the Geologist, each in his peculiar department, may direct the attention of the man of commerce to those districts where such productions of the animal, vegetable, or mineral kingdoms abound, as may be made articles of profitable speculation.

Amongst the other objects of Natural History collected in Captain, now Sir John, Franklin's last Expedition to the Polar Seas, the *Insects* form a very principal and interesting feature, not only on account of the number of individual species, which is considerable, but also on account of several new forms which they present to the scientific Entomologist; some of them connecting tribes before placed far asunder,<sup>2</sup> and filling up many vacant places in a scientific arrangement of these minute but not unimportant animals; others exhibiting an Asiatic aspect;<sup>3</sup> and the majority representing, as it were, known European types; and though varying from them in characters of more or less importance, known European species; so that the American Entomologists, for want of comparing one with the other, appear often to have confounded them.

Dr. Richardson, who was associated with Sir John Franklin in his first, as well as in his second, Journey, and to whom was intrusted the Natural History Department of the Expedition, the duties of which office he fulfilled with the same indefatigable zeal and singular skill, that his excellent commander evinced in the general conduct of it, having, at the recommendation of my worthy and learned friend, the Regius Professor of Botany at Glasgow, Sir W. J. Hooker, placed in my hands the above collection for arrangement and description, I must here premise a few observations on the plan I intend to pursue for the accomplishment of those objects.

I must first observe that the majority of the insects in question were necessarily collected during the brief summers of the Arctic regions, when it was requisite to use all possible dispatch in proceeding northwards while the season permitted: it was to be expected, therefore, that they must be hastily put together in boxes, or bottles of spirits, as they were collected, but it is wonderful, considering their number, that so little damage was sustained from this mode of packing them, none having received such injury as to render it difficult to describe them, except some of the *Diptera*, and the *Libellulina*, of which there seem to have been many, and which were so mutilated, most having lost their abdomen, that they could not be ascertained or described.

<sup>2</sup> For instance *Opisthius Richardsoni*, Plate I, Fig. 9.

<sup>3</sup> *Carabus Vietinghovii*, Plate I, Fig. 8.

Having in my cabinet a number of insects, including some new and singular forms, which were chiefly collected in Canada by Dr. Bigsby, and in Nova Scotia by Dr. Mac Culloch, I thought it would add considerably to the interest of the present Fauna, if, as far as relates to the insects, it were made coextensive with the British Territories in North America; I have, therefore, with the consent of Dr. Richardson, included them in my catalogue, which may thus be regarded as the first attempt at an outline, meager indeed and imperfect, of British American Entomology.

I must also here observe, that several of the insects collected in the Expedition, were taken in the journey from New York to Cumberland-house, without its being noted on which side of the 49th parallel of Latitude, the southern limit of the Zoology of the *British American Fur Countries*, as fixed in Dr. Richardson's Introduction,<sup>4</sup> they were taken; so that it was not in my power to distinguish the species taken in the *British* from those taken in the *American* territory. I thought it therefore best to include the whole.

So many different methods of arrangement have been traced out, or adopted, by different Entomologists, no two having altogether pursued the same path, that when I first set to work upon these insects, after I had ascertained the genus to which each species belonged, and which of them appeared to be non-descript, it was a source to me of no little thought, doubt, and perplexity to determine upon whose footsteps I should tread in the arrangement of them in a series, especially with regard to the *Coleoptera* Order, or *Beetles*. Two eminent Entomologists, my lamented friend M. Latreille, and Mr. W. S. Mac Leay, amongst others of less note, have taken great pains to form natural groups, but upon different principles, and both have rendered important services to the science; but both also, in some degree, by the adoption of an hypothesis, have tied their hands and impeded their own progress. M. Latreille by following Geoffroy's method, in which the number of the joints of the tarsi is assumed to indicate the primary sections of the Order

<sup>4</sup> Page xi.

before alluded to, though in general he has discriminated, limited, and located his groups with a felicity peculiar to himself, yet in consequence of his assumption of the above system as an invariable guide, has, in many instances, been induced to separate groups that are evidently nearly related, and to scatter them far and wide through his various sections. Mr. Mac Leay, likewise, by assuming the number *five* for the universal regulator of every group—whether primary, intermediate, or ultimate—of the whole animal kingdom, though in many cases it may prevail, has by no means made it clear that it is the keystone of the mighty arch of nature, or the clue by which her mazy labyrinth may be traced through *all* its windings and recesses.

Whoever considers the infinite ramifications of the Animal and Vegetable Kingdoms, the vast number of groups differing in rank and value, and rolling wheel within wheel, almost *ad infinitum*, of which each consists; may readily conceive that the formation of a numerical system, whether the number assumed as the regulator be *two, three, four, five, or seven*, is a labour of no very difficult accomplishment; but to construct it so that the groups of each section, from the primary to the ultimate, shall be equal or nearly equal in value, which alone can prove that it is the system of the Creator,—*hic labor, hoc opus est*.

Mr. Stephens, in his *Systematical Catalogue of British Insects*, containing, I believe, the last that has been published, has given a still different, and, upon the whole, an improved arrangement, in which he implicitly follows neither of his predecessors, and has taken great pains, as far as his means and limited subject permitted, though in some things he also appears to me mistaken, and who is not? to follow the light afforded him by nature. Sir J. F. W. Herschel's observations on this subject merit particular attention. "The classifications by which science is advanced, however, are widely different from those which serve as bases for artificial systems of nomenclature. They cross and intersect one another, as it were, in every possible way, and have for their very aim to interweave all the objects of nature in a close and compact web of mutual relations and dependence."<sup>5</sup>

<sup>5</sup> *Disc. on the Study of Nat. Philosophy, Cab. Cycl.* xiv, n. 134.



When so many eminent men form *different* conclusions from the *same* premises, we may rest assured that there is something in the subject of their lucubrations that admits of hesitation, and justifies variety of opinions; and this is clearly the case with respect to the arrangement of natural objects; for whether we consider the productions of our globe, in all their affinities, as best represented by a branching tree, a net, or a sphere formed of an infinity of larger and smaller orbits, connected on every side, and placed *ad infinitum* wheel within wheel; if we set ourselves to arrange and describe upon paper the individuals composing any department of the three kingdoms, we shall find that it is above us either to conceive or delineate it so as to maintain all its connections undisturbed and unbroken. We *must* do it in a *series*, which can only be a series of mutilations and dislocations. It will be like cutting off every branch and twig of the tree to place them end to end; like tearing up the net to place all the meshes one after the other; like blowing up the whole sphere, and unravelling, as it were, all its orbits great and small, to make a continuous thread of them. So that it is a hopeless case to attempt an arrangement according with nature *in all its parts*; vain man, with all his boasted powers of intellect, cannot conceive, much less utter and embody it. All that he can accomplish is to give some general idea of it, and to describe some fractions of it. He can also attend to the composition of his groups, and keep those together that are really related; but as to conterminous groups, he will often be at a loss which is nearest to the one in question, for from different parts of the same group, a variety of others will often branch off in different directions.

In the following pages, therefore, profiting by the labours of my predecessors, I have sometimes followed one and sometimes another, according as they appeared to me best to have interpreted nature, and sometimes, where it seemed expedient, I have entered new paths in my arrangement; it has been my endeavour principally to make my groups as near to nature as possible, but with regard to the series and concatenations of them, for the reasons above assigned, it was not possible to place them on paper as they are inscribed, by the GREAT AUTHOR of nature in her pages.

The author cannot conclude this Introduction without returning his acknowledgments to those gentlemen, to whom it will appear from a perusal of the following pages he is under great obligations for very considerable additions to his catalogue of the insects of the British Provinces in North America, namely to Dr. Bigsby, of Newark, and Capt. Sheppard, of her Majesty's Royal Regiment of Artillery, for those of Canada; and to Dr. Mac Culloch, and Capt. Hall, late of her Majesty's 81st Regiment, for those of Nova Scotia. From Dr. Thaddeus Harris, and Mr. Drake, he has received several specimens from the Province of Massachusetts, which are likewise found in the British Provinces.

The following Table exhibits the groups adopted in this work in the Orders *Coleoptera* and *Hymenoptera* only, the author, on account of the small number of specimens collected, having made no additions to those already established in the other Orders.

## Class INSECTA.

## Subclass MANDIBULATA.

## Order COLEOPTERA.

I. Adepnaga	{ Geadephaga	{ Euptera	{ Truncipennia	{ Nobilia
	{ Hygradephaga	{ Eutreacha	{ Obtusipennia	{ Plebeia
	{ Hydradephaga	{ Acutipalpia	{ Sarrothropoda	{ Dimana
		{ Subulipalpia	{ Cystopoda	{ Quadrimana
		{ Filipalpia	{ Quadrimana	
		{ Eunecha	{ Dimana	
		{ Gyronocha		
II. Brachelytra	{ Homogenea			
	{ Heterogenea			
	{ Subulipalpia			
	{ Microcephala			
	{ Fissilabra			
III. Entaphia				
IV. Necrophaga				
V. Philhydrida				
		{ Coprophaga	{ Hierentoma	
VI. Lamellicornia	{ Petalocera	{ Phyllophaga	{ Sternucha	
	{ Rectocera	{ Melitophila	{ Aposterna	
VII. Sternoxa				
VIII. Xylophaga	{ Brevicornia	{ Isocera		
	{ Longicornia	{ Anisocera		
	{ Xylotrypa			
IX. Rhynchophora	{ Gonatocera	{ Longirostria		
	{ Orthocera	{ Brevirostria		
X. Phytophaga	{ Cyclica			
	{ Eupoda			
XI. Aphidiphaga	{ Melasoma			
	{ Taxicornia			
XII. Heteromera	{ Stenelytra			
	{ Serripalpia			
	{ Trachelida			
XIII. Malacoderma	{ Vesicantia			

## Order HYMENOPTERA.

I. Terebrantia	{ Securifera			
II. Urocerata				
III. Parasita	{ Pupivora			
	{ Larvivora	{ Philopona		
	{ Heterogyna	{ Misopona		
	{ Lestica			
IV. Aculeata	{ Diplopteryga	{ Brachyglossa	{ Solitaria	{ Cuculina
	{ Anthophila	{ Macroglossa	{ Gregaria	{ Dasygastra
				{ Leiogastra



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# NORTHERN ZOOLOGY.

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## PART IV. INSECTA.

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Subkingdom .....	CONDYLOPA, <i>Lat.</i> <sup>1</sup>
Class .....	INSECTA.
Subclass .....	MANDIBULATA, <i>Clair.</i>
Order .....	COLEOPTERA, <i>Linn.</i>
	I. ADEPHAGA, <i>Clair.</i> <sup>2</sup>
	i. GEADEPHAGA, <i>Mac L.</i>
	(a) EUPTERA, <i>Kirb.</i>
	(α) BREVICOLIA, <i>Kirb.</i> <sup>3</sup>

THERE is one circumstance which I may mention in this place, distinguishing the majority of the tribes of this section—*Adephaga*,<sup>4</sup> and found also in some conterminous ones, as the *Staphylinidæ* and *Silphidæ*—which demands particular attention, since it has been used as a distinctive character of several of its groups: I allude to the dilatation of the *anterior*, and in several cases also of the *intermediate*, tarsus, in the males. But though Entomologists have paid some attention to this circumstance, they appear to have gone little further, and have not made all the use that they might have done, with advantage to the science, of the sexual distinctions observable in this part of these animals; for they have taken little or no notice of the variations in the clothing of the sole or underside of these dilated joints; speaking of it generally, except in the case of male *Dytiscidæ*, merely as a *brush*. Latreille, indeed, in his last work,<sup>5</sup> mentions *papillæ* as well as brushes,

<sup>1</sup> *Lat. Cours D'Ent.* i, 18. These are the *Annulosa* of modern Zoologists. For my reasons for adopting Latreille's term in preference, see my *Bridgewater Treatise*, ii, 17.

<sup>2</sup> I have not adopted, on the present occasion, the phraseology proposed in the *Introduction to Entomology*, (vol iv, p. 393) to distinguish the different subdivisions into which each section of an Order is resolvable, in descending to the families and genera, because I have not the means of applying it universally, or of making such a valuation of each as will indicate at once the denomination to which it is entitled.

<sup>3</sup> I consider the *Euptera* as forming three subtribes—viz. *Longicollia* (*Colliuris*), *Brevicollia* (*Cicindela*) and *Fissicollia* (*Manticora*.)

<sup>4</sup> *Carnivora*, *Lat.*

<sup>5</sup> *Crust. Arachn et Ins.* i, 401.

but seems not to have examined them very closely, and to have acquired no very precise idea of their nature. I shall, therefore, under the present head, enlarge a little upon this subject.

The Predaceous Beetles, considered with respect to this circumstance, are of three descriptions. 1. Those that exhibit no such distinction. 2. Those that have only the anterior tarsi or hands dilated. 3. Those that have the *two* anterior pair so circumstanced.

1. This sexual character, though very general, is not universal in the *Adephaga*. In the *Cicindelidans* the dilatation, though existing, is less conspicuous; in the *Colliuridans* the tarsi in both sexes are dilated, so that in them it is no *sexual* distinction; and the same circumstance occurs in the *Longicollia*—*Agra*, *Casnonia*, &c. amongst Latreille's *Truncatipennes* (*Brachinidæ* Mac Leay); in the *Mantidans*, and the *Bipartiti* Latr. (*Scaritidæ* Mac Leay) and likewise in some of the *Truncatipennes*, as *Lebia*, *Dromia*, and in some *Carabidans*, as *Procerus*, there is no dilatation in either sex; and amongst the *Hydradephaga* Mac Leay, the sexes of *Halipus* seem very slightly distinguished in this respect.

2. The majority of the *Geadephaga* have only the *anterior* tarsus or *hand* of the male dilated, and may be distinguished, with regard to this circumstance, by the name of *Dimani*; some of the *Truncatipennes* have only the posterior side of the joints dilated, this is the case with *Anthia*, *Galerita*, &c. but, more generally, both sides of the three or four first joints are so circumstanced; in the *Hydradephaga*, only in *Hydaticus* and *Acilius*, this character is restricted to the hand.

3. Amongst the *Geadephaga*, Latreille's *Quadrimani*—*Harpalus*, *Ophonus*, *Stenolophus*, &c.—have the joints of the *four* anterior tarsi dilated, but amongst the *Hydradephaga* this character is to be found in the majority.

The next circumstance, that calls for our attention, is the *number* of these dilated joints, for they vary in different tribes and genera. Thus the *Peryphidæ* have the first joint only of the hand dilated; the *Bembidiadæ* the first and the posterior side of the second; *Patrobus*, *Pogonus*, &c. the two first; but the most common, or what may be called the *typical* structure in this respect, is that in which the *three* first joints are dilated; this obtains in the *Cicindelidæ*, *Calosoma*, and the great majority of the *Eutreacha*, even in those that have the four anterior tarsi dilated; in the *Hydradephaga* the same number prevails; in the *Carabidans* and *Trechus*, &c. *four* joints are dilated.

The most important circumstance, however, connected with the present subject

is the lining that covers the sole of these dilated tarsi, or the kind of foot-cushions with which they are furnished. These are of three descriptions.

1. A dense *brush* of stiff *hairs*. This is to be found in the *Cicindelidans*, the *Carabidans*, and the *Chlæniadans*; insects so furnished may be denominated *Sarrothropoda*. I have noticed no particular variations of this kind of foot-cushion; in the last mentioned tribe, however, the *Chlæniadans*, the brushes are broader, the consequence of the greater dilatation of the joints, than in the other Sarrothropodous *Geadephaga*.

2. The next kind of foot-cushions are formed of little membranous *vesicles* or *cysts*, which are arranged in various ways in different tribes. In some, as *Helluo costatus*, the hand is furnished with a compound cushion, there being a brush on each side, and in the middle a line formed of short transverse rows of vesicles; in *Anthia* the dilated side of the joint only has a line of vesicles included between lateral brushes; in *Brachinus* and many others is a double oblique series of vesicles on each joint; in *Agonum* these vesicles are imbricated lying one upon another; in some, as in *Harpalus interpunctatus* of this catalogue, these little organs are arranged without order, and cover the whole joint. In this respect this species differs from the other *Harpali*, in which the vesicles are arranged nearly as in *Brachinus*. The insects that have this kind of foot-cushion may from it be named *Cystopoda*.

3. The third description of foot-cushions is when they are formed of pedunculated *cups* or *suckers*, as in several of the *Hydradephaga*, particularly *Dytiscus*, in whose hands may be seen two larger umbilicated cups with an infinity of minute ones, which I have elsewhere described.<sup>6</sup> These may be named *Pyxidiopoda*. The great object of all these formations is to enable the male to fix himself firmly *in coitu*, which is probably done by producing a vacuum, for which at least the cysts and cups seem particularly fitted,<sup>7</sup> and they may be rendered useful in tracing the affinities of the different groups of the Section, as will appear under another head.

GEADEPHAGA. Numerous, and seemingly inextricable, difficulties stand in the way of a perfectly natural arrangement of this vast group, which includes the whole of the Terrestrial Predaceous Beetles, for the Systematic Entomologist feels quite at a loss, when he asks himself by which path shall I next proceed? Though

<sup>6</sup> *Introd. to Ent.* iii, 693.

<sup>7</sup> *Ibid*, 691.

its typical Tribe, the *Euptera* offer no very material obstacle to the accomplishment of his purpose, a number of rival forms next present themselves, each preferring seemingly well founded claims to guide him towards a natural arrangement. Under the present head, perhaps, it may be useful to discuss this subject, a clear insight into which will prove, that it is not at all wonderful that Entomologists have adopted different methods of arrangement, and that each, is in some degree right. It may first be asked—what is that *Typical Form*, from which, led by nature, in an attempt to arrange the insects of the present Order, we must set off, as from a common centre or summit, round which all, as it were, revolve, and towards which all tend? This is a question, even in the present advanced state of the science, difficult to answer; for we have beetles before us of vast bulk and strength, elephants in the class of insects, but which are distinguished neither by the swiftness of their motion nor by the elegance and beauty of their forms; others we have, less clumsy indeed and gigantic, but remarkable for the perfection and symmetry of their general structure; the lightness and velocity of their motions both on the earth and in the air; and for the splendour and brilliance of their colours. Such, with only one or two exceptions, are the *Euptera* or Tiger Beetles. Amongst the higher animals, the Lion, chief of the Predaceous Quadrupeds, is usually accounted as the king of beasts; a similar reason will justify modern Entomologists for regarding the above tribe of beetles as the typical and most perfect form amongst insects, especially *Coleoptera*, instead of the Lamellicorn beetles, which Linné had elevated to that rank.

Having selected a typical or central tribe, let us next consider its composition. As far as at present known, it is composed of *three* principal groups. One remarkable for its long cylindrical neck and slender body, and for having all the tarsi of both sexes dilated and furnished with a brush, the penultimate joint terminating in a single lobe, the type of which is *Colliuris longicollis*; another with a short depressed neck, a stouter body, slender tarsi, with only the three first joints of the hand of the males slightly dilated, and covered underneath with a brush, and the penultimate joint not lobed, the type of which is *Cicindela campestris*; a third, removed to a vast distance from the preceding ones both in its aspect and many of its characters: in the former and its colour, which is a dismal black, resembling Latreilles *Melasomes*; as to the latter, though the claw of its maxillæ articulates with the lobe, and the mandibles are armed by long and threatening teeth as in *Cicindela*, yet having a neck or prothorax, like that which distinguishes the males in *Anthia*, bilobed behind; having the surface of the elytra plane with a

very large Epipleura; having no wings, and the hand of the male not being dilated nor furnished with a brush. The type of this sombre tribe is *Manticora Gigas*. From this statement it appears that in this Tribe, as at present known, there is no *circular* arrangement, it may be rather said to form a semicircle, beginning with the *Colliuridans*, passing from them by the *narrow* Cicindelidans to the type, and thence proceeding by *Megacephala* and the *dark-coloured* Cicindelidans towards *Manticora* with which the semicircle terminates at its lower extremity. To complete the circle it will be necessary to cast an eye over the other branch of the *Geadephaga*, the *Eutrecha*, and endeavour to discover which, amongst its different tribes, will best supply us with the means of doing it. Our eye probably might first be caught by the gigantic *Anthia*, and immediately we should be struck by a considerable resemblance between these, especially the males, and *Manticora*, and by a closer examination be convinced that they approached each other in the line of affinities; having found a link that connects with one end of our semicircle, we should next look round for some slender long-necked form to place next the other, and we should soon discover a group, consisting of several genera, in the same tribe with *Anthia*, that exhibited a most remarkable resemblance to the *Colliuridans*; upon inspecting these more nearly we should select *Agra* as almost the counterpart of *Colliuris*, comparing the head, the neck, the elytra, and especially the tarsi, we should find them all formed upon the same plan, except that in *Colliuris* the penultimate joint of the latter has only one lobe, which in *Agra* is bilobed, and feel a strong conviction, that this agreement in structure was not merely an analogical resemblance,<sup>8</sup> but an indication of close affinity. If we next look for some middle form, which, like *Cicindela campestris*, may be regarded as nearly equidistant from the two extremes, perhaps no better known genus could be selected than *Calleida* of De Jean, which, in colour, is almost as brilliant as a *Cicindela*; and, in form, may be regarded as nearly the *mean* of the semicircle of *Truncipennia* to which it belongs. This is the present aspect of the central group and of the tribe which appears most nearly connected with it; but to what alterations future discoveries may open a door I will not presume to conjecture. It would be rash to affirm that insects may not be found to complete a separate circle both of *Euptera* and *Truncipennia*, but the above arrangement seems to follow from our present knowledge of them.

<sup>8</sup> Mr. W. S. Mac Leay (*Annulos. Javan.* 8) seems to regard these as only analogical characters, but the points of agreement are too numerous for any thing but affinity. The agreement of these two genera in having all the tarsi of both sexes dilated, and furnished with a brush, with the penultimate joints lobed, is alone a sufficient proof.

I shall next proceed to state the result of my investigation with regard to affinities observable between other tribes of the *Euptera* and the *Eutreacha*. Mr. W.S. Mac Leay, in his arrangement, places *Elaphrus* next to the *Cicindelidans*,<sup>9</sup> and its claims to affinity with them can scarcely be doubted; but when we turn our attention to one of the *Elaphridans* described in this catalogue, *Opisthius Richardsoni*, we find that the tribe is also connected by affinity with the *Subulipalpi* of Latreille, as *Bembidium*, &c. a further confirmation of this may be derived from an inspection of *Ocydromus flavipes* (*Bembidium* Steph.) which though clearly one of the tribe last mentioned, is as clearly related to *Elaphrus*. It is evident therefore that, by the *Elaphridans*, the *Cicindelidans* are connected with the *Subulipalpi*, which I cannot agree with Mr. Mac Leay in regarding as belonging to the *Harpalidæ*; the *Acutipalpi* (*Trechus* and affinities) *Subulipalpi* and *Elaphridæ* appear to me to form a distinct tribe, consisting of *Eutreacha* delighting in humid places and constituting an intermediate or transition group (or perhaps a minor section which might be named *Hygradephaga*) usually consisting of small insects between the *Geadephaga*, or *terrestrial*, and the *Hydradephaga*, or *aquatic*, Predaceous Beetles. Here then we have a second series connected with *Cicindela*.

Mr. Mac Leay considers the *Carabidans* as near in affinity to the *Cicindelidans*, nor am I disposed to deny that they make an approach towards them; for the males of both are Sarrothropodous, the nearest approximation to *Cicindela* that these make, as far as I have had an opportunity of examining the family, is by *Carabus splendens* Oliv.<sup>1</sup> but this is still at a great distance and many forms are wanted to fill up the interval. The *Carabidans* go off one way towards the Cystipodous *Dimani* by the *Chlœniadans* and so proceed to the *Quadrimani*, from which we may enter the osculant group of *Elaphridans*, &c. by *Stenolophus* which connects my *Harpalidans* with *Trechus*, &c.

Thus we have three distinct tribes that branch from the typical group, but we seem to find nothing amongst the *Bipartiti* of Latreille to tend towards them, unless we may suppose *Oxygnathus* De Jean, and some of the other *Scaritidans*, to be connected with it by their mandibles. A circumstance however has been related of the larva of *Aristus bucephalus* which indicates some affinity between it and that of *Cicindela*; we are told it has the same habits and form,<sup>2</sup> but to look at the perfect insects, we see little resemblance, except an approach in the form of the thorax

<sup>9</sup> *Annulos. Javan.* 8.

<sup>1</sup> This insect is synonymous with that mentioned in the *Introd. to Ent.* (iv, 506, note) under the name of *C. levigatus*.

<sup>2</sup> N. D'H. N. ix, 510. Article *Ditomus*.

to that of *Manticora*. Intervening forms may hereafter be found, which may connect it with that genus, which itself, in some respects, has the aspect of one of the *Bipartiti*, or *Scaritidæ* Mac Leay.

From the above statement I trust it will appear evident that almost all the different tribes of *Geadephaga* immediately connect with the Typical Group, or branch from it, and that it is impossible to describe them in the order in which they are arranged by nature, and that, therefore, the different authors who have written upon them are all correct in their views, though they have taken different routes in departing from the central station. Thus Latreille, De Jean, and Stephens, are right when they assume the *Truncipennia* as an evident affinity; and Mr. Mac Leay also in going off by *Elaphrus* and *Carabus* and returning by the *Brachinidæ* and *Anthia*.

Under the present head I may further observe with regard to the sculpture of the elytra of the present sub-section, that, with the exception of *Manticora* and *Omophron*, at least as far as an extensive examination enables me to decide, they all, if viewed under a very powerful magnifier, appear to consist of a most minutely and beautifully reticulated substance, chagrined, as it were, with innumerable granules. In some, as *Harpalus carbonarius*, the *Bembidiadans*, &c. this circumstance is more conspicuous than in others, and it gives these animals a silky appearance; though most visible in the elytra, it may commonly be discovered in the head and prothorax. In the *Hydradephaga* it is most visible in the *Gyrinidans*. It is not however confined to the Predaceous Beetles, since it may be discovered in the *Buprestidans* and many other Coleopterous insects.

I shall here also observe once for all, that in all the *Eutrecha*, or Ground Beetles, that have a notch in their Cubit, with the exception of those whose elytra are distinguished by elevated ridges, as *Anthia*, *Brachinus*, and some others, near the margin of the elytra, where they are striated or furrowed, on the *eighth* furrow from the suture, or in the interval between it and the ninth, is usually a series of from twelve to thirty or more ocellated impressions, or impressions with an elevation in their centre, placed at various intervals, and sometimes only at the base and apex of the elytrum; those that have no notch in the cubit have usually no appearance of this kind, but in *Cicindela* these impressions, but without the central elevation, may be traced. The typical number of furrows, in the Ground Beetles is *nine*, but in *Omophron*, *Calosoma Sycophanta* and some others there are *fifteen*.

Family CICINDELIDÆ. *Cicindelidans.*I. Genus CICINDELA. Linn.<sup>1</sup>\* *Labrum unidentate.*(1) 1. CICINDELA HIRTICOLLIS. (Say.) *Hairy-necked Cicindela.**Cicindela hirticollis.* Say. *Amer. Trans. N. S.* i, 411, 2, t. xiii, f. 2.Length of the body  $6\frac{3}{4}$  lines.

Locality not stated.

## DESCRIPTION.

This species not a little resembles *C. hybrida*, but the labrum is prominent in the middle, and more conspicuously unidentate; the colour of its upper surface is browner with less of a purple tint; the prothorax is rather more hairy; the lateral margin of the elytra is white, from which proceed five white branches; the two first forming a humeral crescent with the lower limb bending obliquely towards the base of the elytrum, the third becoming a broken or S-shaped band, the extremity of which nearly reaches the suture; and the two last, forming a crescent at the apex of the elytrum, to produce which the whiteness of the margin is subinterrupted: the suture terminates in a minute point, and the apex of the elytra is serrulate. Underneath the body is green or golden-green, with the sides rather more thickly covered with snowy hairs than in the other species of the genus.

N. B. In the male the S-shaped band is interrupted.

<sup>1</sup> The larva of this genus, as well as that of *Aristus*, lies in wait for its prey, suspended by its dorsal hooks, in a little burrow it has formed. Its body is depressed. Its head corneous with eight eyes, the two external or lower ones being very minute. The plates that cover the trunk are coriaceous. The abdomen is fleshy, armed on its back with a pair of suspension-hooks. It has no anal processes. In many respects it exhibits an analogy both with spiders and the larva of the ant-lion.

Our present acquaintance with the *species* of this splendid genus is not so intimate as might be expected, since we have not yet attained to such a knowledge of them as will enable the Entomologist to distinguish with certainty the species from the mere variety. Count De Jean (*Species Général des Coléoptères*, i, and *Supplement* to ii) has described 144 species of the genus as now restricted; but whoever looks at his specific characters will perceive that, in general, they are taken from the white spots or bands of the elytra. These by no means, however, afford a certain and constant diagnostic. For instance, one individual confessedly of the same species, will have a white humeral crescent, an angular or broken discoidal band, with a terminal crescent, all extremely well defined. Another will exhibit the same characters, but become less distinct, and more faintly traced; in a third the humeral and terminal crescents of the elytra will have each become two distinct spots; which in a fourth will altogether disappear; lastly in a fifth, to name no more variations, the discoidal band will be almost, as it were, unidentate. So that, in some species, without the aid of other characters, these markings of the elytra will often be insufficient.



(2) 2. *CICINDELA REPANDA*. (De Jean.) *Wavy Cicindela*.*Cicindela repanda*. De J. *Coléopt.* i, 74?Length of the body  $5\frac{1}{4}$ —6 lines.

Locality not stated.

## DESCRIPTION.

Very like the preceding species, but the labrum is shorter and less prominent in the middle; the lateral margin of the elytra is not continuously white; the lower limb of the humeral crescent slopes towards the apex of the elytrum; the broken or S-shaped band terminates in a streak at the margin: all the markings also of the elytra are buff-coloured rather than white; and the minute mucro or point that terminates the suture, and the serrulations of the apex of the elytra, are less conspicuous.

De Jean regards this species as synonymous with *C. hirticollis*, but, if I am correct in my reference to him, of which I have little doubt, they are clearly distinct.

(3) 3. \* *CICINDELA PROTEUS*. *Proteus Cicindela*.*C. (Proteus) labro unidentato medio subprominulo, supra fusco-cuprea, elytris punctis quatuor, fuscique media fracta, albis.*

*Proteus Cicindela*, with the labrum unidentate, rather prominent in the middle; above brown-copper, elytra with four white dots and a mesal broken white band.

Length of the body  $5\frac{3}{4}$  lines.

This species, of which several specimens were taken in the Expedition, appears to abound in North America. Dr. Bigsby met with it in Canada, and there was a specimen in the late Mr. Marsham's collection probably from the United States.

## DESCRIPTION.

Similar to *C. repanda*, but instead of the humeral and terminal crescents, in all the varieties, are four white dots, two at the base and two at the apex of the elytra; the middle broken or tortuous band resembles the figure 7 reversed, and does not terminate in a marginal streak. The body underneath, as usual, is golden-green, or green with clouds of blue, above it is dark brown with a tint of copper.

VARIETY. B. With the apical dots not larger than the humeral.

C. With an interrupted crescent at the apex.

D. With three apical and two humeral dots; intermediate band internally abbreviated.

E. Like the last but with only one humeral dot.

\*\* *Labrum tridentate.*

(4) 4. *CICINDELA OBLIQUATA.* (De Jean.) *Oblique-marked Cicindela.*

*Cicindela obliquata.* De J. *Coléopt.* i, 72.

Length of the body  $6\frac{1}{4}$ — $7\frac{1}{4}$  lines.

Many taken in the Expedition, and apparently abundant in N. America. I received it many years since, but without a name, from my lamented friend Professor Peck.

DESCRIPTION.

Body above greenish-copper, underneath golden-green clouded with blue. Labrum white, tridentate slightly prominent in the middle; mandibles white at the base, black at the tip; palpi black; labial with the intermediate joint rufous, darker at the tip. Elytra with a large white humeral crescent, extended at the lower end obliquely beyond their middle; mesal band bent downwards, recurved at the end, and connected by a marginal line with a crescent at the apex.

In the male the intermediate joint of the labial palpi is white, and the mesal band is not connected with the terminal crescent.

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(5) 5. *CICINDELA VULGARIS.* (Say.) *Common Cicindela.*

*Cicindela vulgaris.* Say. *Amer. Trans. N. S.* i, 409, 1, t. i, f. 1.

——— *obliquata.* De J. *Coléopt.* i, 72, 56; ii, *Suppl.* 414, 56.

Length of the body  $6\frac{3}{4}$ — $7\frac{1}{2}$  lines.

A common species in all N. America.

DESCRIPTION.

Very nearly related to *C. obliquata* and regarded by Count De Jean as synonymous with it. They differ however in the following particulars. In *C. vulgaris* the upper surface of the body is nearly black, without any tint of bronzed-green. The humeral crescent of the elytra is slenderer, and its lower extremity does not approach so near the mesal band. In the females the intermediate joint of the labial palpi is black. In the males the underside of the body, with the exception of the anus, is of a fine blue instead of a golden-green.

(6) 6. CICINDELA PURPUREA. (Olivier.) *Purple Cicindela.*

*Cicindela purpurea.* Oliv. *Ent.* ii, n. 33, 11; t. iii, f. 34. Schön. *Syn.* i, 240, 14. De J. *Cat.* 1. *Say. Amer. Trans.* N. S. i, 449, 8; t. xiii, f. 8.

*Cicindela marginalis.* Fab. *Syst. Eleuth.* i, 240, 43. De J. *Coléopt.* i, 55, 39.

Length of the body 7—7½ lines.

Several varieties of this beautiful species were collected in the Expedition, but the finest specimen I have seen was taken in Canada by Capt. Sheppard, F.L.S. of his Majesty's Royal Regiment of Artillery. I have also received it from various other parts of North America. The green varieties of this species seem to be the American representatives of *C. campestris* so common in England and all Europe. As this species varies greatly, I shall take my description from Capt. Sheppard's specimen, which may be regarded as the most perfect type of the species.

## DESCRIPTION.

♀

Body underneath with the trunk resplendent with green, gold, and copper,—abdomen, with the exception of the green anal segment, blue; above purple with the base and apex of the prothorax green; the suture of the elytra is also green, and adjoining to the lateral margin is a blue and green longitudinal stripe; at the base of the elytra is a humeral dot, a little before the middle near the margin a round spot, in the middle a bent band, below this another round spot, and at the apex a triangular one, all pale buff-coloured and distinctly marked.

VARIETY. B. ♂. In this the spots and band of the elytra are the same in number and situation, but not so broadly traced as in A. The humeral dot is also larger than the marginal one between it and the band. Taken in Canada by Dr. Bigsby.

C. ♀. Lateral stripe of the elytra all green; spotted as in B, but the humeral spot is of the same size as the succeeding one. In Mr. Marsham's collection.

D. ♀. Elytra without the humeral and first marginal spots; the other spots as in variety B, except that the band does not approach the lateral margin.

E. ♂. ♀. Elytra with a discoidal oblique and apical transverse streak. Taken in the expedition, and in New England, by Professor Peck.

F. ♀. Elytra purple tinted with green, lateral stripe blue and green; discoidal band sinuated; no humeral or marginal spots; apical as in the type. Taken in Canada by Dr. Bigsby.

G. ♀. Elytra entirely green, spotted like variety D.

H. ♂. ♀. Elytra green with a blue marginal stripe, spotted like variety E. Taken in the Expedition, and in New Jersey by Mr. Drake.

The transition from the fully characterized type of the present species to those varieties with only two spots, and from them, by means of variety F, to those with green elytra, is so gradual as to convince any careful inspector of them, that all belong to one species: yet a person who had never examined the intermediate varieties would seemingly have good reason for considering them as forming, at least, three distinct ones.

(7) 7. \* *CICINDELA ALBILABRIS*. *White-lipped Cicindela*.

*C. (albilabris)* labro albo obsolete tridentato, medio prominulo; supra purpurascenti-nigra: elytris excavato-punctatis: guttis tribus marginalibus fasciaque fracta discoidali, albis.

White-lipped Cicindela, with the labrum white, obsoletely tridentate, rather prominent in the middle; elytra broadly punctured with three marginal dots and a broken discoidal band, all white.

## PLATE I. FIG. 1.

Length of the body 6—6½ lines.

Taken in Lat. 64°, and also in Canada by Dr. Bigsby.

## DESCRIPTION.

♂

Body underneath green or golden-green clouded with blue; above black with a purplish tint: labrum white, prominent, armed in the middle with three short teeth, the lateral ones obtuse; above with an intermediate obtuse longitudinal ridge: elytra, under a powerful magnifier, covered with innumerable minute granules, and also with numerous shallow impressions, a series of larger ones is parallel with the suture; the angular white discoidal band reaches neither the suture nor the lateral margin; there are also three marginal white dots, one humeral, another between it and the band, and one between the latter and the apex.

VARIETY. B. ♂. Body underneath blue, anus green; above black with the spots of the elytra buff-coloured.

C. ♂. Body underneath as in B: elytra with only two marginal dots, the band and apical dot almost obliterated, the humeral dot distinct.

D. ♀. Body underneath blue with a black anus: elytra with no marginal white dots; band replaced by a faint streak and dot. PLATE I. Fig. 1. ♀.

This species, though apparently common in North America, is not noticed by Say, who perhaps mistook it for *C. sylvatica* Linn. of which it may be regarded as the American representative, and with which it agrees in its prominent upper lip, and the shallow impressions and markings of its elytra, as well as nearly in its general colour. But besides its smaller size, it differs from it materially in having a *white* instead of a black upper lip with an obtuse longitudinal ridge and not an acute one, terminating in three almost obsolete short teeth instead of a single longer one; and likewise by the want of the silky lustre produced by granulations much more visible, which distinguishes the elytra of *C. sylvatica*.

- (b) EUTRECHA. Kirb.  
 (α) TRUNCIPENNIA. Kirb.

Family AGRIDÆ. *Agridans*.

II. Genus CASNONIA. Lat.

(8) 1. CASNONIA PENNSYLVANICA. (De Jean.) *Pennsylvania Casnonia*.

- Casnonia pennsylvanica. De J. *Coléopt.* i, 171.  
 Attelabus pennsylvanicus. Linn. *Syst. Nat.* i, 620, 5. Fab. *Syst. Eleuth.* ii, 418, 7.  
 Ophionea pennsylvanica. Klug. *Ent. Bras.* 24, 1.  
 Odacantha pennsylvanica. Herbst. *Ins.* x, 221, 2 t. clxxiii, f. 12.  
 Agra pennsylvanica. Lat. *Gen.* i, 196, 3, t. vii, f. 1.

Length of the body 3 lines.

Two specimens taken.

DESCRIPTION.

Body black. Head lozenge-shaped, elongated posteriorly, as in *Raphidia*, which gives the animal somewhat of a serpentine aspect, and connected with the prothorax by a rather long neck; antennæ rufous at the base: prothorax fusiform, widest posteriorly, having on each side an oblique basilar furrow: elytra testaceous with two black bands, one in the middle and the other near the apex, which unite at the lateral margin; their anterior half is striated with punctures: the legs are testaceous, penultimate joint of the tarsi bipartite with very slender lobes.<sup>2</sup>

Family LEBIADÆ. *Lebiadans*.

Genus CYMINDIS. Lat.

(9) 1. \* CYMINDIS MARGINATUS. *Margined Cymindis*.

*C. (marginatus) piceus, punctatissimus; antennis, ore, prothoracis lateribus explanatis, elytrorum striatorum margine laterali maculaque humerali, pedibusque, rufis.*

Margined Cymindis, piceous, thickly punctured; antennæ, mouth, dilated sides of the prothorax, lateral margin and shoulders of the striated elytra, and legs, rufous.

Length of the body  $4\frac{1}{2}$  lines.

One specimen of this insect was taken in the route from New York to Cumberland-house, and the other in Lat. 65°. It is nearly related to *C. pubescens* of De Jean,<sup>3</sup> but it appears distinct.

<sup>2</sup> De Jean (*Ubi. Supr.* i, 170) says that the penultimate joints of the tarsus is filiform, but it is really bipartite, though the lobes into which it is divided are very slender.

<sup>3</sup> *Spec. Génér. des Coléopt.* i, 215, 16.

## DESCRIPTION.

Body depressed and flat, as in its congeners, piceous; above densely punctured: mouth rufous: antennæ longer than the prothorax, piceo-rufous: front between the eyes transversely wrinkled: prothorax convex, with a longitudinal channel; lateral margin dilated, reflexed, and rufous: elytra striated or slightly furrowed, with the furrows and their interstices punctured; viewed on one side they appear hairy with upright ferruginous hairs; their shoulders and lateral margin are obscurely rufous; their apex obliquely truncated, and subemarginate: the legs are rufous.

VARIETY. B. Piceo-rufous; elytra concolorate.

(10) 2. \* CYMINDIS UNICOLOR. *Unicolorate Cymindis*.

*C. (unicolor) punctatissimus ferrugineus: pedibus dilutioribus; prothoracis margine haud explanato.*  
Unicolorate Cymindis, thickly punctured, ferruginous; legs paler; lateral margin of the thorax not dilated.

Length of the body  $3\frac{1}{2}$  lines.

One specimen only taken.

## DESCRIPTION.

This species greatly resembles variety B of the preceding. It is however smaller and paler; the prothorax has no longitudinal channel, and its lateral margin is not dilated.

Family SERICODIADÆ. *Sericodiadans*.

## IV. \* Genus SERICODA. Kirb.

*Labrum* transverse, subquadrangular: with the anterior angles rounded.

*Mandibles* acute, incurved at the apex, not toothed?

*Labium*<sup>4</sup> emarginate with a minute tooth in the sinus.

*Maxillæ*

*Palpi*

*Maxillary* five-jointed: first joint very minute, second longer than the rest, subcylindrical, attenuated at the base; third obconical; fourth as long as the third, fusiform, truncate; fifth very minute, retractile within the fourth.<sup>5</sup>

*Labial* three-jointed: joints nearly equal in length; the two first conical; the last fusiform, truncated.<sup>6</sup>

*Antennæ* rather incrassated toward the apex; scape incrassated; second joint the shortest, and the third rather longer than the others.

<sup>4</sup> The *labium* here is synonymous with the *mentum* of most modern Entomologists for reasons assigned in the *Introd. to Ent.* (iii, 420, 5th Ed.)

<sup>5</sup> Plate I, Fig. 2 a.

<sup>6</sup> Plate I, Fig. 2 b.

*Body* depressed, narrow. *Head* triangular. *Eyes* large and prominent. *Neck* very little constricted. *Prothorax* short, channelled, widest anteriorly: with the angles rounded. *Elytra* obliquely truncated at the apex, and emarginate, so that internally they terminate in an acumen. *Cubit* emarginate. *Tarsi* with the penultimate joint entire. *Claws* single, not pectinated.

The maxillary palpi of the genus here defined present an anomaly observed in no other known coleopterous genus, they appear to be furnished with a minute *fifth* joint retractile within the fourth. In one of these palpi, in the only specimen taken, this little accessory joint is not apparent, but in the other it is distinctly seen emerging from the fourth joint, or rather, as this last appears broken at the apex, it is uncovered. There is only one supposition that can reconcile this case to the general rule, that no *coleopterous* maxillary palpus shall exceed four joints, namely—that this is an effort of nature, by a reproduction, to restore the mutilated organ so as to fulfil its functions. Did the insect belong to the *Crustacea* or *Arachnida* this would be a satisfactory explanation of the anomaly, but I do not recollect any instance upon record of a genuine *insect* having reproduced a lost organ. I thought it possible that the palpi of other *Predaceous* beetles might contain a retractile joint, and this truncated apex seemed in some degree to favour the idea, but I did not succeed in my endeavours to discover one.

The above structure of the palpi, if not accidental, seems to give our little insect some affinity with the *Subulipalpi* of Latreille, but its general characters and aspect appear to demand a place for it somewhere between those *Truncipennia* whose claws are not pectinated, and those who have those organs so armed.

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(11) I. \* SERICODA BEMBIDIOIDES. *Bembidian Sericoda.*

*S. (bembidioides) subtus nigra, supra nigro-ænea, subsericea; prothorace subtrapezoideo, posterius bifoveato: elytris substriatis brevibus subnebulosis, apud suturam fovearum serie.*

Bembidian *Sericoda*, black underneath, above black-bronzed rather silky; prothorax subtrapezoidal, with a pair of impressions behind; elytra substriated, impunctured, somewhat clouded, with a series of impressions adjoining the suture.

PLATE I, FIG. 2.

Length of the body  $3\frac{1}{4}$  lines.

Only a single specimen taken.

Mr. Drummond, in answer to my queries with respect to this, and some others of the more remarkable insects taken in the *Expédition*, observes, upon reading my description of this insect, that it agrees with one taken on the sandy shores of Lake Winnipeg in the spring of 1825, that it runs on the sands with great agility, and frequently flies when attempted to be taken. But this statement agrees so precisely with the motions of *Bembidium impressum* as described by Linné and Gyllenhal (see under that insect) that I suspect Mr. Drummond had his eye to it, rather than *Sericoda*.

## DESCRIPTION.

Body underneath black, glossy; above the black has a brassy tint, with somewhat of the lustre of silk: head, between the eyes, marked with a short, anteriorly forked furrow: prothorax subtrapezoidal, anteriorly subemarginate, sides oblique with the margin reflexed, transversely very minutely wrinkled, with a pair of anterior excavations in the disk, posteriorly also somewhat impressed on each side: elytra longer than the head and prothorax together, slightly furrowed with impunctured furrows, obsoletely clouded; there is a series of about five shallow impressions near the suture.

Family BRACHINIDÆ. *Brachinidans.*

V. Genus BRACHINUS. Web.

(12) 1. BRACHINUS CYANIPENNIS.<sup>7</sup> (Say.) *Blue-winged Bombardies.*

*Brachinus cyanipennis.* Say. *Journ.* III, i, 443.

Length of the body 5 lines.

Several specimens of this insect were taken in the Journey from New York to Cumberland-house, and in Lat. 54°; Mr. Nuttall took it near the Missouri; and Mr. Say in great numbers near Engineer Cantonment, where they were found hibernating in the fissures of a stone-quarry; it was taken also in Canada by Dr. Bigsby.

## DESCRIPTION.

This species is very closely allied to *B. crepitans*, common in England and all Europe, but the second and third, as well as the other joints of the antennæ are red: the principal distinction, however, is in the shape of the prothorax, which is shorter, anteriorly more dilated, and the posterior angles are more prominent: it is scarcely half the size of its compatriot *B. fumans*, and differs from that, and all other *Brachini* that I have examined, in having the thin white membrane that terminates the elytra, especially at their internal angle, much longer and more conspicuous; this membrane, which is a continuation of the hypoderma or lining of the elytra, is but just discoverable in *B. crepitans*; the extreme base of these organs is testaceous: the underside of the abdomen is rufo-piceous. In other characters this insect agrees with the species last named.

<sup>7</sup> As many species have blue elytra this name is not sufficiently distinctive.



Having arrived at this point, I must now retrace my steps, and starting again from another branch of the Cicindelidans (*Cicindela*) proceed by the *Carabidæ*.

(b.) *OBTUSIPENNIA*. Kirb.

(α) *NOBILIA*. Kirb.

### Family CARABIDÆ.

Genus CARABUS. Linn.

#### (13) 1. CARABUS VIETINGHOVII. (Adams.) *Vietinghoff's Carabus*.

*Carabus Vietinghovii* Ad. *Mem.* iii, 170, t. xii, f. 3. Fisch. *Ent. Russ.* i, 98, t. ix, f. 19. De J. *Coléopt.* ii, 61, 21.

PLATE I, FIG. 3.

Length of the body 10 lines.

#### DESCRIPTION.

♀

Body very black and glossy. Head punctured between the eyes with confluent but not minute punctures; anterior part of the front wrinkled on each side, but the nose and upper-lip are quite smooth; the seven terminal joints of the antennæ are brown: the prothorax is nearly square with the sides rounded anteriorly and the posterior angles a little prominent; it is deeply channelled, transversely wrinkled in the disk, confluent but not minutely punctured on the sides; the disk also is black, but the sides exhibit shades of dark blue and green, at the margin they are of a most brilliant ruddy copper, some of the anterior punctures also appear as if gilded: the elytra are rough and as it were reticulated with longitudinal and transverse elevations, the former nearly arranged in lines which produce deep cavities; the disk is of a fine deep blue, the sides green and the lateral margin of the same ruddy copper as that of the prothorax. The body underneath is quite smooth in the disk, with some irregular elevations and depressions on the sides: the sides of the antepectus, or forebreast, are of a fine green; the intermediate segments have each a pair of impressions from which a hair emerges. This is most visible in the male.

I at first regarded this splendid insect as a new species. I thought it, indeed, very near *Carabus Vietinghovii*, but as it did not altogether agree either with Dr. Fischer's figure or description, and was found in another quarter of the globe, I regarded it as distinct; but having received from my friend Mr. Hope, a Russian specimen of that insect, I find no difference sufficient to constitute a species. In that specimen the marginal gilding of the prothorax and elytra is greener with scarcely any of the ruddy hue of copper which gives such brilliance to the American specimen. It has been observed that the plants on the other side of the rocky mountains are of an Asiatic type, and the present animal, and some others I shall hereafter notice, furnish a proof that several of the insects are similarly circumstanced. The sculpture of the elytra of this species is precisely that of a *Procerus*, to which genus I at first referred it, but the tarsi of the male are dilated which is the character assigned to *Carabus*. The only specimen taken was brought over in spirits, and affords a striking proof of the excellence as well as convenience of that mode of destroying and preserving beetles for

transportation.<sup>8</sup> It has been in my custody more than twelve months since it was taken out of the spirits, and it has never been at all mouldy, nor has it ever suffered from the attack of *Acari*, &c. from which other insects preserved with it have not escaped, which leads me to conjecture that immersion in spirits, if for a sufficiently long period, renders an insect distasteful to the little devastators of our cabinets.

(14) 2. *CARABUS LIGATUS*. (Knoch.) *Ligated Carabus*.

*Carabus ligatus*. Germ. *Ins.* i, 6, 10.

—— *carinatus*. De J. *Coléopt.* ii, 80, 35?

Length of the body  $7\frac{1}{2}$  lines.

Taken in Canada by Dr. Bigsby.

DESCRIPTION.

Body black and glossy. Head oblong, impunctured, separated from the neck by a transverse slender curving ridge forming anteriorly a deep sinus; ridge, defending the base of the antennæ, conspicuous; frontal impressions long, not deep; antennæ not much longer than the prothorax: prothorax nearly square, black slightly bronzed; sides lightly punctured, lateral margin reflexed; it is faintly channelled, depressed transversely at the base, with a punctured impression on each side: elytra bronzed, subdepressed with scarcely any sinus at the apex, lateral margin reflexed and carinated: each elytrum with thirteen or fourteen rows of impressed punctures; a triple series of oblong discoidal elevations; interstices with numerous transverse linear impressions: abdomen underneath smooth with a few minute punctures on the sides.

The insect here described agrees with Germar's description of Knoch's *C. ligatus*, but it is doubtful whether it be synonymous with *C. carinatus* of De Jean. In most respects, indeed, it accords precisely with his description, but the head is not slightly punctured, as he states his specimens to be.

VII. Genus CALOSOMA. Fab.

i. \* Subgenus. CHRYSOSTIGMA.

*Calosoma*. *Maxillary Palpi* with the last joint of the length of the last but one.

*Elytra* gilded.

*Chrysostigma*. *Maxillary Palpi* with the last joint shorter than the last but one.

*Elytra* obscure with gilded punctiform impressions.

The Genus *Calosoma* clearly admits of being divided into two families. The first, which I regard as the typical family, including *C. Sycophanta* and *C. Scrutator*, distinguished by the golden splendor of its *whole* upper surface, and by having the last joint of the maxillary palpi of the same length with the preceding one; and the other, including the rest of the known species, not remarkable for the lustre of their upper surface, but for several rows of gilded punctiform impressions or stigmata upon their elytra, and distinguished by having the last joint of the above palpi shorter than the last but one.

<sup>8</sup> *Introd. to Ent.* 5th Ed. iv, 541.

(15) 1. CALOSOMA (*Chrysostigma*) CALIDUM. (Fabricius.) *Calid C. Chrysostigma*.

*Calosoma calidum*. Fab. *Syst. Eleuth.* i, 211, 1. De J. *Coléopt.* ii, 197, 5.

*Carabus calidus*. Fab. *Syst. Ent.* i, 37, 8. Oliv. *Ins.* iii, 35, 30, 26, t. iv, f. 45.

Length of the body 9 lines.

This species is very common in all parts of North America; several specimens were taken in the Expedition.

## DESCRIPTION.

Body short, underneath very black, glossy. Head thickly and confluent punctured and wrinkled; frontal impressions short and large; mandibles obliquely wrinkled: prothorax transverse, very short, thickly and confluent punctured; dorsal channel slight and abbreviated; lateral margin reflexed particularly at the posterior angles: elytra with fifteen elevated obtuse ridges intersected by innumerable transverse impressed lines; on the fourth, eighth, and twelfth ridges, which are wider than the others, are from nine to eleven punctiform impressions coated, as it were, with brilliant gold leaf, often of the ruddy hue of copper; one or two also are usually to be seen at the base of the sutural ridge; in some specimens one on one side, and two on the other, in others two and three: the body underneath is thickly and confluent punctured on each side.

(16) 2.\* CALOSOMA (*Chrysostigma*) FRIGIDUM. *Frigid C. Chrysostigma*.

*C. (frigidum) nigrum, subtus lateribus obscure virescentibus; etytris striatis: striis punctatis, interstitiis elevatis transverse lineatis, foveolisque bilobis triplici serie; margine virescenti; prothoracis angulis posticis deflexis.*

Frigid *Calosoma*, black underneath with greenish sides; elytra furrowed with the furrows punctured; interstices of the furrows elevated with transverse lines impressed, and a triple series of bilobed obscurely gilded punctiform impressions; margin greenish; posterior angles of the prothorax depressed.

Length of the body  $9\frac{1}{2}$  lines.

Taken in Drummond's Island, Canada, by Dr. Bigsby.

## DESCRIPTION.

Not unlike *C. calidum*, but longer in proportion and more depressed. Body black, not glossy above. Head confluent punctured and wrinkled: mandibles obliquely but less densely wrinkled, and frontal impressions longer than in *C. calidum*: prothorax scarcely wider than the head, posterior angles bent downwards: elytra scarcely at all bronzed, lateral margin, obscurely green, with the same number of elevated lines as in *C. calidum*, but in the furrows formed by them is a series of punctures, and the transverse lines are less conspicuous; there is a triple series of punctiform impressions, but they are bilobed, smaller, and the gilding is greenish and less conspicuous; they are also less numerous, there being only seven or eight in the series next the suture, eight or nine in the intermediate one, and three only towards the apex in the external one: at the base there is also a pair on each side: the sides of the body underneath are greenish, punctured and wrinkled.

(β) PLEBEIA. Kirb.

Family NEBRIADÆ. *Nebriadans*.

VIII. Genus HELOBIA. Leach.

(17) 1. \* HELOBIA CASTANIPES. *Chestnut-foot Helobia*.*H. (castanipes) atra, nitida; elytris piceis, striatis: striis subpunctatis, foveolis quibusdam impressis; antennis pedibusque, castaneis.*

Chestnut-foot Helobia, black, glossy; elytra piceous, furrowed: furrows indistinctly punctured with some punctiform impressions; antennæ and legs pale chestnut.

Length of the body 5 lines.

Two specimens were taken in Lat. 65°.

## DESCRIPTION.

Body black, glossy. Antennæ, mouth, mandibles, and palpi pale chestnut or mahogany colour; the former more dilute at the apex; front with three or four slight furrows between the eyes; upperlip very short: prothorax heart-shaped, constricted posteriorly, convex in the disk; sides and base depressed and lightly punctured: elytra dark piceous, striated or slightly furrowed: furrows very obsoletely punctured; interstices very flat; between the second and third furrows, adjoining the latter, are from three to five shallow but rather large impressions: the legs are slender, of a pale chestnut or mahogany colour, in one of the specimens the thighs are darker than the rest of the leg.

N. B. In one specimen there are three and in the other five impressions.

(c.) SARROTHROPODA. Kirb.

## Family CHLÆNIADÆ.

IX. Genus CHLÆNIUS. Bonell.

(18) 1. CHLÆNIUS SERICEUS. (Say.) *Silky Chlænius*.Chlænius sericeus. Say. *Amer. Trans. N. S.* 61, 1. De J. *Coléopt.* ii, 347, 47.—— laticollis. De J. *Cat.* 8.Carabus sericeus. Forst. *Cent.* 58. Oliv. *Encycl.* v, 341, 89.

Length of the body 6—7 lines.

Several taken in the Journey from New York to Cumberland-house. In Canada, by Dr. Bigsby.

## DESCRIPTION.

Body black underneath, above of a rich silky green, bronzed on the head and prothorax. Head punctured with scattered punctures; the middle space between the eyes has a central punctiform impression; upper-lip and mandibles ferruginous; palpi and antennæ paler; the latter, half the length of the body, the third joint being twice the length of the following one: prothorax subquadrangular with curving sides, channelled with the channel abbreviated at both extremities; basilar impressions oblong; scutellum acuminate, black: elytra not shining, very slightly furrowed with punctures in the furrows; the interstices also being most numerous and minutely punctured; thickly set with yellowish hairs: legs deep yellow with black coxæ.

(19) 2. \* CHLÆNIUS IMPUNCTIFRONS. *Impunctifront Chlænius.*

*C. (impunctifrons) niger; capite lævi prothoraceque viridibus; elytris obscuris virescente-nigris; epipleura apice; antennis basi, pedibusque testaceis.*

Impunctifront Chlænius, black with its smooth head and prothorax green; elytra not shining, greenish-black; apex of the side-covers and legs testaceous.

Length of the body 5—5 $\frac{3}{4}$  lines.

## DESCRIPTION.

Smaller than *C. sericeus*, though like it. Head without punctures; antennæ black with the three first joints testaceous: scutellum not acuminate: elytra black with a shade of green; apex of the epipleuræ or side-covers and legs testaceous; coxæ chestnut. In other respects this agrees with the preceding species.

(20) 3. CHLÆNIUS NEMORALIS. (Say.) *Nemoral Chlænius.*

*Chlænius nemoralis.* Say. *Amer. Trans. N. S.* 65, 8. De J. *Coléopt.* ii, 332, 34.

——— *amethystinus.* De J. *Cat.* 8.

*Carabus amethystinus.* Melsh. *Cat.*

Length of the body 6 lines.

A pair taken in the Journey from New York to Cumberland-house. I have excluded the synonyms of Fabricius and Olivier, to which De Jean has added a mark of interrogation, because they both describe the species they call *C. amethystinus*, as blue underneath, of which colour our insect has not the slightest shade, and Olivier's figure<sup>9</sup> evidently belongs to a much smaller insect.

<sup>9</sup> *Ins. t.* xi, f. 126.

## DESCRIPTION.

Body black underneath. Head and prothorax bronzed-copper; front wrinkled; mouth and oral organs ferruginous; antennæ rufous, the three first joints clearer than the rest: prothorax rather narrow anteriorly, densely punctured, somewhat hairy; channelled, with a posterior linear impression on each side: scutellum black, triangular: elytra deep blue, with a shade of violet, furrowed like the other species, with the interstices of the furrows indistinctly and most minutely granulated: legs rufous.

(21) 4. \* *CHLÆNIUS QUADRICOLLIS.* *Square-necked Chlænius.*

*C. (quadricollis) niger, capite thoraceque subquadrato æneo-viridibus; palpis, antennis basi, pedibusque testaceis; elytris cæruleo-nigris.*

Square-necked Chlænius, black; head and subquadrate thorax bronzed-green; palpi, legs, and base of the antennæ testaceous; elytra blue-black.

Length of the body 6 lines.

Taken by Dr. Bigsby in Canada.

## DESCRIPTION.

Body hairy like the others, black underneath. Head and prothorax bronzed-green; mandibles piceous; palpi and three first joints of the antennæ testaceous; the latter are longer than the thorax, with the fourth joint as long as the third: prothorax rather square, a little narrower before, with the sides curving, sculptured like the preceding species: scutellum subacuminate: elytra blue-black, furrowed with deeper furrows very visibly punctured, interstices minutely punctured.

(22) 5. \* *CHLÆNIUS CORDICOLLIS.* *Heart-necked Chlænius.*

*C. (cordicollis) niger; prothorace obcordato; palpis, pedibus, antennisque basi, rufis; elytris nigro-virescentibus.*

Heart-necked Chlænius, black; prothorax obcordate; palpi, legs, and antennæ at the base rufous; elytra black with a shade of green.

Length of the body 8 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black. Head impunctured; palpi rufous; antennæ dusky, with the three first joints rufous, the third much longer than the fourth: prothorax obcordate, constricted behind, deeply channelled, disk gibbous on each side of the channel, centre of each gibbosity smooth, remainder of the prothorax punctured; posterior lateral impression longitudinal: elytra black with a shade of green, sculptured as in the preceding species, but the interstices of the furrows are more visibly punctured: legs testaceous, thighs darker.

(23) 6. CHLÆNIUS EMARGINATUS. *Emarginate Chlænius.*

*Chlænius emarginatus.* Say. *Amer. Trans. N. S.* 64, 7. De J. *Coléopt.* ii, 366, 65?

Length of the body  $6\frac{3}{4}$  lines.

Taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body hairy, punctured; black underneath. Head glossy green, with a tint of copper between the eyes, and a network of very minute, confluent, transverse wrinkles; maxillæ and palpi rufous, maxillary palpi very long; upper-lip transverse, rufo-piceous, anteriorly subemarginate; mandibles piceous; antennæ rufous, longer than the prothorax with the third joint rather longer than the fourth; prothorax dusky-green, transverse, rather narrowest at the apex, very thick and minutely punctured; basilar impressions double, the inner one the longest: elytra black with a very faint tint of blue: legs rufous.

This is most probably the *Chlænius emarginatus* of Say, but it does not exactly accord with De Jean's description.

(d.) CYSTOPODA. Kirb.

(γ) DIMANA. Kirb.

Family AGONIDÆ. *Agonidans.*

X. Genus PLATYNUS.<sup>1</sup> Bonell.

(24) 1. PLATYNUS ANGUSTICOLLIS. (De Jean.) *Narrow-necked Platynus.*

*Platynus angusticollis.* De J. *Cat.* 10. Steph. *Illustr. Mandib.* i, 83, 1.

*Carabus angusticollis.* Fab. *Syst. Eleuth.* i, 182, 64.

—— Duft. *Fn. Austr.* ii, 173, 231.

—— *assimilis.* Payk. *Fn. Suec.* i, 119, 30.

—— *collaris.* Marsh. *Ent. Brit.* i, 443, 39.

*Harpalus angusticollis.* Gyll. *Ins. Suec.* ii, 81, 2.

*Anchomenus angusticollis.* Sturm. *Deutsch. Fn.* v, 168, 2, t. xxx? De J. *Coléopt.* iii, 104, 3.

Length of the body 5 lines.

Taken in Lat. 54°. and 65°. Not uncommon in Britain.

<sup>1</sup> Latreille places this genus, *Anchomenus*, and *Agonum*, in the same tribe with *Chlænius*, *Licinus*, *Panagæus*, &c. which he distinguishes by the appellation of *Patellimani*, (*Crust. Archn. et Ins.* i, 401,\*) but it seems to have escaped this learned and acute Entomologist, that in these genera, though the form of the dilated joints of the hand of the males differs from that of his *Simplicimani*, yet that underneath, like them they are furnished, not with a *brush* like the last named genera, but with little membranous bags or cysts.

\* I have quoted this work under the title which M. Latreille himself affixed to those copies that were presented to his friends or sold separately—viz. *Les Crustacés, Les Arachnides et Les Insectes*, forming two volumes *per se*, and the 4th and 5th of Baron Cuvier's 2nd edition of the *Règne Animal*.

## DESCRIPTION.

Body very black, glossy, somewhat narrowed. Head smooth, narrower than the prothorax, including the neck subrhomboidal, without it triangular; palpi and antennæ piceous; frontal impressions large: prothorax narrower than the elytra, obcordate, longer than wide; dorsal channel deep terminating anteriorly in a transverse obtuse angular impression; lateral margin dilated, especially at the base, reflexed, somewhat piceous in a strong light, basilar impressions single, large, round, with a few scattered indistinct punctures: elytra rather deeply furrowed; furrows very slightly punctured, between the second and third are two punctiform impressions, the anterior one being adjacent to the former furrow, and the posterior to the latter.

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 XI. Genus AGONUM. Bonell.
ii. Subgenus ANCHOMENUS.<sup>2</sup>(25) 1. AGONUM (ANCHOMENUS) EXTENSICOLLE. *Extended-necked A. Anchomenus.*

*Anchomenus extensicollis.* De J. *Coléopt.* iii, 113, 11.

————— *viridanus.* De J. *Cat.* 10.

*Carabus extensicollis.* Melsh. *Cat.*

*Feronia extensicollis.* Say. *Amer. Trans. N. S.* ii, 54, 34.

Length of the body  $4\frac{1}{2}$  lines.

A pair taken in Lat. 54°.

## DESCRIPTION.

Body black underneath, above dark green sometimes bronzed; palpi, legs, and three first joints of the antennæ reddish-yellow: prothorax quadrangular, elongate, somewhat constricted posteriorly, lateral margin very slender; basilar impressions oblong: elytra furrowed, furrows obsolete punctured; five punctiform impressions in the third furrow from the suture.

(26) 2. \* AGONUM PICIPENNE. *Pitch-winged Agonum.*

*A. (picipenne) nigrum, nitidum; ore pedibusque rufis; prothorace oblongo-ovato; elytris piceis, foveolis quatuor vel quinque impressis.*

Pitch-winged Agonum, black, glossy; mouth and legs rufous; prothorax oblong-ovate; elytra piceous with four or five punctiform impressions.

Length of the body  $3\frac{1}{4}$ —4 lines.

Several specimens taken in Lat. 54°.

<sup>2</sup> *Anchomenus* differs from *Agonum* in scarcely any respect, except in having the posterior angles of the prothorax less rounded, and as it is closely connected with it by those species, which like *Agonum picipes* have a longer prothorax, I consider it merely as a subgenus.



## DESCRIPTION.

Body black, glossy. Mouth and its organs rufous, except the upper-lip which is edged with that colour; antennæ longer than the prothorax, piceous with the scape paler than the other joints: prothorax longer than in the following species, oblong-ovate, with the lateral margin piceous, and not dilated posteriorly as in the majority; basilar impressions rather shallow, oblong: elytra oblong, rufo-piceous, slightly furrowed, furrows impunctured; five punctiform impressions between the second and third; the three anterior ones adjacent to the latter, and the two posterior to the former: legs dusky rufous.

VARIETY B. With only four punctiform impressions, legs paler.

C. With the second, third, and fourth joints of the antennæ piceous, the rest ferruginous: impressions of the elytra as in B.

D. Larger, elytra with five impressions, in other respects like C.

This species appears very like *A. lenum* De Jean,<sup>3</sup> which is also North American, but the colour of the underside of the body and of the head and prothorax is different.

(27) 3.\* AGONUM SORDENS. *Dingy Agonum*.

*A. (sordens) nigrum nitidum; prothorace postice angustiori, antennis basi, pedibusque testaceis; elytris sordide testaceis foveolis quinque impressis.*

Dingy Agonum, black, glossy; prothorax narrower behind; base of the antennæ and legs testaceous; elytra dingy-testaceous, with five punctiform impressions.

Length of the body 3 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Head rhomboidal; mouth, mandibles at the tip, palpi at the base, and scape of the antennæ, rufous; frontal impressions very slight: prothorax scarcely longer than wide, narrowest behind; dorsal channel rather deep; lateral margin underneath testaceous; basilar impressions oblong, deepish: elytra dusky-testaceous, in one specimen a little bronzed, slightly furrowed, furrows impunctured; between the second and third are five punctiform impressions placed as in the last species: epipleura and legs testaceous.

<sup>3</sup> *Coléopt.* iii, 166, 39.

(28) 4. AGONUM MELANARIUM. (De Jean.) *Black Agonum*.

*Agonum melanarium*. De J. *Coléopt.* iii, 152, 19.  
*Carabus pullatus*. Melsh. *Cat.* 89.

Length of the body  $4\frac{3}{4}$  lines.

Taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Mandibles at the tip, mouth and scape of the antennæ, piceous: prothorax nearly as long as wide; disk transversely wrinkled; lateral margin at the base much dilated, rather incrassated, and subangular; posterior impressions large and distinctly punctured: elytra wider than the prothorax, submarginate at the base; distinctly furrowed with very minute and inconspicuous punctures in the furrows; three punctiform impressions in the third furrow from the suture: legs piceous.

This species is the American representative of *A. versutum*, which it much resembles. It is however larger, the transverse wrinkles of the disk of the prothorax, and the punctures in its posterior impressions, are more distinct; the furrows of the elytra are rather deeper with more convex interstices, and the three punctiform impressions are all adjacent to the third furrow, whereas in *A. versutum* the anterior one alone is adjacent to that furrow, the two other adjoining the second.

(29) 5. \* AGONUM SEMINITIDUM. *Half-glossy Agonum*.

*A. (seminitidum) nitidum, subtus nigrum, capite prothoraceque viridi-æneis; elytris obscurioribus, nigro-æneis, quinque-foveolatis.*  
 Half-glossy Agonum, glossy, black underneath, head and prothorax greenish-bronzed; elytra more obscure, black-bronzed, with five punctiform impressions.

Length of the body  $4\frac{1}{2}$  lines.

Taken in Lat. 54°.

## DESCRIPTION.

Body smooth, glossy, black underneath. Head greenish-bronzed, very glossy, with frontal impressions lunular; antennæ longer than the prothorax: prothorax greenish-bronzed with a copper tint, very glossy, channelled, disk transversely and minutely wrinkled; basilar impressions longitudinal, lateral margin, particularly at the base, reflexed: elytra black-bronzed, less glossy than the head and prothorax, lightly furrowed; furrows punctured; in the insterstice between the second and third furrows are five punctiform impressions, two nearer the base and three nearer the apex of the elytrum, so that the interval between the second and third is greater than that between the others.

VARIETY B. Second and third punctiform impressions not more distant than the others. In this specimen, on the left hand elytrum, there are only four impressions, and on the other five, but in neither are the second and third situated as in A. It may be a distinct species, but I can discover no other difference.

(30) 6. \* AGONUM SIMILE. *Similar Agonum.*

*A. (simile) nitidum, subtus aterrimum, supra æneo-nigrum; elytris stria suturali reliquis profundiori, quinque-foveolatis.*

Similar Agonum, glossy, underneath very black, above a little bronzed; elytra with the sutural furrow deeper than the rest, marked with five punctiform impressions.

Length of the body  $3\frac{1}{4}$  lines.

Locality not stated.

## DESCRIPTION.

Body glossy, underneath very black, above black slightly bronzed. Antennæ scarcely longer than the prothorax: prothorax rather longer than broad; basilar impressions roundish, impunctured: elytra more bronzed than the head and prothorax, lightly furrowed; furrow adjoining the suture more depressed and deeper than the rest; in the space between the second and third furrows are five equidistant punctiform impressions, the two anterior adjoining the latter furrow, and the three posterior the former.

This little species greatly resembles *A. seminitidum*. It is however much smaller, less bronzed, the prothorax is longer in proportion, the sutural furrow is deeper, and the impressions are differently arranged.

(31) 7. \* AGONUM AFFINE. *Kindred Agonum.*

*A. (affine) atrum, nitidum; prothorace subquadrato, margine laterali postice vix reflexo; elytris æneo-nigris, trifoveolatis; trochanteribus quatuor anterioribus rubris.*

Kindred Agonum, black, glossy; prothorax rather square, with the lateral margin scarcely reflexed at the base; elytra slightly bronzed with three punctiform impressions; four anterior trochanters red.

Length of the body 4 lines.

Locality not stated. A single specimen taken.

## DESCRIPTION.

Body very black, glossy. Antennæ longer than the prothorax: prothorax of the same width before and behind so as to appear more square than in the preceding species; its lateral margin at the base is likewise not reflexed, the dorsal channel is slight, and the disk is minutely and transversely wrinkled; the basilar impressions are deep, large, and circular: elytra very slightly bronzed; three punctiform impressions, the anterior one adjoining the third furrow, and the two posterior the second, are visible in the usual situation: the four anterior trochanters are of a deep red.

(32) 8. \* AGONUM ERYTHROPUM. *Red-legged Agonum.*

*A. (erythropum) nigrum, nitidum, supra nigro-æneum; prothorace postice angustiori; elytris trifoveolatis; pedibus rufescentibus.*  
Red-legged Agonum, black, glossy, above bronzed; prothorax narrower behind; elytra with three punctiform impressions; legs dusky rufous.

Length of the body  $4\frac{1}{4}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body glossy, black underneath, above bronzed. Antennæ black with the scape dusky rufous; prothorax tinted with copper, obcordate with rounded angles; basilar impressions round and deep; elytra tinted with copper, with three nearly obsolete punctiform impressions in the usual situation; legs dusky rufous; in other respects it resembles *A. seminitidum*.

This species appears to be the American representative of *A. parumpunctatum*. It is, however, larger, more bronzed, the impressions are less distinct and more distant, and the thighs as well as the tibiæ and tarsi are rufous.

(33) 9. AGONUM CUPRIPENNE. (De Jean.) *Copper-winged Agonum.*

*A. cupripenne.* De J. *Coléopt.* iii, 139, 6.  
— *formosum.* Sturm. *Cat.* 89.  
*Feronia cupripennis.* Say. *Amer. Trans. N. S.* ii, 50, 26.  
*Carabus metallicus.* Melsh. *Cat.*

## PLATE I, FIG. 4.

Length of the body  $4-4\frac{1}{2}$  lines.

Many specimens of this lovely *Agonum* were taken in Lat. 54°. It appears to be very common in North America, where it represents *A. sexpunctatum*, the most brilliant of our European species, but which *A. cupripenne* far exceeds in beauty.

## DESCRIPTION.

Body glossy, underneath black with a slight shade of green, especially on the head and breast. Head above of a fine green, glossy, smooth with the usual frontal impressions; mouth, excluding the upper-lip and palpi, rufous; antennæ longer than the prothorax, black, scape tinted with green; prothorax green, channelled, basilar impressions rather deep; scutellum green; elytra<sup>4</sup> lightly furrowed, furrows impunctured, three (four?) minute equidistant punctiform impressions, in the usual situation, the anterior one adjacent to the third furrow, and the two posterior ones to the second; as to colour these organs are of a fine cupreous purple, with the base and sides of a lovely green; legs black with the four anterior trochanters and the base of the posterior, rufous.

In the male the posterior trochanters are entirely black.

<sup>4</sup> Plate I, Fig. 4 a.

Family CALATHIDÆ. *Calathidans.*

XII. Genus CALATHUS. Bonell.

(34) 1. CALATHUS GREGARIUS. (De Jean.) *Gregarious Calathus.*Calathus gregarius. De J. *Coléopt.* iii, 76, 13.Carabus gregarius. Melsh. *Cat.*Feronia gregaria. Say. *Amer. Trans. N. S.* ii, 47, 21.Length of the body  $4\frac{1}{2}$  lines.

Taken frequently in Lat. 54°.

## DESCRIPTION.

Body glossy, rufo-piceous underneath, above nigro-piceous. Palpi and antennæ pale testaceous: prothorax quadrangular with the angles rounded; anteriorly emarginate; channelled; basilar impressions slight; lateral margin rufous dilated posteriorly: elytra furrowed, furrows impunctured; four punctiform impressions between the second and third furrows, the three anterior ones adjacent to the latter, and the posterior one to the former: legs pale testaceous. This genus is distinguished from the following one by having its claws pectinated.

Family PÆCILIDÆ. *Pæcilidans.*

XIII. Genus PLATYDERUS. Steph.

(35) 1. \* PLATYDERUS NITIDUS. *Glossy Platyderus.**P. (nitidus) ater, nitidus; antennis piceis: scapo rufo; pedibus testaceis; elytris sulcatis foveolis duabus impressis.*

Glossy Platyderus, black, glossy; antennæ piceous with a rufous scape; legs testaceous: elytra deeply furrowed with two punctiform impressions.

PLATE I, FIG. 5.

Length of the body 4 lines.

Three specimens, all females, taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Head triangular; mouth piceous; antennæ rather longer than the prothorax, piceous with the terminating joints paler, scape rufous: prothorax subquadrangular with the posterior angles rounded, emarginate at the base, as well as at the apex, slightly channelled, with a pair of linear basilar impressions on each side, the external one being oblique and the other longitudinal: elytra rather deeply furrowed with two punctiform impressions, in the usual situation; viewed in the sun, the elytra exhibit changeable shades of blue and bronze: forebreast piceous: legs clear testaceous.

XIV. Genus ARGUTOR.<sup>5</sup> Meg.(36) 1. \* ARGUTOR BICOLOR. *Two-coloured Argutor.*

*A. (bicolor) nitidus, supra niger, subtus, antennis, pedibusque brunneis; prothorace toto lævi utrinque sulculo impresso; elytris trifoveolatis.*

Two-coloured Argutor, glossy, above black; underneath, antennæ and legs, mahogany-coloured; prothorax impunctured with a little furrow impressed on each side; elytra with three punctiform impressions.

Length of the body 3 lines.

Taken twice in Lat. 54°.

## DESCRIPTION.

Body glossy, above black, beneath mahogany-coloured. Antennæ, and palpi at the base, dark mahogany-colour: prothorax longer than wide, rather narrowest at the base where it is slightly sinuated, anterior angles rounded, without punctures, dorsal channel slight; a deep short basilar furrow on each side: elytra slightly furrowed with impunctured furrows, the seventh from the suture obsolete; in the interstice between the second and third are three punctiform impressions, the anterior one adjoining the latter, and the two posterior ones the former.

This species approaches very near to *A. erythropus* De Jean,<sup>6</sup> but it is smaller, and the posterior angles of the prothorax are not rounded. The underside of the body, the legs, and antennæ are all of the same colour, sometimes a little darker, at others a little paler.

(37) 2. \* ARGUTOR FEMORALIS. *Black-thighed Argutor.*

*A. (femoralis) nitidissimus, ater; antennis scapo, tibiis tarsisque piceis; prothorace toto lævi, utrinque basi sulculo impresso; elytris trifoveolatis, striatis: striis antice subpunctatis.*

Black-thighed Argutor, very black and glossy; scape of the antennæ, tibiæ and tarsi, piceous; prothorax impunctured, on each side at the base with a little furrow; elytra with three punctiform impressions, furrowed, furrows anteriorly slightly punctured.

Length of the body 3½ lines.

Taken in Lat. 54°.

## DESCRIPTION.

This species approaches very near to the preceding one, and its place is between that and *A. vernalis*, of which last it is the American representative. It differs from *A. bicolor* chiefly in having only the scape of the antennæ and the tibiæ and tarsi of a different colour from the rest of the body and in having the anterior half of the furrows of the elytra slightly punctured; and from the latter in having the prothorax narrower at the base, with only a single impunctured impression on each side.

<sup>5</sup> This genus, or subgenus, the species of which are usually minute and inhabit moist places, differs chiefly from *Pacilus* in having the third joint of the antennæ longer than the fourth, without any ridge, and in the basilar impressions of the prothorax being mostly single.

<sup>6</sup> *Coléopt.* iii, 243, 33.

(38) 3. \* ARGUTOR MANDIBULARIS. *Mandibular Argutor.*

*A. (mandibularis) nitidus, subtus niger, supra nigro-æneus; mandibulis, palpis, pedibus, antennisque scapo, rufis; prothorace obcordato, postice utrinque sulculo impresso; elytris bifoveolatis, striatis: striis punctatis.*

Mandibular Argutor, glossy, underneath black, above black-bronzed; mandibles, palpi, legs, and scape of the antennæ, rufous; prothorax obcordate, with a basilar furrow on each side; elytra with two punctiform impressions, furrowed, furrows punctured.

Length of the body  $3\frac{1}{2}$  lines.

Taken in Lat. 54°.

## DESCRIPTION.

Body glossy, underneath black, above black-bronzed. Mandibles, palpi, scape of the antennæ, and legs rufous, or rather pale-chestnut; frontal impressions rather wide: prothorax truncato-obcordate, with a basilar furrow on each side and a few punctures at the posterior angles: elytra lightly furrowed with punctures in the furrows; two punctiform impressions in the usual situation, one a little beyond the middle of the elytrum adjacent to the second furrow, and the posterior one near the apex adjacent to the third.

VARIETY B. Black above with the whole antennæ rufous, elytra piceous. Perhaps an immature specimen.

(39) 4. \* ARGUTOR BREVICORNIS. *Short-horned Argutor.*

*A. (brevicornis) ater nitidus, antennis masculis prothorace brevioribus pedibusque rufis; prothorace obcordato basi utrinque sulculo impresso; elytris trifoveolatis striatis: striis punctatis.*

Short-horned Argutor, glossy, very black, male antennæ shorter than the prothorax, and the legs rufous; prothorax obcordate, with a little basilar furrow on each side; elytra with three punctiform impressions; furrowed, furrows punctured.

PLATE VIII, FIG. 3.

Length of the body 3 lines.

Taken in Lat. 65°.

## DESCRIPTION.

This with the preceding species, in the shape of the prothorax, which is obcordate, departs a little from the others. *A. brevicornis* resembles *A. mandibularis* in many respects, but the body is black, as are also the mandibles and palpi; the antennæ of the male are shorter, and those of the female not longer, than the prothorax; one of these organs in the latter sex, in the only female specimen taken, appears to have been affected by some disease, for the two last joints are larger than the preceding ones, so as to form a kind of knob; it is the right-hand antenna that is so circumstanced: the little furrows at the base of the prothorax are wider than in *A. mandibularis*; the elytra of the male have three, and those of the female four, punctiform impressions all adjacent to the third furrow. The eight last joints of the antennæ in this species have less down and shine more than is usual with the ground-beetles in general.

## XV. Genus OMASEUS. Zieg.

(40) 1. OMASEUS ORINOMUM. (Leach.) *Mountain Omaseus*.

*Omaseus orinomum*. Leach. *MS*. Curtis. *Brit. Ent.* i, 15. Steph. *Illustr. Mandib.* i, 114, 3, t. vii, f. 3.

Length of the body  $5\frac{1}{2}$  lines.

Taken frequently in Lat.  $54^{\circ}$ . and  $65^{\circ}$ .

## DESCRIPTION.

Body oblong, glossy, black. Head rather ovate, underneath in some specimens chestnut, in others black; palpi piceous; prothorax subcordate rather longer than wide; a deep, punctured, basilar impression on each side; posterior margin slightly sinuate; elytra subacuminate, lightly furrowed with from four to six largish impressions in the second and third furrows, the first usually being in the third and the second on the second furrow, but the others occasionally varying; the natural number of these impressions seems to be five; legs black with piceous tarsi.

VARIETY B. Legs chestnut.

C. Tibiæ and tarsi chestnut.

From the number of specimens collected in the Expedition I should conjecture this to be one of the most common of North American insects. It appears, however, not to have been noticed by Say, nor was it amongst those collected by Dr. Bigsby in Canada, or by Dr. Mac Culloch and Captain Hall in Nova Scotia.

(41) 2. OMASEUS NIGRITA. (Curtis.) *Negro Omaseus*.

*Omaseus Nigrita*. Curtis *Brit. Ent.* i, 15. Steph. *Illustr. Mandib.* i, 114, 5.

*Carabus Nigrita*. Payk. *Mon. Car.* 79. *Fn. Suec.* i, 157, 77. Panz. *Fn. Germ.* xi, 11.

——— *aterimus*. Marsh. *Ent. Brit.* i, 444, 30.

*Harpalus Nigrita*. Gyllenb. *Ins. Suec.* ii, 88, 8.

*Platysmus Nigrita*. Sturm. *Deutsch. Fn.* v, 64, 16.

Length of the body  $5\frac{1}{4}$  lines.

## DESCRIPTION.

Body very black and glossy. Frontal impressions nearly straight; palpi, scape, and summit of the antennæ, piceous; prothorax subcordate; rather deeply channelled; basilar impressions large, punctured, in each are two little abbreviated furrows and a ridge adjoining the margin; the base itself has a slight sinus; elytra very deeply furrowed, furrows very indistinctly punctured; three minute punctiform impressions in the usual situation, the anterior one adjoining the third and the two posterior ones the second furrow: legs dark piceous: ventral segments of the abdomen minutely wrinkled on each side: on the sides of the breast are some scattered punctures.



In the European specimens the legs are black; the ridge between the basilar impression and the margin is less prominent; amongst the wrinkles on each side the ventral segments there are punctures; the sides of the breast also are more thickly and grossly punctured. There is, however, an apterous specimen of an American female, which agrees with the British ones in these respects.

The *Carabus Nigrita* of Paykull, is clearly synonymous with the species known by that name in Britain, and of which I have received Swedish specimens by the kindness of Major Gyllenhal. Mr. Marsham appears to have mistaken it for a very different and larger species (*O. aterrimus*<sup>7</sup>) concerning which Paykull observes<sup>8</sup> that it differs from *O. Nigrita* in having the impressions on the elytra visible to the naked eye, while in the latter they are not to be discerned but under a lens. It is clear that *Carabus Nigrita* of Fabricius<sup>9</sup> is a distinct species, synonymous according to him with *C. nigro-striatus* of De Geer, and *C. striatus* of Paykull, mistaken by several authors for *C. leucophthalmus* of Linné; Fabricius also refers to Paykull's *C. striatus* under *C. niger* (*Platysma niger* Steph.)

I have likewise excluded the synonym of De Jean, for he describes his *Feronia* (*Omasus*) *Nigrita*, as having the two longitudinal impressions on each side of the base of the prothorax almost entirely effaced, and the posterior angles as not discernible except under a powerful magnifier; and the male as having on the last ventral segment of the abdomen an elevated point;<sup>1</sup> none of which characters are to be found in *O. Nigrita*.

(42) 3. \* OMASEUS PICICORNIS. *Pitch-horned Omasus.*

*O. (picicornis) ater, nitidus; palpis antennisque nigro-piceis, prothoracis foveis posticis unisulcis punctatis carinula nulla; antepectore lævi; elytris trifoveolatis.*

Pitch-horned Omasus, very black, glossy; palpi and antennæ nigro-piceous; basilar impressions of the prothorax punctured, once furrowed and without any little ridge; forebreast impunctured; elytra with three punctiform impressions.

Length of the body  $5\frac{1}{2}$  lines.

Taken with the preceding species?

DESCRIPTION.

This species differs from *O. Nigrita*, which it greatly resembles, in having the first three joints of the antennæ nearly black, the rest being paler: the prothorax is rather longer in proportion and less constricted at the base; the basilar impressions have only one well-defined furrow, and no little ridge intervenes between them and the margin; the antepectus is without any punctures: the legs are piceous with black thighs.

<sup>7</sup> Curtis *Brit. Ent.* i, t. xv. Steph. *Illustr.* i, 113, 1.

<sup>9</sup> *Ent. Syst.* i, 200, 164.

<sup>8</sup> *Fn. Suec.* i, 157, 76.

<sup>1</sup> *Coléopt.* iii, 284, 78.

## XVI. \* Genus STEREOCERUS.

*Labrum* transverse, scarcely emarginate.

*Palpi, maxillary* with the second joint subcylindrical, the third obconical, in the male as long as the last, in the female longer, the last subcylindrical truncated at the apex.

— *labial* with the last joint subcylindrical truncated at the apex.

*Labium* emarginate with a short entire tooth in the notch.

*Antennæ* robust, with the third joint a little longer than the rest, suddenly incrassated at the summit; the fourth clavate; the following ones compressed and subcampanulate; the last ovate.<sup>2</sup>

Body rather narrow. Head somewhat orbicular; frontal impressions oblique: prothorax nearly as long as wide, rather narrowest at the base, truncated before and behind; dorsal channel not abbreviated; lateral margin reflexed, depressed posteriorly; basilar impressions with a double furrow, anterior angles rounded, posterior rather acute: scutellum acutaingular: elytra parallel, subsinuated at the apex: hand of the male with the three first joints dilated and triangular.

This genus, or subgenus, appears to connect those that have robust antennæ, as *Omaseus*, &c. with those that have those organs more slender, as *Pæcilus*, &c. Its general aspect is that of *Curtonotus*, but the intermediate tooth of the labium (*Mentum Latr.*) is entire as in *Bradytus*: the penultimate joint of the palpi in the male is as long as the last, which in the first of these genera is longer and in the second shorter; the last joint is more cylindrical and consequently more widely truncated at the summit than in either.

(43) I. \* STEREOCERUS SIMILIS. *Similar Stereocerus.*

*S. (similis) piceo-niger, nitidus; antennis pedibusque castaneis; elytris æneo-piceis; occipite punctulato.*

Similar *Stereocerus*, piceous-black, glossy; antennæ and legs chestnut; elytra piceous tinted with bronze; occiput minutely punctured.

PLATE VIII, FIG. 1.

Length of the body  $5\frac{1}{4}$  lines.

A pair were taken in Lat. 54°.

## DESCRIPTION.

Body of a piceous-black, glossy. Palpi piceous; antennæ chestnut; frontal impressions deep, rather curving; occiput punctured with scattered punctures: prothorax nearly square with curved sides; basilar impressions wide, punctured, deeply bisulcate, with an elevated little ridge between them and the margin: elytra bronzed, furrowed, furrows scarcely punctured: legs pale chestnut.

In the female the elytra are not bronzed, the legs are darker, and the terminal joint of the palpi is longer.

<sup>2</sup> Plate VIII, Fig. 1 a.

XVII. Genus? CURTONOTUS.<sup>3</sup> Steph.(44) 1. CURTONOTUS CONVEXIUSCULUS. (Stephens.) *Convex Curtonotus*.

*Curtonotus convexiusculus*. Steph. *Illustr. Mandib.* i, 138, 1, t. viii, f. 1.

*Carabus convexiusculus*. Marsh. *Ent. Brit.* i, 462, 82.

Length of the body  $5\frac{1}{4}$  lines.

Taken in Lat. 65°<sup>3</sup>

## DESCRIPTION.

Body dark piceous, sometimes a little bronzed. Antennæ and palpi rufous; frontal impressions short connected by a rather deep furrow: prothorax constricted and punctured at the base, depressed on each side; basilar impressions bisulcate; posterior angles acute, recurved: elytra furrowed, furrows punctured: sides of the ventral segments of the abdomen somewhat punctured and wrinkled, those of the mid-breast grossly punctured: legs chestnut.

(45) 2. \* CURTONOTUS RUFIMANUS. *Red-handed Curtonotus*.

*C. (rufimanus) nigro-piceus, nitidus; antennis, palpis, manibusque rufis.*

Red-handed *Curtonotus*, dark-piceous, glossy; antennæ, palpi, and hands rufous.

Length of the body 5 lines.

Several taken in Lat. 54°.

## DESCRIPTION.

This is extremely similar to the species last described, from which it principally differs in having the legs of the colour of dark pitch, with the exception of the hands or anterior tarsi, which are rufous: the sides of the ventral segments of the abdomen also appear less conspicuously punctured.

(46) 3. \* CURTONOTUS BREVILABRIS. *Short-lipped Curtonotus*.

*C. (brevilabris) nigro-piceus; labro brevi transverso; antennis palpisque rufis; elytris pedibusque castaneis.*

Short-lipped *Curtonotus*, dark-piceous; upper-lip short, transverse; antennæ and palpi rufous; elytra and legs chestnut.

Length of the body  $4\frac{1}{3}$  lines.

A single specimen taken in Lat. 65°.

<sup>3</sup> At first sight *Curtonotus* appears merely a subgenus of *Bradytus* Steph., but the notch in the intermediate tooth of the labium, and the dentated intermediate tibiæ of the male seem to afford good ground for considering them as distinct genera.

## DESCRIPTION.

Like the preceding species but smaller: the upper lip is blacker, not half so long and slightly emarginate: the elytra are dark and the legs pale chestnut; the furrows of the former are less conspicuously punctured: the frontal impressions likewise are longer and connected by a slighter furrow.

(47) 4. \* *CURTONOTUS LATIOR.* *Broad Curtonotus.*

*C. (latior) brevis, piceus; supra æneo-tinctus; labro, antennis, palpis, epipleuris, pedibusque rufis; naso sinu obtusangulo; prothorace transverso.*

Broad Curtonotus, short, piceous, above bronzed; upper-lip, antennæ, palpi, side-covers, and legs rufous; nose with an obtusangular sinus; prothorax transverse.

Length of the body 5 lines.

One specimen only taken.

## DESCRIPTION.

This species has a good deal the aspect of *Bradytus apricarius*, but it is a larger insect and rather wider in proportion; and the bifid intermediate tooth of the lower lip proves that it is a true *Curtonotus*. Body piceous, above bronzed. Upper-lip, palpi, antennæ, side-covers, and legs all rufous, nose at the anterior margin has an obtusangular sinus; frontal impressions punctiform connected by a slightly-drawn line or furrow: prothorax wider than long, the lateral margins forming a segment of a circle without any posterior constriction; at the base the prothorax is depressed, the basilar impressions are bisulcate, the inner furrow being the longest: furrows of the elytra punctured.

## XVIII. Genus PÆCILUS. Bonell.

(48) 1. PÆCILUS LUCUBLANDUS. (De Jean.) *Lucubland Pæcilus*.<sup>4</sup>

*Feronia lucublanda.* Say. *Amer. Trans. N. S.* ii, 55, 36.

—— (*Pæcilus*) *lucublanda.* De J. *Coléopt.* iii, 212, 6.

*Carabus lucublandus.* Melsh. *Cat.*

*Pæcilus similis* De J. *Cat.* 11.

Length of the body 5 lines.

Many specimens taken in Lat. 54°.

<sup>4</sup> I suppose the trivial name of this species, *lucublandus*, is derived from *lucus* and *blandus*, an untranslatable epithet, I have therefore given it an English termination.

## DESCRIPTION.

This species is nearly related to *P. cupreus*, and is its American representative; but it differs from it in several important characters. Body glossy, underneath black, above bronzed. Head not punctured; frontal impressions nearly round; three first joints of the antennæ rufous, with the longitudinal ridge on the third, which distinguishes the species of this genus, black, the rest of the antennæ is black: prothorax with a slight shade of green, channelled, somewhat depressed at the base; disk transversely wrinkled; lateral margin dilated posteriorly; basilar impressions double, the exterior one punctiform, the interior longitudinal: elytra with a shade of copper, deeply furrowed; furrows scarcely punctured with convex interstices, and four punctiform impressions between the second and the third, all adjacent to the latter: sides of the ventral segments of the abdomen wrinkled and punctured, those of the breast grossly punctured: legs dark chestnut.

VARIETY. B. With the legs and palpi ferruginous, furrows indistinctly punctured.

C. With the furrows of the elytra distinctly punctured.

D. Entirely black with the sides of the prothorax impunctured, elytra violet.

(49) 2. \* PÆCILUS CASTANIPES. *Chestnut-footed Pæcilus.*

*P. (castanipes) ater, nitidus; prothorace postice leviter foveato vix punctulato; elytris striatis: striis levibus, trifoveolatis.*  
Chestnut-footed Pæcilus, black, glossy; prothorax with slight basilar scarcely punctured impressions; elytra lightly furrowed; furrows impunctured, with three punctiform impressions.

Length of the body  $5\frac{1}{2}$  lines.

One specimen only taken.

## DESCRIPTION.

This species differs from variety D of *P. lucublandus*, which it much resembles, in being entirely black; in having slighter basilar impressions less distinctly punctured: it has likewise only three punctiform impressions on the elytra, the granular reticulations of the substance of which are also more easily discovered.

(50) 3. PÆCILUS CHALCITES. (De Jean.) *Bronzed Pæcilus.*

*Feronia (Pæcilus) chalcites.* De J. *Coléopt.* iii, 211, 5.  
—— *chalcites.* Say. *Amer. Trans. N. S.* ii, 56, 37.  
*Carabus chalcites.* Melsh. *Cat.*

Length of the body 5 lines.

Only a single specimen taken.

## DESCRIPTION.

This species appears to be related to *P. lucublandus*, but it is narrower in proportion, the upper surface of the body is of a changeable colour, green or copper, "as the site varies in the gazer's hand." The basilar impressions of the prothorax are green and blue and more grossly and distinctly punctured; the lateral margin is not dilated posteriorly or depressed, as in the other *Pæcili*: the sides of the elytra are green, their furrows are more distinctly punctured than even those of *P. cupreus*, and they exhibit only two punctiform impressions, both beyond the middle of the elytrum: the legs are black.

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 Family AMARIDÆ. *Amaridans.*

## XIX. Genus AMARA. Bonell.

(51) I. AMARA VULGARIS. (Latreille.) *Common Amara.*

*Amara vulgaris.* Latr. *Crustac. Arachn. and Ins.* i, 192. De J. *Cat.* 9; *Coléopt.* iii, 463, 5. Sturm *Deutsch. Fn.* i, 48, 26. Steph. *Illustr. Mandib.* i, 128, 5.

*Carabus vulgaris.* Linn. *Fn. Suec.* 799; *Syst. Nat.* i, 672, 27. Fab. *Syst. Eleuth.* i, 195, 37. Illig. *Kaf. Preuss.* 167, 33. Marsh. *Ent. Brit.* i, 438, 16.

——— *dispar.* Payk. *Fn. Suec.* i, 167, 88.

——— *ovatus.* Ross. *Fn. Etrusc.* i, 89, 200.

——— *Var. δ,* Payk. *Mon. Car.* 132, 81.

*Harpalus vulgaris.* Gyllen. *Ins. Suec.* ii, 138, 48; iv, 444, 48.

Length of the body 4—4½ lines.

Many specimens taken in Lat. 65°. and in the Rocky Mountains.

## DESCRIPTION.

Body black, glossy; above black-bronzed. Scape of the antennæ piceous; inner lobe of the maxillæ, and first joint of the outer palpi, testaceous; basilar impressions of the prothorax double, deepish, impunctured, the external one oblique; channel abbreviated anteriorly, with a punctiform impression beyond the middle: furrows of the elytra lightly drawn, indistinctly punctured; apex subacuminate or suddenly narrowed: legs black with the hairs, spurs, and claws, testaceous.

VARIETY B. Bright, bronzed with a cupreous tint.

C. Wholly black.

(52) 2. \* AMARA INÆQUALIS. *Unequal Amara.*

*A. (inæqualis) nigra, nitida, supra nigro-ænea; antennis articulis duobus primis rufis; prothorace postice utrinque bisulco; elytris striarum interstitiis inæqualibus.*

Unequal Amara, black, glossy; above black-bronzed; two first joints of the antennæ rufous; prothorax at the base with two furrows on each side; interstices of the furrows of the elytra uneven.

Length of the body 4 lines.

Several taken in Lat. 54°.

## DESCRIPTION.

Very like *A. vulgaris*, but the *two* first joints of the antennæ are rufous; the basilar impressions of the prothorax are not so deep; and the interstices of the furrows of the elytra are convex and uneven, in other respects there is little difference between them.

(53) 3. AMARA IMPUNCTICOLLIS. (K.) *Smooth-necked Amara.*

*Feronia impuncticollis.* Say. *Amer. Trans. N. S.* ii, 36, 3.

Length of the body 4 lines.

Taken in Lat. 54°.

## DESCRIPTION.

This differs from its two predecessors principally in having the *three* first joints of the antennæ nearly yellow: the tibiæ and tarsi also are dark piceous, as are likewise the clavicles or anterior coxæ, and the trochanters: the interstices of the furrows of the elytra are plane.

(54) 4. \* AMARA PALLIPES. *Pale-legged Amara.*

*A. (pallipes) nitida; subtus picea, supra nigro-ænea; antennis basi rufis; prothorace postice bifoveolato: foveolis punctatis pedibus flavescens.*

Pale-legged Amara, glossy; underneath piceous, above black-bronzed; antennæ rufous at the base; basilar impressions of the prothorax punctiform, double, punctured; legs yellowish.

Length of the body 3 lines.

Only one specimen taken.

## DESCRIPTION.

Body glossy; underside, mandibles, coxæ, and tarsi piceous; upperside bronzed. Three first joints of the antennæ rufous; frontal impressions very slight, connecting line very distinct: dorsal channel of the prothorax nearly entire; basilar impressions rather punctiform, punctured: elytra not subacuminatè: legs yellowish.

(55) 5. \* AMARA LÆVIPENNIS. *Smooth-winged Amara.*

*A. (lævipennis) nitida, supra nigro-ænea; prothorace foveolis basilaribus subobsoletis; elytris substriatis: striis minutissime et vix conspicue punctulatis.*

Smooth-winged Amara, glossy; above black bronzed; basilar impressions of the prothorax almost obliterated; elytra very slightly furrowed: furrows very minutely and scarcely conspicuously punctured.

Length of the body  $3\frac{1}{2}$  lines.

Three or four specimens taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body glossy; the underside, legs, and antennæ black; upperside black-bronzed: frontal impressions very slight; prothorax smooth with the basilar impressions very faint; furrows of the elytra very lightly drawn, and sometimes subinterrupted: intermediate trochanters piceous.

(56) 6. \* AMARA DISCORS. *Discordant Amara.*

*A. (discors) picea, nitida; ore, antennis, thoracis margine laterali, pedibusque ferrugineis; elytris obscurioribus striatis: striis obsolete crenulatis.*

Discordant Amara, piceous, glossy; mouth, antennæ, lateral margin of the prothorax, and legs ferruginous; elytra rather obscure, furrowed; furrows very obsoletely crenulated.

Length of the body 4 lines.

One specimen only taken.

## DESCRIPTION.

This species has somewhat the aspect of a *Harpalus*, but it exhibits the true characters of *Amara*: it appears to be related to *A. discrepans* of Mr. Stephens.<sup>5</sup> Body dark piceous, glossy. Upper-lip, palpi, mouth, and antennæ ferruginous: prothorax a little narrowed behind; bead of the lateral margin rufous; basilar impressions rather slight: elytra less glossy than the rest of the body, the infinitely minute and numerous granular reticulations of their substance being more conspicuous than usual; the furrows of the elytra from minute punctures exhibit a slight appearance of crenulations: legs pale chestnut.

<sup>5</sup> *Illustr. Mandib.* i, 131, 13.



♂ QUADRIANA. Lat.

Family HARPALIDÆ. *Harpalidans.*

XX. Genus HARPALUS. Lat.

(57) 1. \* HARPALUS PLEURITICUS. *Pleuritic Harpalus.*

*H. (pleuriticus) niger, nitidus; palpis, antennis, pedibus, prothoracis margine laterali, epipleuraque elytrorum, fulvescentibus.*  
Pleuritic Harpalus, black, glossy; palpi, antennæ, legs, lateral margin of the prothorax, and side-covers of the elytra, tawny-yellow.

Length of the body  $4\frac{1}{2}$  lines.

Taken frequently in Lat. 54°.

DESCRIPTION.

Body black, glossy. Frontal impressions punctiform; upper-lip piceous, with the lateral and anterior margin paler; palpi and antennæ tawny-yellow; the latter shorter than the prothorax, with all the joints, the scape excepted, which is the longest and thickest, nearly of equal length: prothorax nearly square with all the angles rounded, wider than long; basilar impressions oblong, punctured, each intermediate between the dorsal channel and the margin, which last is tawny-yellow: elytra rather less glossy than the head and thorax, somewhat piceous; furrows of the elytra impunctured; a single rather obsolete punctiform impression is observable in the second furrow near the apex of the elytrum, which is slightly sinuated; side-covers and legs tawny-yellow.

This species is related to *H. tardus* and its affinities, but quite distinct.

(58) 2. \* HARPALUS BASILARIS. *Basilar Harpalus.*

*H. (basilaris) niger, depressus; antennis fuscis basi flavis; elytris castaneo-nigris.*  
Basilar Harpalus, black, depressed; antennæ dusky-yellow at the base; elytra chestnut-black.

Length of the body 4 lines.

Taken with the preceding and in equal numbers.

DESCRIPTION.

This species differs from the preceding, which it nearly resembles, in having the two first joints of antennæ yellow, and the remainder dusky; in having the prothorax still wider in proportion to its length, with its posterior angles more acute and impunctured, and with narrower basilar impressions also without punctures; its lateral margin is also black and less prominent: the side-covers of the elytra are likewise black: the legs are dark-piceous, with yellowish-red trochanters. In other respects it resembles *H. pleuriticus*.

(59) 3. \* *HARPALUS OCHROPUS.* *Ochre-legged Harpalus.*

*A. (ochropus) niger, nitidus; prothorace lævi profundius canaliculato; margine laterali, antennis prothoracis longitudine, pedibusque, fulvis.*

Ochre-legged Harpalus, black, glossy; prothorax impunctured, rather deeply channelled; with the lateral margin, antennæ, which are as long as the prothorax, and legs, tawny.

Length of the body  $3\frac{1}{2}$  lines.

## DESCRIPTION.

This comes very near to *H. pleuriticus*, but is considerably smaller; the antennæ are longer; the prothorax is impunctured at the base, its basilar impressions are linear; the side-covers of the elytra are chestnut; and its thighs are more robust in proportion.

(60) 4. \* *HARPALUS INTERPUNCTATUS.* *Interpunctured Harpalus.*

*H. (interpunctatus) ater, nitidus: antennis scapo, palpisque apice, rufescentibus; prothorace punctulato disco lævi, postice leviter at late foveato; elytris subsulcatis, interstitiis minutissime punctulatis.*

Interpunctured Harpalus, black, glossy; antennæ with the scape and last joint of the palpi rufescent; prothorax punctured with the disk smooth; basilar impressions shallow but wide; elytra rather deeply furrowed, with the interstices of the furrows very minutely punctured.

PLATE VII. FIG. 8.

Length of the body  $5\frac{1}{2}$  lines.

Many taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body proportionally longer than in the antecedent species, black, glossy, not depressed. Head triangular with a pair of confluent red dots, visible only in the sun, between the eyes; antennæ shorter than the prothorax, with the scape and last joint of the palpi rufous: prothorax subquadangular; anterior angles rounded; dorsal channel drawn from the apex to the base; punctured especially posteriorly, disk impunctured transversely wrinkled; basilar impressions shallow; lateral margin dilated posteriorly: elytra rather deeply furrowed, furrows impunctured, interstices convex, very minutely but not thickly punctured: the four anterior tarsi of the male, as was observed before,<sup>6</sup> are furnished with a thick brush of vesicles, not arranged in a double series, as in other species of the genus, but resembling, in this respect, the sarrothropodous *Geadephaga*,<sup>7</sup> except that the brush is not formed of hairs.

<sup>6</sup> See above, p. 3.

<sup>7</sup> Ibid.

(61) 5. \* HARPALUS LONGIOR. *Longer Harpalus.*

*H. (longior) oblongus, niger, antennis, palpis, pedibusque, rufo-fulvis; naso apice membranaceo; prothorace postice punctulato; elytris longiusculis striarum lateralium interstitiis obsolete punctulatis.*

Longer Harpalus, oblong, black; antennæ, palpi, and legs rufo-fulvous; apex of the nose membranous; prothorax punctured behind; elytra rather long with the interstices of the lateral furrows obsoletely punctured.

Length of the body  $5\frac{1}{4}$ — $7\frac{1}{3}$  lines.

Two specimens taken, the largest in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body black. Upper-lip piceous; antennæ, palpi, and legs reddish-tawny, the first longer than the prothorax; the nose terminates anteriorly in a reddish membrane or rhinarium: prothorax quadrangular with all the angles rounded, rather longer than wide; dorsal channel anteriorly abbreviated; lateral margin minutely punctured, much depressed, especially at the posterior angles; basilar impressions double, shallow, and minutely punctured: elytra very little glossed, more than twice the length of the prothorax, furrows impunctured with convex interstices, the lateral ones with some scattered very minute punctures; the vesicles on the sole of the four anterior tarsi of the male are arranged as in the other *Harpali*.

Both the specimens taken in the Expedition are males, or I should have supposed the unusual difference in their size was sexual, probably the small one was taken in a higher latitude.

(62) 6. \* HARPALUS LATICOLLIS. *Wide-necked Harpalus.*

*H. (laticollis) ater, nitidus; palpis apice antennisque basi rufis; prothorace lato, postice obsolete punctulato et foveato; elytris subsulcatis interstitiis convexis lævibus, foveola unica.*

Wide-necked Harpalus, very black, glossy; apex of the palpi and base of the antennæ rufous; prothorax wide, at the base obsoletely punctured and impressed; elytra furrowed with convex impunctured interstices, and a single punctiform impression.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken.

## DESCRIPTION.

This insect very closely resembles *H. interpunctatus*; it differs principally in having a rather wider prothorax with all the angles rounded, with the dorsal channel abbreviated anteriorly, and with only the base very indistinctly punctured: the interstices of the furrows of the elytra are also without punctures, and there is a single punctiform impression in the usual situation adjacent to the second furrow.

(63) 7. *HARPALUS CARBONARIUS*. (Say.) *Coal-black Harpalus*.

*Harpalus carbonarius*. Say. *Amer. Trans. N. S.* ii, 82, 13.

*Carabus carbonarius*. Melsh. *Cat.*

Length of the body 6 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body depressed, black, rather glossy. Last joint of the palpi and margin of the upper-lip rufous; antennæ as long as the prothorax, scape rufous with a black spot above: prothorax like that of the preceding species, but more widely depressed, at the posterior angles: elytra without any gloss, slightly furrowed; furrows impunctured; two very minute punctiform impressions in the usual situation beyond the middle of the elytrum adjoin the second furrow. The opacity of the elytra is produced by the innumerable granules of their surface, common in this tribe, being more than usually conspicuous.<sup>8</sup>

(64) 8. \* *HARPALUS ROTUNDICOLLIS*. *Round-necked Harpalus*.

*H. (rotundicollis) nigricans, nitidus; palpis apice, antennisque, rufis; prothorace angulis rotundatis postice subfoveato; elytris subsericeis.*

Round-necked Harpalus, brownish-black, glossy; antennæ and apex of the palpi rufous; prothorax with all the angles rounded, basilar impressions slight; elytra with somewhat of a silky lustre.

Length of the body  $5\frac{1}{3}$  lines.

Two specimens taken.

## DESCRIPTION.

Body brownish, black, glossy, Antennæ length of the prothorax, and as well as the tip of the palpi, rufous: prothorax wider than long with rounded angles; basilar impressions shallow, round, and punctured: the elytra exhibit a silky lustre from the granulations mentioned in the description of the last species; there is a single punctiform impression in the usual situation nearer the apex; in this and the following species these organs are transversely truncated with a slight sinuosity: legs rufous or rufo-piceous with black thighs; coxæ and trochanters rufous.

<sup>8</sup> See above, p. 7.

(65) 9. \* HARPALUS STEPHENSII. *Stephens' Harpalus.*

*H. (Stephensii) ater, nitidissimus; antennis ferrugineis; prothorace nigro-æneo: angulis rotundatis; elytris æneis subsulcatis apice transversis integris; pedibus piceis.*

Stephens' Harpalus, very black, very glossy; antennæ ferruginous; prothorax black-bronzed with rounded angles; elytra bronzed, rather deeply furrowed, transverse and entire at the apex; legs piceous.

Length of the body  $4\frac{1}{2}$  lines.

A single specimen taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body black and very glossy. Head very smooth with the usual frontal impressions; antennæ rufous with the basilar joints darker; palpi rufous: prothorax black-bronzed, shaped like that of the antecedent species, obsoletely channelled, at the base punctured on each side, but without any impressions: elytra bronzed, brilliant, furrowed with impunctured furrows; punctiform impressions as in *H. rotundicollis*; apex transverse, entire, with the external apical angle rounded: legs piceous, hands rufous, posterior trochanters very large.

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ii HYGRADEPHAGA.  
a ACUTIPALPIA.  
α QUADRIMANA.

This Section consists of the littoral or subaquatic *Adephaga*. It may be divided, with one anomaly, into three minor sections distinguished by their palpi, which may be denominated—1, *Acutipalpia*, 2, *Subulipalpia*, and 3, *Filipalpia*. Amongst these we seem to have a representative, in miniature, of many of the *Geadephagous* tribes and genera.—Thus, e. g. *Elaphrus* represents *Cicindela*; *Opisthius* or *Bembidium*, *Calosoma*; *Notiophilus*, in some sort, *Carabus*; *Catascopus* and *Pseudomorpha*<sup>9</sup> the *Truncipennia*; *Stenolophus* the *Harpalidæ*; *Isopleurus* the *Cystopodous Dimana*; and *Lopha* perhaps the *Bipartita*. Probably further investigation may make it evident, that *Argutor* also belongs to this subtribe.

<sup>9</sup> *Linn. Trans.* xiv, 94, t. iii, f. i, and 98, t. iii, f. 3.

Family STENOLOPHIDÆ. *Stenolophidans*.XXI. Genus STENOLOPHUS. Zieg.<sup>1</sup>(66) 1. \* STENOLOPHUS VERSICOLOR. *Changeable Stenolophus*.*St. (versicolor) piceo-niger; antennis basi, prothoracis margine laterali, pedibusque, rufis; elytris rufo-fulvis, sub luce violaceo micantibus.*Changeable *Stenolophus*, piceous-black; base of the antennæ, lateral margin of the prothorax, and legs, rufous; elytra reddish-brown, in the light shining with a tint of violet.Length of the body  $2\frac{1}{2}$ — $2\frac{3}{4}$  lines.

Three specimens were taken in Lat. 54°.

## DESCRIPTION.

Body dusky-black, glossy. Palpi, mouth, and scape of the antennæ rufous: prothorax scarcely longer than wide, rounded behind, with the basilar impressions punctured: elytra reddish-brown, viewed in the sun or in the light, they exhibit a changeable tint of violet; a punctiform impression adjoins the second furrow; apex slightly sinuated; epipleura yellow: thighs dusky, especially the posterior pair, which are larger than the others; tibiæ and tarsi rufous.

The female has less of the violet tint, and the elytra are of a pale mahogany colour.

VARIETY B. With the two first joints of the antennæ rufous; legs yellow.

β DIMANA.<sup>2</sup>Family TRECHIDÆ. *Trechidans*.XXII. Genus TRECHUS,<sup>3</sup> Clair.(67) 1. \* TRECHUS TIBIALIS. *Red-shanked Trechus*.*T. (tibialis) niger, subnitidus; palpis apice, antennis basi, tibiisque, rufis; prothorace subquadrato, postice utrinque sulculo impresso; elytris unifoveolatis, marginibus apicis rufescentibus.*Red-shanked *Trechus*, black, rather glossy; palpi at the apex, antennæ at the base, and tibiæ, rufous; prothorax rather square, with a basilar furrow on each side; elytra with a single punctiform impression; margins of the apex rufous.Length of the body  $2\frac{3}{4}$  lines.

Only a single specimen taken.

<sup>1</sup> M. Latreille (*Crust. Arachn. et Ins.* i, 391) has placed this genus at a considerable distance from *Trechus*, though he appears aware of their affinity; but Mr. Stephens has properly inserted it between *Ophonus* and the latter genus. He has, however, in his characters of *Stenolophus* omitted to notice its most striking distinction, that in the male insect the penultimate joint of the four anterior tarsi is cleft to the base into two narrow lobes. In *Harpalus* and *Ophonus* this joint is heart-shaped. The last joint of the palpi in the present genus, is conical though subtruncated and belongs to this tribe.

<sup>2</sup> Mr. Stephens (*Illustr. Mandib.* i, 167) says that the four anterior tarsi in *Trechus* are dilated in the males, which would make them belong to the preceding stirps, but this is an oversight, for only the anterior pair or hands are dilated. See Sturm. *Deutsch. Fn.* v, t. cxlix—cli.

<sup>3</sup> The four first joints are dilated in the hands of the males in this genus.

## DESCRIPTION.

This species upon a slight inspection might be mistaken for an *Argutor*,<sup>4</sup> but it exhibits all the most important characters of the genus under which I have placed it. The body is black, somewhat glossy. The tip of the palpi and scape of the antennæ are rufous: the prothorax is rather wider than long, but nearly square; the short basilar furrows observable in *Argutor* distinguish this species from the succeeding ones: elytra lightly furrowed, furrows impunctured; in the usual situation adjacent to the second furrow a little beyond the middle of the elytrum a very minute punctiform impression is just discernible; the lateral margin and suture at the apex of the elytra are reddish: the tibiæ are rufous but the cubit is black at the tip; the tarsi are darker, the hand has four dilated joints as in the other species of the genus.

(68) 2. \* TRECHUS RUFICRUS. *Red-legged Trechus.*

*T. (ruficrus) niger; antennis scapo, pedibus, prothoracisque margine, rufis: elytris luridis: litura pone medium nigricanti.*  
Red-legged Trechus, black; scape of the antennæ, legs, and margin of the prothorax, rufous; elytra lurid with a blackish blotch beyond the middle.

Length of the body  $2\frac{1}{3}$  lines.

One specimen only taken.

## DESCRIPTION.

Body black, glossy. Palpi piceous; scape of the antennæ and mouth rufous: prothorax subobcordate; channelled, channel not abbreviated, margin rufous especially the basilar; angles rounded; basilar impressions single, round, and punctured: elytra lurid or dirty yellow with a large blackish cloud or blotch beyond the middle: legs dull rufous, thighs darker.

(69) 3. \* TRECHUS FLAVIPES. *Yellow-legged Trechus.*

*T. (flavipes) piceus, nitidus; capite subtus, ore, antennis, prothorace, elytrisque limbo, rufescentibus; palpis pedibusque flavis.*  
Yellow-legged Trechus, piceous, glossy; head underneath, mouth, antennæ, prothorax, limb of the elytra, more or less rufous; palpi and legs yellow.

Length of the body  $2\frac{1}{3}$  lines.

Many taken in Lat. 54°.

<sup>4</sup> I suspect that the genus here quoted, consisting also of minute species, and inhabiting moist places, (see above p. 30, note 5) belongs rather to the present subsection than to the *Geadephaga*; *Trechus tibialis* seems to lead from *Argutor* to *Trechus*.

## DESCRIPTION.

Body piceous, glossy. Head underneath, nose, mouth, and oral organs—except the palpi which are pale yellow—and antennæ rufous; three first joints of the latter paler than the others: prothorax rufous, rather longer than wide, between square and obcordate; basilar impressions single, very slight, punctured, and black: elytra rufous, with a broad black stripe adjoining the suture and parallel with it; furrows rather deep, impunctured: legs pale yellow.

N.B. In the majority of specimens the black stripe of the elytra is very faint, and in some evanescent, and the impressions as well as the rest of the prothorax rufous.

(70) 4. \* TRECHUS IMMUNIS. *Impunctured Trechus.*

*T. (immunis) piceus, nitidus; ore, antennis, pedibusque, rufis; prothorace obscure rufo; foveis posticis impressis, lævibus.*  
Impunctured Trechus, piceous, glossy; mouth, antennæ, and legs, rufous; prothorax obscurely rufous, with the basilar impressions rather deep, impunctured.

Length of the body  $1\frac{3}{4}$  lines.

Two specimens taken with the preceding species.

## DESCRIPTION.

Similar to *T. flavipes* but smaller, the nose is piceous, the thorax is more dusky; dorsal channel indistinct; basilar impressions deeper and impunctured: elytra dark piceous with merely the bead of the lateral margin rufous; the furrows also are more lightly drawn: legs darker.

(71) 5. \* TRECHUS SIMILIS. *Similar Trechus.*

*T. (similis) niger, nitidus; ore, antennis, prothoracis elytrorumque limbo, pedibusque, flavo-rufis; prothorace postice punctulato.*  
Similar Trechus, black, glossy; mouth, antennæ, limb of the prothorax and elytra, and legs, reddish-yellow; prothorax punctured at the base.

Length of the body  $3\frac{1}{4}$  lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Mouth reddish yellow; palpi yellow; upper-lip and mandibles rufous, the latter black at the tip; antennæ dusky-rufous, three first joints more yellow: prothorax between obcordate and square, with the whole of the base distinctly and grossly punctured; basilar impressions shallow; limb of the prothorax is reddish-yellow, the disk is occupied by a large square black spot: the suture, lateral margin, and apex widely, and the inner base of the elytra, are reddish-yellow;



adjoining to the suture is a broad black stripe not reaching the apex; the furrows are rather deep and impunctured; and in the usual situation, a little beyond the middle, a punctiform impression is adjacent to the second furrow: the sides of the fore-breast, the anus, and the legs, are reddish-yellow.

VARIETY B. Thorax without a black spot in the disk, body underneath piceous.

This species, though very like *T. flavipes*, is quite distinct from it; it is nearly related also to *T. flavicollis* of Sturm,<sup>5</sup> but it is much larger, the three first joints of the antennæ, and not the scape only, are paler than the others; and the prothorax is transversely punctured at the base, which in that species is impunctured.

### Family ISOPLEURIDÆ.<sup>6</sup> *Isopleuridans*.

#### XXIII. \* Genus ISOPLEURUS.

*Labrum* rather square, emarginate at the tip.

*Palpi maxillary*, antepenultimate joint longer than the rest, subcylindrical; penultimate shorter than the last joint, obconical; last semi-ovate, subtruncate.<sup>7</sup>

— *labial*, penultimate joint longer than the rest, subclavate; the last semilanceolate, subacute.<sup>8</sup>

*Labium* deeply emarginate sometimes with a short intermediate denticle, or prominence.

*Tongue* shorter than the paraglossæ.

*Antennæ* three first joints glossy, the third very little longer than the subsequent ones.

*Bdoy* linear-oblong. *Head* subtriangular; frontal impressions punctiform. *Prothorax* subquadrate, rather narrowest anteriorly; sides curving: base as wide as the elytra. *Scutellum* wider than long. *Elytra* with the sides parallel, very slightly sinuated at the apex. *Hand* of the males with three dilated joints.

I know two species belonging to this genus, one taken by Mr. Drummond, in the late Expedition, amongst the Rocky Mountains, and the other, which is in my own cabinet, I judge from the pin with which it is transfixed, to have been taken in the East Indies by Major General Hardwicke, and probably given by him to the late Mr. Marsham, at the sale of whose cabinet, though I have no memorandum of the fact, I suspect I purchased it. If this conjecture turns out correct, this is an instance of another Oriental form from the above mountains, and confirms a remark Mr. Sabine once made to me, that the natural productions, he spoke of the plants, on their western side appeared of an Asiatic type.

It should be observed however that the Asiatic species differs from the American in having no prominence in the sinus of the labium, its maxillary palpi also are less acute, and the prothorax not so narrow before, or more approaching to a square, so that perhaps it may form a subgenus in the *Isopleuridans*. This genus seems to have some relationship to *Amara*.

<sup>5</sup> *Deutsch. Fn.* v, 87, 11, t. cli, f. c.

<sup>6</sup> The *Trechidans* and *Isopleuridans* cannot be included in one family because the former has four dilated joints in the hand of the male insect and the latter only three. I placed *Stenolophus* next to *Harpalus*, because the males of both agree in being *quadrimanous*, or having four dilated tarsi; yet I am rather inclined to think that *Isopleurus* and *Trechus*, as representing the *Dimanous Geadephaga*, ought to be placed first.

<sup>7</sup> Plate I, Fig. 6 a.

<sup>8</sup> *Ibid.* b.

(72) 1. \* ISOPLEURUS NITIDUS. *Glossy Isopleurus.*

*I. (nitidus) piceus, nitidissimus, supra piceo-æneus; antennis, epipleura, pedibusque, rufo-flavis; elytris striis subpunctatis, apice levibus.*

Glossy Isopleurus, piceous, very glossy, above bronzed with a tint of piceous; antennæ, side-cover, and legs reddish-yellow; furrows of the elytra slightly punctured, but not at the apex.

PLATE I, FIG. 6.

Length of the body  $3\frac{1}{4}$  lines.

A single specimen taken in the Rocky Mountains.

## DESCRIPTION.

Body very glossy, underneath rufo-piceous, above bronzed with a light tint of piceous. Upper-lip rufous; palpi, antennæ which are slender, side-cover of the elytra and legs reddish-yellow: prothorax rather wider than long, punctured posteriorly, basilar impressions double: furrows of the elytra slightly punctured, at the apex impunctured.<sup>9</sup>

Family PATROBIDÆ. *Patrobidans.*

XXIV. Genus PATROBUS. Meg.

I consider the *Patrobidans* as forming a family distinct from the *Pogonidans*, though both agree in having only two dilated joints in the hand of the males, because the former have the last joint of the palpi more or less conical and acute; and in the other they are filiform and truncate. De Jean has formed his first division of his Feronians of these two families, the last of which, the *Pogonidans*, consists of the modern genera *Pogonus*, *Cardiaderus*, *Blemus*, *Epaphius*, and *Aepus*;

<sup>9</sup> The following is a description of the Oriental species:—

\* ISOPLEURUS MAC LEAYI. *Mac Leay's Isopleurus.*

*I. (Mac Leayi) niger, nitidus, supra æneus; ore, palpis, antennæ scapo, pedibusque, rufo-flavis; elytris apice pallidis, latere externo brevissime pilosis, striatis: striis secundo, tertio, et septimo foveolis octo impressis.*

Mac Leay's Isopleurus, black, glossy, above bronzed; mouth, palpi, scape of the antennæ and legs reddish-yellow; elytra pale at the tip; at the lateral margin hairy with very short hairs; lightly furrowed; second, third, and seventh furrows with eight punctiform impressions.

and the first, the *Patrobidans*, of *Baripus* and *Patrobus*.<sup>1</sup> *Pogonus*, &c. are not very distant from *Trechus* and *Isopleurus*; they belong as clearly to the *Hygradephaga*, and as clearly lead to the *Patrobidæ*, which though of greater size than most of the constituents of that subsection, maintain, as far as they are known, the same love of humid and littoral stations, and, though differing in their palpi and size, are nearly related to the *Subulipalpia*: the discovery of a very few intermediate links would connect *Patrobus* and *Peryphus*; and even now, if closely inspected and compared, they will be found to possess many characters in common. In the first place, in the tribe to which *Peryphus* belongs, in the males, the two first joints of the hand are dilated, the second indeed only on one side, and cystophorous, as in *Patrobus*: in the next, the head and eyes in both are very similar as to form and likewise sculpture, and the same may be said of the prothorax and elytra.

## DESCRIPTION.

Antennæ, the scape excepted, dusky-rufous, rather longer than the prothorax; joints that succeed the third thicker than the basal ones: prothorax wider than long, impunctured; basilar impressions single, slight: elytra furrowed; furrows lightly drawn, impunctured; on each of the following furrows, viz. the 2nd, 5th, and 7th, are eight punctiform impressions; epipleura pale yellow.

(73) 1. PATROBUS AMERICANUS. (De Jean.) *American Patrobus*.

*Patrobus Americanus*. De J. *Cat.* 10; *Coléopt.* iii, 34, 8.

*Feronia longicornis*. Say. *Amer. Trans. N. S.* ii, 40, 9.

*Carabus longicornis*. Melsh. *Cat.*

Length of the body  $5\frac{3}{4}$  lines.

Three specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Head triangular, smooth; frontal impressions long and deep; upper-lip and mandibles piceous; mouth and palpi rufous; antennæ longer than the thorax, dark mahogany-colour, third joint twice the length of the fourth: prothorax obcordate, constricted behind; dorsal channel rather deep terminating anteriorly in a transverse segment of a circle, so as to form a cross with curvilinear arms; lateral margin rather incrassated; basilar impressions single, large, wrinkled, and thinly punctured: elytra furrowed, four furrows next the suture deeper than the others, and more visibly punctured, with more convex interstices, last but one nearly obliterated: legs pale-yellow with mahogany-coloured coxæ and trochanters; foot-cushions of the male with a double series of minute vesicles.

<sup>1</sup> *Coléopt.* iii, 2.

(b) SUBULIPALPIA.

Family PERYPHIDÆ.<sup>2</sup> *Peryphidans*.

XXV. Genus PERYPHUS. Meg.

(74) 1. \* PERYPHUS BIMACULATUS. *Two-spotted Peryphus*.*P. (bimaculatus) niger, nitidus; supra viridi-æneus; pedibus rufis; elytris macula obliqua apicis lurida.*

Two-spotted Peryphus, black, glossy; above green-bronzed; legs rufous; elytra with an oblique lurid spot at the apex.

Length of the body  $3\frac{1}{4}$  lines.

Taken in Lat. 65°.

## DESCRIPTION.

Body glossy, underneath black, above black-bronzed with a slight greenish tint. Head triangular, with a thick convex neck; frontal impressions long and deep; antennæ longer than the prothorax, third joint of the length of the succeeding ones; scape and palpi rufous: prothorax obcordate convex, at the base depressed, constricted, and grossly punctured; dorsal channel as in *Patrobus*; basilar impressions single, round, and deepish: elytra slightly furrowed with the furrows punctured; the seventh from the suture nearly obliterated; apex nearly smooth, near which is an oblique pale spot: legs rufous with darker thighs, especially in the middle.

N.B. When the elytra are raised from the body they are dusky-bronzed.

(75) 2. \* PERYPHUS SORDIDUS. *Sordid Peryphus*.*P. (sordidus) nitidus; subtus sordide rufus: ano infuscato; capite prothoraceque nigro-æneis; antennis articulis tribus primis, palpis, pedibusque, pallide rufis; elytris luridis: macula magna obliqua apicis pallida.*

Sordid Peryphus, glossy, underneath dirty rufous with the anus embrowned; head and prothorax black-bronzed; three first joints of the antennæ, palpi, and legs, rufous; elytra lurid with a large, oblique, pale spot near the apex.

Length of the body 3 lines.

A single specimen in Lat. 54°.

## DESCRIPTION.

This so nearly resembles *P. bimaculatus*, that I first put it aside as an immature specimen, but further consideration induces me to consider it as distinct. It is wholly pale rufous, except the head the prothorax and the anus: the three first joints of the antennæ and the base of the fourth are also rufous: the prothorax appears rather narrower in proportion, and less distinctly punctured at the base; the spot at the apex of the elytra is larger; and the thighs are rather slenderer.

<sup>2</sup> The *Peryphidæ* are distinguished from the *Bembidiadæ*, not only by the shape of the thorax, but by having the apex and sides of the elytra smooth, or with obliterated furrows.

(76) 3. \* PERYPHUS SCOPULINUS. *Scopuline Peryphus*.

*P. (scopulinus) niger, nitidus; capite prothoraceque subviridi-æneis; antennis articulis tribus primis, palpis, pedibusque, rufis; elytris fusco-æneis, bifoveolatis, macula obliqua apicis lurida.*

Scopuline Peryphus, black, glossy: head and prothorax bronzed with a slight tint of green; three first joints of the antennæ, palpi, and legs rufous; elytra brown-bronzed with two punctiform impressions, and an oblique lurid spot near the apex.

Length of the body  $2\frac{1}{2}$  lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

This species, though related to them, is distinct from the two preceding ones; it approaches very near *P. littoralis*, probably synonymous with *Carabus rupestris* Fab., but the elytra have no spot at the base, and in the usual situation, but adjacent to the third furrow, are two punctiform impressions, not to be discovered in that species.

The body, head, and prothorax do not differ either in colour or sculpture from *P. bimaculatus*, but the palpi are considerably shorter, the three first joints of the antennæ are rufous, the thighs are not darker than the rest of the leg: the elytra are of a dark mahogany-brown a little bronzed, with rather deeper furrows and punctures.

(77) 4. \* PERYPHUS RUPICOLA. *Rock Peryphus*.

*P. (rupicola) nitidus, piceus; capite prothoraceque æneo-piceis; antennis pedibusque rufis; elytris bifoveolatis maculis duabus, posteriori obliqua, pallidis.*

Rock Peryphus, glossy, piceous; head and prothorax bronzed, piceous; antennæ and legs rufous; elytra with two punctiform impressions and two pale spots, the posterior one oblique.

Length of the body  $2\frac{1}{2}$  lines.

Taken abundantly in Lat. 54° and 65°.

## DESCRIPTION.

This little species appears to be the American representative of *P. littoralis*, which in many respects it closely resembles. It is however a smaller insect, the body is invariably piceous or rufo-piceous, and the head and prothorax are of the same colour bronzed; the antennæ are ferruginous with the scape paler: the prothorax is rather shorter.

(78) 5. \* PERYPHUS PICIPES. *Pitch-footed Peryphus.**P. (picipes) niger, nitidus; elytris immaculatis, bifoveolatis; antennis scapo, pedibusque, piceis.*

Pitch-footed Peryphus, black, glossy; elytra unspotted with two punctiform impressions; scape of the antennæ, and legs, piceous.

Length of the body  $2\frac{1}{4}$  lines.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body black, glossy, above scarcely at all bronzed. First joint of the antennæ rufo-piceous; sculpture of the head, prothorax, and elytra precisely that of the preceding species of the genus: elytra unspotted with two punctiform impressions situated as in *P. scopulinus*, &c.: legs rufo-piceous. This comes very close to *P. nitidulus*, but that species has no punctiform impressions, and the legs are of a different colour.

(79) 6. \* PERYPHUS CONCOLOR. *Concolorate Peryphus.**P. (concolor) niger, nitidus, elytris apice lævibus, striis lateralibus haud oblitteratis.*

Concolorate Peryphus, black, glossy; elytra smooth at the tip with the lateral furrows not obliterated.

Length of the body  $2\frac{1}{2}$  lines.

## DESCRIPTION.

Body and members black, glossy, above bronzed. Scape of the antennæ piceous: prothorax less constricted behind than in *P. picipes*; space between the basilar impressions impunctured; elytra more deeply furrowed with larger punctures in the furrows; the lateral furrows are not obliterated, but the apex of the elytrum is impunctured.

## iii. Subgenus LOPHA. Meg.

(80) 8. PERYPHUS (*Lopha*) QUADRIMACULATUS. *Four-spotted P. Lopha.**Lopha quadrimaculata.* De J. *Cat.* 17. Steph. *Illust. Mandib.* ii, 22, 3.*Cicindela quadrimaculata.* Linn. *Fn. Suec.* 751; *Syst. Nat.* i, 658, 13.*Elaphrus quadrimaculatus.* Illig. *Kaf. Preuss.* i, 232, 17.*Carabus pulchellus.* Panz. *Fn. Germ.* xxxviii, t. 3.—— *subglobosus.* Payk. *Fn. Suec.* i, 142, 58.—— *quadrimaculatus.* Berk. *Syn.* i, 108.*Bembidium quadrimaculatum.* Gyll. *Ins. Suec.* ii, 22, 9. Sturm. *Deutsch. Fn.* v, 178, 40.—— *oppositum.* Say. *Amer. Trans. N. S.* ii, 86, 7?Length of the body  $1\frac{3}{4}$  lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Head and prothorax bronzed-green; four first joints of the antennæ rufous, the succeeding ones dusky; palpi rufous dusky at the tip; frontal impressions rather oblique: prothorax very much constricted behind, so as to appear almost triangular, depressed at the base with a transverse series of punctures; basilar impressions small: elytra piceous faintly bronzed, with a large roundish pale spot at the base, and another smaller, rather transverse one, beyond the middle; they are not furrowed, but have the usual number of rows of punctures which do not extend to the apex, and the lateral one is nearly obliterated: the legs are rufous.

## iv. \* Subgenus EUDROMUS.

Prothorax nearly square, with double basilar impressions. Elytra with only the disk punctured in rows.

This subgenus differs from the other *Peryphidæ* in having a prothorax precisely resembling that of a *Pæcilus*, of which genus it may be regarded as the analogue amongst the *Subulipalpia*.

(81) 9. \* PERYPHUS (*Eudromus*) NITIDUS. *Glossy P. Eudromus*.

*P. E. (nitidus) niger, nitidissimus; supra nigro-æneus; elytris levissimis, apud suturam puncto-striatis.*

Glossy *P. Eudromus*, black, very glossy, above bronzed; elytra very smooth, punctured in rows next the suture.

## PLATE I, FIG. 7.

Length of the body  $3\frac{1}{2}$  lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body linear-oblong, subdepressed, very glossy, underneath black, above black-bronzed. Head triangular; frontal impressions long and rather curvilinear; scape of the antennæ rufous underneath: prothorax nearly square and level with curving sides; dorsal channel nearly obsolete; basilar impressions double, the inner one round and rather deep, the other very slight with a little ridge between it and the margin: anterior and posterior margin nearly straight; elytra with sides nearly parallel as well as the apex impunctured; a quintuple series of punctures adjoins the suture, which extends very little beyond the half of the elytrum, with traces of slight furrows beyond it.

## XXVI. \* Genus TACHYTA.

*Palpi* with the last joint most minute, and with difficulty discoverable.<sup>3</sup>

*Antennæ* subfiliform, submoniliform, with all the joints nearly equal in length.

*Body* oblong, subdepressed. *Prothorax* narrower than the elytra, rather obcordate. *Elytra* obsoletely furrowed.

This appears entitled to rank as a genus in a modern system, not only from having the last joint of the palpi much shorter and more minute than the other *Peryphidans*, but likewise from its moniliform antennæ. It seems to approach to *Tachys*, but the prothorax is of a different shape coming near that of *Bradytus* and *Curtonotus*. It seems to be the analogue of *Dromiustruncatellus* and affinities.

(82) 1. \* TACHYTA PICIPES. *Pitch-foot Tachyta.*

*T. (picipes) nigra, nitida; prothorace obcordato utrinque unifoveato; elytris lævibus, apud suturam substriatis: striis lævibus; pedibus piceis.*

Pitch-foot *Tachyta*, black, glossy; prothorax obcordate; basilar impressions single; elytra smooth, obsoletely furrowed at the suture, furrows impunctured; legs piceous.

PLATE VIII, FIG, 6.

Length of the body  $1\frac{1}{2}$  lines.

Four specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy. Frontal impressions rather oblique; eyes less prominent than usual in the tribe: prothorax broader than long, subobcordate; basilar impressions, which are single, and dorsal channel, rather deep: elytra with three obsolete impunctured furrows next the suture which do not reach the apex. Apex rounded: legs piceous.

<sup>3</sup> Plate VIII, Fig. 6 a.



Family BEMBIDIADÆ.<sup>4</sup> *Bembidiadans.*

XXVII. Genus NOTAPHUS. Meg.

(83) 1. \* NOTAPHUS NIGRIPES. *Black-foot Notaphus.*

*N. (nigripes) niger, nitidus; supra virescenti-æneus; elytris lineola basilaris, fasciis duabus postica undulata, apiceque, luridis.*  
Black-foot Notaphus, black, glossy; above bronzed with a greenish tint; elytra with a basilar streak, two bands, the posterior undulated, and the tips, lurid.

Length of the body 2 lines.

Three specimens taken in Lat. 54°.

## DESCRIPTION.

Body black, glossy; above bronzed with a greenish tint; the whole upper-surface under a powerful magnifier appears covered with innumerable granules, which are much more distinctly seen in this family than in the *Peryphidæ*. Scape of the antennæ, which are longer than the prothorax, rufo-piceous; frontal impressions parallel; the punctiform impression adjoining the eyes on their inner side has a central elevation: prothorax short with a deep dorsal channel; basilar impressions double with a little ridge between the external one and the margin: elytra furrowed, furrows punctured for about two-thirds of their length, the first and second reach the apex where they are confluent; the third and fourth stop a little short of the apex and are also confluent, as are the fifth and sixth, which are still shorter, and terminate in a little furrow common to both; the seventh and eighth reach the apex where they likewise unite; two punctiform impressions, in the usual situation, adjoin the third furrow; at the base of the elytrum, in the interstice between the fifth and sixth furrows, is a longitudinal lurid streak, then follows an abbreviated and articulate<sup>5</sup> band of the same colour, consisting of four streaks, those near the lateral margin being much the longest; in the interstices between the second and third furrows are two such little streaks; near the apex is likewise another band both articulated and undulated, consisting of seven spots, the marginal one being rather the longest; the tips of the elytra are likewise lurid.

*N. nigripes* is related to *N. ustulatus*, and appears to be its American representative; it differs from it in having black legs, and the lurid markings of the elytra are different: it comes nearest to Gyllenhal's Variety C.<sup>6</sup>

<sup>4</sup> The *Bembidiadæ* are distinguished from the *Peryphidæ* by the elytra having the typical number of furrows, none being obliterated.

<sup>5</sup> *Introd. to Ent.* iv. 297, c.

<sup>6</sup> *Insect. Suec.* iv. 413.

(84) 2. \* NOTAPHUS INTERMEDIUS. *Intermediate Notaphus.*

*N. (intermedius) niger, nitidus; capite prothoraceque viridi-æneis; elytris luridis æneo-nitidis; maculis duabus, fasciaque intermedia, nigris; antennis scapo, palpis, pedibusque, rufis.*

Intermediate Notaphus, black, glossy; head and prothorax green-bronzed; elytra lurid glossed with bronze, with two black spots, and a black intermediate band; scape of the antennæ, palpi, and legs, rufous.

Length of the body  $1\frac{1}{5}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Very nearly related to *N. nigripes*, but the head and prothorax are greener; antennæ as long as the prothorax; the palpi are rufous with the penultimate joint rather dusky: elytra bronzed-lurid with a round black spot near the base, a larger near the apex, and an angular band of the same colour between them: the legs are dull rufous. The sculpture of the elytra is nearly the same as in that species, but the fifth furrow by a turn outward almost intercepts the sixth and seventh, and then runs to the apex of the elytrum; the furrows themselves are black.

(85) 3. \* NOTAPHUS VARIEGATUS. *Variiegated Notaphus.*

*N. (variegatus) niger, nitidus; supra nigro-æneus; antennis scapo, pedibusque rufo-piceis; elytris luridis nigro variegatis, striatis: striis abbreviatis; trifoveolatis.*

Variiegated Notaphus, black, glossy; above black-bronzed; scape of the antennæ and legs rufo-piceous; elytra lurid, variegated with black; furrowed, furrows abbreviated, trifoveolate.

Length of the body  $1\frac{3}{4}$  lines.

## DESCRIPTION.

This also is related to *N. nigripes*, but is quite distinct. The head and prothorax are without any green tint; the antennæ are not longer than the prothorax, the prothorax is proportionally not so wide before and narrower behind: elytra scarcely at all bronzed; lurid with a large blackish cloud or spot near the base, another near the apex, and an intermediate black angular band; the furrows of the elytra, especially the external ones, do not reach the apex, or at least are obliterated; they are punctured the whole of their apparent length; instead of two, there are three punctiform impressions: the legs are rufo-piceous.

## XXVIII. Genus BEMBIDIUM. Lat.

(86) I. BEMBIDIUM IMPRESSUM. (Gyllenhal.) *Impressed Bembidium.*

*Bembidium impressum.* Gyll. *Ins. Suec.* ii, 13, 2. De J. *Cat.* 16. Sturm. *Deutsch. Fn.* v, 177, 45. Steph. *Illustr. Mandib.* ii, 32.

*Carabus velox.* Linn. *Fn. Suec.* 803. *Iter. Oeland.* 207. *Syst. Nat.* ii, 672, 31?

*Elaphrus impressus.* Fab. *Syst. Eleuth.* i, 246, 4. Illig. *Kaf. Preuss.* i, 277, 6. Panz. *Fn. Germ.* xl, t. 8.

——— *striatus.* Payk. *Fn. Suec.* i, 175, 3.

——— *littoralis.* Oliv. *Ent.* ii, 6, 34, 4; t. i, f. 7.

*Cicindela striata.* Marsh. *Ent. Brit.* i, 393, 7.

Length of the body  $2\frac{1}{3}$  lines.

Taken frequently in Lat. 54°. and 65°. and in the Journey from New York to Cumberland-house. On the sandy shores of Lake Winnipeg in the spring of 1825? Mr. Drummond. In Canada. Dr. Bigsby.

This little insect appears pretty generally dispersed. In England it has been rarely met with; the only known British specimen was in the late Mr. Marsham's collection, and is now in Mr. Stephens'. The former gentleman, in his description, refers to Mr. Donovan's cabinet. I have seen specimens taken by Mr. Wilkin in Flanders; and Oliver informs us, for there can be no doubt with respect to his synonym, though hitherto overlooked by Entomologists, that it is found on the banks of the Seine near Paris. It is found in Sweden, Major Gyllenhal informs us, on the sandy shores of lakes, where it is remarkable, in warm weather, for the promptitude and celerity of its motions both on the earth and in the air: and Mr. Drummond observes, I have no doubt with respect to this insect rather than *Sericoda bembidioides*,<sup>7</sup> "that it runs in the sand with great agility, and frequently flies when attempted to be taken." Linné also observes of his *Carabus velox*, which the Entomologists of Sweden hold to be a variety of it, that it runs and flies with the most velocity of any coleopterous insect: a circumstance, which as well as its large eyes, proves its title, in common with *Elaphrus*, to claim some affinity with the *Euptera*, (*Cicindela* L.)

<sup>7</sup> See above p. 15.

## DESCRIPTION.

Body underneath green, bronzed, very glossy; above bronzed, gloss much obscured, occasioned by an infinity of most minute reticulations visible only under a good magnifier, which give it a granulated appearance; frontal impressions and ocellated punctures as in *Notaphus*; eyes very large and prominent; palpi bronzed with the second joint obscurely rufous; antennæ longer than the prothorax, with the scape, and the base of the second and third joints, rufous: prothorax short, depressed both at the base and apex, the depressed part being wrinkled longitudinally; dorsal channel and basilar impressions rather deep, in the latter are two little furrows: in the elytra, a little beyond the middle, in the interstice between the second and third furrows, are two quadrangular, oblong, slightly depressed spaces of a somewhat golden lustre, and marked at the anterior end with a punctiform impression; immediately before, between, and after the depressed spaces, is a levigated and rather elevated one of the same shape; the furrows of the elytra are arranged nearly in the same way as those of *Notaphus intermedius* above described: the legs are rufous with the thighs bronzed at the apex.

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(c) FILIPALPIA.

Family ELAPHRIDÆ. *Elaphridans*.

XXIX. \* Genus OPISTHIUS.

Oral organs scarcely different from those of *Elaphrus*.

*Body* depressed and flat. *Head* triangular, antennæ much more slender and longer than those of *Elaphrus*, third joint rather longer than the fourth. *Prothorax* very short, transverse, scarcely wider than the head; anteriorly obsoletely obtusangular, posteriorly subrepand, depressed a little at base and apex; channelled, but without basilar impressions; sides gibbous; angles all obtuse. *Scutellum* rather obtusangular. *Elytra*, alitrunk,<sup>8</sup> and abdomen very much dilated, nearly twice the width of the prothorax, without furrows, with several rows of obsolete mammillated impressions. *Legs* rather longer and more slender than those of *Elaphrus*; the *hands* of the male have the four first joints a little dilated and furnished underneath with a brush.

This appears to be one of those transition genera which Mr. W. S. Mac Leay has denominated *osculant*, and to unite the *Hygradephaga filipalpia* with the *subulipalpia*, and more particularly *Elaphrus* with *Bembidium*. From the latter it borrows its general aspect, its short prothorax, its dilated elytra, alitrunk and abdomen; its oral organs, its head, and in some respects its elytra, and its legs are those of the former; its antennæ resemble those of *Cicindela*; and the hand of the male has four dilated joints furnished with a brush as in the *Carabidæ*.

The alitrunk is that part of the trunk which bears the wings and the four posterior legs.

(87) 1. \* OPISTHIUS RICHARDSONI. *Richardson's Opisthius.*

*O. (Richardsoni) subobscurus; subtus niger; subpilosus, supra nigro-æneus; elytris dilatatis planis, foveolarum levium seriebus quatuor; tibiis obscure rufis.*

Richardson's Opisthius, gloss rather obscured; black underneath and somewhat hairy; above black-bronzed; elytra flat, dilated, with four rows of slight impressions; tibiæ obscurely rufous.

## PLATE I, FIG. 9.

Length of the body .....	$4\frac{1}{4}$	} lines
Breadth of the prothorax .....	1	
————— elytra taken together	$2\frac{3}{4}$	

Mr. Drummond, from my description of this curious insect, thinks it was taken in May, 1825, on an island of Lake Winnipeg, frequenting moist muddy places from which the water had shrunk.

## DESCRIPTION.

Body with the gloss obscured; underneath black, somewhat hairy, above a little bronzed. Antennæ nearly half the length of the body, four first joints greenish-bronzed, the rest deep blue; front with a slight impression between the antennæ and a few scattered short whitish hairs: prothorax very short, more bronzed, transversely very minutely wrinkled: elytra with three rows of oblong greenish very slight impressions, each with a central oblong elevation, with another levigated one between each; adjoining the lateral margin is a fourth series of greenish-bronzed more numerous impressions without any central or intermediate elevations: thighs green-bronzed, tibiæ obscurely rufous, tarsi black, legs hairy.

## XXX. Genus ELAPHRUS. Fab.

(88) 1. \* ELAPHRUS CLAIRVILLII. *Clairville's Elaphrus.*

*E. (Clairvillii) viridi-æneus, supra punctulis induratis irroratus: elytris foveis annulatis cæruleis punctatis quadruplici serie; fronte inter oculos foveola impressa; femoribus viridibus.*

Clairville's Elaphrus, green-bronzed, above sprinkled with minute gilded punctures; elytra with annulated, blue, punctured impressions in a quadruple series: thighs green.

Elaphrus riparius. Say. *Amer. Trans.* ii, 80?

## PLATE I, FIG. 8.

Length of the body 4 lines.

A single specimen taken in the journey from New York to Cumberland-house.

## DESCRIPTION.

Body glossy; underneath green-bronzed; above black slightly bronzed, covered with minute scattered, gilded punctures. Mandibles and palpi piceous; antennæ black, with the three first joints dark blue; front with an elevation between the eyes, rather deeply impressed in the centre: prothorax longer than wide, uneven, with two large discoidal elevations separated by a dorsal channel, each with a central impression; a single basilar impression at the posterior angles tinted with blue: elytra with four irregular rows containing in all twenty-one slight circular impressions punctured, and tinted with blue, each, except the marginal ones surrounded by an elevated ring, and placed in a wider impression; between each of these impressions in the two first rows is an elevated and levigated space: thighs glossy-green, the posterior pair rufous at the base; tibiæ and tarsi piceous.

I am doubtful whether this species may not be Mr. Say's *E. riparius*, but it is not the real one, from which, and *E. uliginosus*, it is distinguished by being much less thickly dusted with green-gold glittering punctures, which gives it a blacker hue. The impression also in the elevated space between the eyes is much deeper. The blue-tintured impressions of the elytra are also more distinct, and surrounded by a more elevated ring.

It may be here observed that the peculiar sculpture which is so conspicuous in the elytra of *Elaphrus* may be first traced in those of *Bembidium impressum* which exhibits two gilded impressions; in *Opisthius* these impressions become more numerous, and assume a seriatim arrangement; and in the genus first named they become more perfect and prominent—this affords a further proof of the affinity of the Bembidiadans and Elaphridans.

(89) 2. \* *ELAPHRUS INTERMEDIUS. Intermediate Elaphrus.*

*E. (intermedius) punctulatissimus, subtus viridi-æneus, supra nigro-æneus; tibiis rufis; elytris foveis subimpressis centro eminentibus quadruplici serie; plaga elevata, levigata, discoidali, communi.*

Intermediate *Elaphrus*, very minutely and thickly punctured; underneath green-bronzed, above black-bronzed; tibiæ rufous; elytra with four rows of slight impressions with an eminence in the centre, and an elevated levigated discoidal space common to both elytra.

Length of the body 4 lines.

Taken by Dr. Bigsby in Canada.

## DESCRIPTION.

This species resembles *E. cupreus*, but it is quite distinct. The body is more thickly and minutely punctured on the whole upper surface; underneath it is of a fine bronzed-green; above it is blacker and less brilliant: the head is greenish; the middle space between the eyes is less elevated than in that species, and wrinkled longitudinally without any impression: the impressions on the discoidal elevations of the prothorax are fainter: the elytra like the other species have a quadruple series of impressions, but they are broader, more slight, without any elevated ring, are more minutely punctured, have a slight elevation in the centre, and are of the same colour with the rest of the elytrum; the marginal series is nearly obsolete; just before the middle, adjoining the suture is a quadrangular elevation which unites with that of the other elytrum: the thighs are green, rufous at the base, tibiæ rufous, tarsi piceous.

(90) 3. \* ELAPHRUS OBSCURIOR. *Obscurer Elaphrus.*

*E. (obscurior) supra obscuro-cupreus, capite prothoraceque punctulatissimis; elytris obsolete foveatis, spatiis elevatis levigatisque quatuor.*

Obscurer Elaphrus, above obscurely cupreous, head and prothorax thickly and minutely punctured; elytra very slightly impressed, with four polished elevations.

Length of the body  $3\frac{1}{4}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

This species is more strongly marked than the majority of the *Elaphri*. On the underside the head and trunk are copper with a slight tint of green; the abdomen of a dusky purplish copper: above it is copper-coloured; the head, with the exception of the upper-lip, is very thickly and confluent punctured, with a levigated but scarcely elevated space between the eyes; the four first joints of the antennæ are cupreous: prothorax not wider than the head, confluent and thickly punctured; discoidal elevations not conspicuous nor impressed; elytra not glossy, punctured with scattered punctures, marked by a quadruple series of very slight impressions, some nearly obsolete, most of them marked out by a very slight elevated ring and a circle of punctures, three levigated quadrangular spaces near the suture and arranged in a line parallel with it, and a fourth triangular one removed from it, near the apex; the disk of the elytra is faintly purple: legs bronzed.

## XXXI. Genus NOTIOPHILUS. Dum.

(91) 1. NOTIOPHILUS AQUATICUS. *Aquatic Notiophilus.*

*Notiophilus aquaticus.* De J. *Cat.* 18; *Coléopt.* ii, 227, 1. Latr. *Crust. Arachn. et Ins.* i, 418. Steph. *Illustr. Mandib.* ii, 32, 1. Sam. *Compend.* 148, 1. Leach. *Ed. Encycl.* ix, 79.

*Cicindela aquatica.* Linn. *Fn. Suec.* 752; *Syst. Nat.* ii, 658, 14. Goeze. *Eur. Fn.* viii, 686, 3. Müll. *Linn. Nat. Syst.* V, i, 331, 14. Schrank. *Enum.* 193, 361. Vill. *Ent.* i, 325, 10. Berk. *Syn.* i, 105. Don. *Ins.* viii, t. 351, f. 2. Marsh. *Ent. Brit.* i, 393, 6.

——— *striata.* De G. *Ins.* iv, 118, 5.

——— *pusilla.* Schreb. *Nov. Spec.* 10, 6.

——— *semipunctata.* Marsh. *Ent. Brit.* i, 394, 8. Vill. *Ent.* i, 326, 12.

*Elaphrus aquaticus.* Fab. *Syst. Eleuth.* i, 246, 7. Oliv. *Ent.* ii, 34, 6, 5, t. i, f. 6. Ced. *Fn. Ingr.* 28, 85. Panz. *Ent. Germ.* i, 69, 6; *Fn. Germ.* xx, t. 3. Illig. *Kaf. Preuss.* i, 224, 1. Payk. *Fn. Suec.* i, 177, 5. Ross. *Fn. Etrusc.* i, 193, 478. Hoppe. *Taschenb.* 1796, 182, 37. Gyll. *Ins. Suec.* ii, 10, 4; iv, 399, 4. Duft. *Fn. Austr.* ii, 191, 2. Walck. *Fn. Paris* i, 61, 5. Lat. *Gen.* i, 182, 5.

*Elaphrus semipunctatus.* Fab. *Syst. Eleuth.* i, 246, 8. Oliv. *Ent.* ii, 34, 6, 7, t. i, f. 3. Panz. *Ent. Germ.* i, 69, 7. Ross. *Fn. Etrusc.* i, 194, 479. Herbst. *Arch.* 116, 3. Clair. *Ent. Helvet.* ii, 166, t. xxv, f. b. 6. Walck. *Fn. Paris.* i, 61, 6.

*Buprestis.* Geoff. *Ins.* i, 157, 31.

Length of the body  $2\frac{1}{2}$  lines.

One specimen taken.

## DESCRIPTION.

Body very glossy, black underneath, above bronzed. Head with seven furrows between the eyes, the two lateral ones the deepest; nose anteriorly wrinkled longitudinally, behind with a pair of transverse punctiform impressions with a minute rather sharp elevation between them; antennæ short, obscurely rufous at the base: prothorax punctured with the disk transversely smooth; dorsal channel abbreviated; basilar impressions single, large: elytra punctured in rows, the interstice between the sutural and the second rows thrice the width of the other interstices: there are nine rows of punctures, the fourth, fifth, and six are also furrowed; the seventh, eighth, and ninth terminate in furrows, which run to the end of the elytrum, the two exterior ones becoming confluent: between the third and fourth rows in the anterior half of the elytrum is a deep punctiform impression, and another very minute one with a central elevation is discoverable between the apex and the little furrow in which the fifth and sixth rows after they become confluent terminate: thighs a little bronzed.

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Family OMOPHRONIDÆ. *Omophronidans*.

This family, as far as at present known, consists only of a single genus, which appears separated by a very wide interval from the other insects of the present section, and makes a near approach to those *Hydradephaga*, or aquatic predaceous beetles that have no scutellum, as *Haliphus* and *Hydroporus*, with which, indeed, Clairville has associated it; and it agrees with them not only in having no apparent scutellum, a character scarcely to be found, that I am aware, in any true *Geadephagus* genus;<sup>9</sup> but its larva also, as appears from M. Desmaret's description of it, though it wants the suctorious mandibles, exhibits a striking resemblance to that of *Dytiscus*. In fact, as far as our present knowledge leads us, its cognate forms are all in that tribe, none at present discovered among the terrestrial predaceous beetles coming near it. Future discoveries will probably help to fill up the hiatus between them; at present, however, it must be regarded as nearer to the *Hydradephaga* than the *Geadephaga*. I shall therefore consider it as oculant between them.

<sup>9</sup> Mr. W. S. Mac Leay (*Annulos. Javan.* i, 23, 41, t. i, f. 4) has described an insect, which he places amongst his *Harpalidæ*, under the name of *Anaulacus sericipennis*, and which he regards as an anomaly, that has no apparent scutellum, which in this circumstance and in its shape seems to resemble *Omophron*, but as yet I have not had an opportunity of examining the insect.



## XXXII. Genus OMOPHRON. Lat.

(92) I. \* OMOPHRON SAII. *Say's Omophron.*

*O. (Saii) nigra*; fronte antennis, pedibus, elytrisque fasciis duabus angulato-undulatis apiceque, testaceis; labro, prothoracis lateribus, elytrisque margine laterali, argenteis.

Say's Omophron, black; front, antennæ, legs, two angulato-undulated bands and apex of the elytra, testaceous; upper-lip, sides of the prothorax, and lateral margin of the elytra, silvery.

Length of the body  $3\frac{1}{2}$  lines.

Taken by Dr. Bigsby in Canada.

## DESCRIPTION.

This species seems intermediate between *O. limbatum* and *O. labiatum*. From the former it differs in having a much fainter tint of green on the darker parts of the body; in its black prothorax with silvery sides as well as margin. From the latter in having the lateral furrows as deep and distinctly punctured as those of the disk; and, instead of two reddish spots near the base of the elytra, having two angulato-undulated bands, one near the base and the other beyond the middle, and the tips, testaceous; all connected by the margin of the same colour. It seems to have escaped the describers of *O. limbatum* that the upper-lip and lateral margin of the prothorax and elytra are likewise silvery, though not so conspicuously as in *O. labiatum* and *Saii*.

The sculpture of the elytra in this genus, as well as in *Calosoma*, differs from that of the other terrestrial predaceous beetles in having more than nine furrows, which appears to be the typical number in the section.

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iii. HYDRADEPHAGA. Mac L.  
a. EUNECHA. Kirb.

Family HALIPLIDÆ. *Haliplidans.*

## XXXIII. Genus HALIPLUS. Lat.

(93) I. HALIPLUS IMPRESSUS. *Impressed Haliplus.*

*Haliplus impressus*. Lat. *Gen.* i, 234, 2, t. vi, f. 6? *N. D. D'H. N.* xiv, 156. *Gyll. Ins. Suec.* i, 547, 3. *Steph. Illustr. Mandib.* ii, 39, 2?

*Dytiscus impressus*. *Fab. Syst. Eleuth.* i, 271, 71. *Payk. Fn. Suec.* i, 235, 49. *Oliv. Ent.* iii, 40, 32, 42, t. iv, f. 40. *Illig. Kaf. Preuss.* i, 260, 30. *Panz. Fn. Germ.* xiv, t. 7. *Thunb. Ins. Suec.* vi, 77. *Schneid. Mag.* 367. *Goeze Eur. Fn.* viii, 745, 7. *Brahm. Ins. Kal.* i, 23, 82.

—— laminatus. *Schall. Hall.* i, 314.

—— flavicollis. *Marsh. Ent. Brit.* i, 430, 47.

Length of the body  $1\frac{1}{2}$  lines, nearly.

One specimen taken in Lat. 65°.

I have added a query to the synonym of Latreille, because, though his description agrees with our insect, his figure does not, for it represents the elytra with eight black spots, which are not to be found in *H. impressus*. Mr. Stephens, in his description, does not mention that the punctures forming the rows on the elytra are black, which in a describer usually so accurate, renders his synonym somewhat doubtful.

## DESCRIPTION.

Body reddish-yellow. Head punctured, dusky behind: prothorax yellow, depressed in the middle posteriorly, with a transverse curved series of punctures in the depression; anteriorly there are five or six black dots arranged transversely; at the base, between the central point and the margin on each side, an oblique little furrow but not easily discoverable, is impressed: elytra pale-yellow with a cinereous tint, nine rows of black punctures on each, those near the lateral margin being the faintest; anteriorly, in the interstices of the rows, there are also a few black punctures; the apex of the elytra is oblique terminating in an acute point: the laminae that cover the posterior legs are punctured.

## XXXIV. Genus HYDROPORUS. Clair.

(94) 1. HYDROPORUS NIGRO-LINEATUS. *Black-lined Hydroporus.*

*Hydroporus nigro-lineatus.* Steph. *Illustr. Mandib.* ii, 52. 6.

*Hyphydrus nigro-lineatus.* Schon. *Syn.* ii, 33, 16, t. iv, f. 2. Gyll. *Ins. Suec.* iii, 688, 13, 14.

Length of the body  $2\frac{1}{2}$ — $2\frac{3}{4}$  lines.

A pair taken in Lat. 65°.

## DESCRIPTION.

Body lurid-yellow, somewhat glossy, minutely and thickly punctured. Antennae dusky at the tip: prothorax with a minute black rhomboidal spot in the disk, which is marked with a punctiform impression; anteriorly it has a transverse series of punctures larger than those of the rest of its surface: elytra most numerous and minutely punctured; the suture, and four longitudinal stripes not reaching the apex, nor the first and third the base, all black; the fourth or outermost is distant from the margin and interrupted: the alitrunk and abdomen are black.

In the female, which is less glossy, the external stripe is continuous, and only the second reaches the base; and in the male the prothorax is more conspicuously punctured, and the anterior series of punctures is wanting.

(95) 2. HYDROPORUS PARALLELUS. (Say.) *Parallel Hydroporus*.Hydroporus parallelus. Say. *Journ. Acad. Phil.* III, i, 153, 1.Length of the body  $2\frac{1}{2}$  lines.

One specimen only taken. Mr. Say took it in the Upper Missouri.

## DESCRIPTION.

Body most thickly and minutely punctured, underneath mostly black. Head black with a pair of vertical dots, a line between the eyes, a triangular spot on the nose and the mouth, reddish-yellow; antennæ dusky at the tip: prothorax reddish-yellow with a large discoidal irregular black spot, which does not reach the anterior margin, and is divided longitudinally by an articulated reddish-yellow stripe; there is likewise a black dot on each side, and the posterior margin is black: the elytra are black with seven very narrow lurid-yellow stripes, which are confluent at the base and apex by pairs; the third from the suture is twice interrupted; a series of punctures adjoins the fourth stripe on the side next the suture: the epipleura and lower margin of the prothorax are lurid-yellow: the legs are testaceous with the four anterior tarsi black.

(96) 3. \* HYDROPORUS LÆVIS. *Smooth Hydroporus*.

*H. (lævis) lævissimus, subtus niger, supra luridus; prothorace postice transverse impresso: maculis duabus, elytrisque lineis sex, maculisque tribus lateralibus, nigris.*

Smooth Hydroporus, very smooth, black underneath, above lurid; prothorax transversely impressed behind: with two spots, elytra with six lines and three lateral spots, all black.

Length of the body 2 lines.

One specimen only taken.

## DESCRIPTION.

Very like the preceding species but smaller; it differs principally in being perfectly smooth and without punctures, even when examined under a powerful magnifier. The head has two larger vertical lurid-yellow spots, and there is a triangle of the same colour between the eyes, which at its base is dilated and occupies the nose and mouth: the prothorax is lurid-yellow, with two oblong oblique dusky spots beyond the middle; towards the base is an obtusangular transverse impression, and on each side, at a little distance from the margin, is an oblong punctiform impression; in the elytra are six distinct narrow black stripes, none of which are confluent except at the apex; at the side, but at some distance from the lateral margin, are three black spots placed in a line, or a stripe wider than the others twice interrupted: the legs are testaceous with the posterior tibiæ black at the tip.

(97) 4. \* **HYDROPORUS PICATUS.** *Pitch-coloured Hydroporus.*

*H. (picatus) obscurus, punctatissimus, supra piccus; capite, antennis, pedibus, prothoraceque antice, ferrugineis, elytris obsolete quadristriatis: striis postice abbreviatis.*

Pitch-coloured Hydroporus, not glossed, very thickly punctured, above piceous; head, antennæ, legs, and prothorax anteriorly, ferruginous: elytra with four obsolete posteriorly abbreviated furrows.

Length of the body  $2\frac{1}{3}$  lines.

A single specimen taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body dark piceous, without gloss; covered, especially above, with an infinity of punctures. Head obscurely ferruginous, dusky behind, with a paler quadrangular spot extending to the mouth between the eyes; antennæ ferruginous; prothorax with its anterior half dark ferruginous, marked with a discoidal punctiform impression or little furrow: elytra with four posteriorly abbreviated punctured furrows, very difficult to be discerned, and only by looking on one side from behind: forebreast and legs ferruginous; alitrunk and abdomen black.

(98) 5. \* **HYDROPORUS SIMILIS.** *Similar Hydroporus.*

*H. (similis) subnitidus, punctatus, supra dilute piceus; capite prothoraceque, antice, pedibus antepectoreque, testaceis; elytris, dimidio basilar grosse punctato et distincte quadristriato.*

Similar Hydroporus, rather glossy, punctured; above piceous with a paler tint; head and prothorax anteriorly, legs and fore-breast, testaceous: basilar half of the elytra coarsely punctured, and with four distinct furrows.

Length of the body  $2\frac{1}{3}$  lines.

Taken with the preceding species?

## DESCRIPTION.

I at first regarded this as the other sex of *H. picatus*, but upon inspecting their tarsi I found they were both males. This species is smaller, more glossy, the parts that in that are dark ferruginous, in this are much paler; the punctures on the upper surface are less numerous and larger, especially those of the basilar half of the elytra, and the four furrows, particularly the three dorsal ones, are deeper and more distinct; the disk of the prothorax also is transversely levigated and impunctured.

Both these insects come very near to *H. picipes*, but that species has not the discoidal impression in the prothorax; and its elytra are dark testaceous, striped with black.

N. B. All the above species belong to Mr. Stephen's second division of the family with the sides of the prothorax rounded.

## XXXV. Genus LACCOPHILUS. Leach.

(99) I. \* LACCOPHILUS BIGUTTATUS. *Two-spotted Laccophilus*.

*L. (biguttatus) niger*; capite, prothorace, pedibusque, pallide flavis; elytris fusco-cinereis gutta marginali obscura flava.

Two-spotted Laccophilus, black; head, prothorax, and legs, pale yellow; elytra cinereous-embrowned, with an obscure yellow marginal spot.

Length of the body 2 lines.

One specimen only taken.

## DESCRIPTION.

Body very smooth, glossy. Head dirty yellow; palpi and antennæ dusky at the tip; manitrunk<sup>1</sup> dirty yellow; elytra embrowned-cinereous, with a line of punctures, as in the other species, adjacent to the suture, and a pale yellow, indistinct, oblong, anterior, marginal spot: legs dirty yellow, posterior tarsi dusky; alitrunk and abdomen nigro-piceous; apex of the segments of the latter reddish-yellow.

This species is smaller than *L. minutus*, which it resembles, and the colour of the elytra and underside of the body differs.

Family DYTISCIDÆ. *Dytiscidans*.

## XXXVI. Genus COLYMBETES. Clair.

(100) I. \* COLYMBETES SEMIPUNCTATUS. *Semipunctured Colymbetes*.

*C. (semipunctatus) ater, nitidus*; ore, antennis, tarsisque quatuor anterioribus, ferrugineis; elytris disco seriatim, latere sparse, punctatis.

Semipunctured Colymbetes, very black, glossy; mouth, antennæ, and four anterior tarsi, ferruginous; elytra punctured in lines on the disk, on the sides without order.

Length of the body  $3\frac{1}{4}$  lines.

One specimen only taken.

## DESCRIPTION.

Body oblong, glossy, very black; above very slightly bronzed; under a powerful magnifier the whole upper surface is most minutely reticulated, and the under covered, with longitudinal scratches. Head with a pair of vertical red crescents placed transversely, and scarcely visible except when the sun shines; upper-lip, palpi, and antennæ ferruginous; mandibles black; prothorax anteriorly with a continuous transverse marginal series of punctures, posteriorly with one widely interrupted in the middle; and in the disk with a minute furrow: elytra with a triple dorsal series of punctures not regularly or singly arranged, with other scattered punctures interjacent especially towards the apex, on the side the punctures, which are not numerous, are scattered without order; in the sutural series the punctures are distant and single; beyond the middle of each elytrum not far from the lateral margin is a red streak, not distinctly visible except in a strong light: the arms are piceous, and the four anterior tarsi ferruginous.

<sup>1</sup> The manitrunk is that part of the trunk that bears the arms or fore-legs. It includes the prothorax and antepectus.

(101) 2. \* COLYMBETES BICOLOR. *Two-coloured Colymbetes.*

*C. (bicolor) ater, ellipticus, convexus, nitidus, ore, antennisque testaceis; pedibus, elytrisque latere externo, brunneis; prothoracis serie postico continuo.*

Two-coloured Colymbetes, very black, elliptical, convex, glossy; mouth, and antennæ, testaceous; legs, and elytra externally, mahogany-colour; posterior series of the prothorax continuous.

Length of the body  $3\frac{1}{2}$  lines.

A single specimen taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body nearly elliptical, convex, smooth, glossy, and very black. Reticulations more visible in the head than in the rest of the surface; a pair of round obscure red spots in the vertex; mouth, palpi, and antennæ, testaceous: anterior transverse series of the prothorax with single punctures at the sides but scattered ones in the middle, posterior series continuous with single and rather distant punctures: elytra externally of a pale mahogany colour; with a double dorsal series of punctures, not numerous nor regularly arranged, which do not reach the apex; there are a very few scattered punctures besides in the side: legs mahogany-colour.

(102) 3. \* COLYMBETES PHÆOPTERUS. *Brown-winged Colymbetes.*

*C. (phæopterus) ellipticus, subdepressus, ater, nitidus; elytris fuscis, margine laterali diluitoribus; ore, antennis, pedibusque, ferrugineis: prothorace serie postico interrupto.*

Brown-winged Colymbetes, elliptical, subdepressed, very black, glossy: elytra brown, externally paler, mouth, antennæ, and legs, ferruginous: prothorax with the posterior series interrupted.

Length of the body  $3\frac{1}{4}$ — $3\frac{1}{2}$  lines.

Two specimens taken in Lat.  $54^{\circ}$ .

## DESCRIPTION.

Body nearly elliptical, rather depressed, smooth, very black, glossy. Head with a pair of transverse obscure red spots in the vertex; mouth and antennæ testaceous: posterior series of the prothorax thickly punctured, and discontinuous in the middle: elytra brown, a little paler at the base and side; epipleura yellow; sculpture of the elytra like that of *C. semipunctatus*, but fewer punctures in the side: legs ferruginous; body underneath longitudinally scratched.

This species appears to be the American representative of *C. paludosus* (*Dytiscus politus* Marsh.) which it nearly resembles, but the anterior part of the front is black, and not yellow as in that species; and the prothorax is wholly black, without a broad rufous margin.

(103) 4. \* COLYMBETES BIFARIUS. *Bifarian Colymbetes.*

*C. (bifarius) ovalis, niger, obscuriusculus; antennis, ore, pedibus, thoracisque margine laterali, rufis; elytris bifariam acuductis.*  
Bifarian Colymbetes, black, not glossy; antennæ, mouth, legs, and lateral margin of the prothorax, rufous; elytra acuducted two ways.

PLATE V, FIG. 6.

Length of the body  $3\frac{1}{4}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body oval, smooth, black, less glossy. Head with a pair of vertical red crescents; mouth, antennæ, and palpi ferruginous; maxillary palpi with the last joint black; prothorax longitudinally acuducted, with the bead of the lateral margin rufous: elytra at the base longitudinally, at the apex transversely, acuducted:<sup>2</sup> forebreast and legs piceo-rufous.

(104) 5. \* COLYMBETES RETICULATUS. *Reticulated Colymbetes.*

*C. (reticulatus) oblongus, niger, supra reticulatim acuductus; elytris nigricantibus; latere, prothoracisque fascia media, flavescens; pedibus ferrugineis.*

Reticulated Colymbetes, oblong, black, acuducted like network; elytra dusky-cinereous, with the side and the mesal band of the prothorax yellowish; legs ferruginous.

Length of the body  $3\frac{1}{4}$  lines.

Three specimens taken in Lat. 65°.

## DESCRIPTION.

Body oblong, black, gloss obscured from its being covered as it were with a web of the finest network, sculptured as if with the point of a needle. Head with a pair of round red vertical spots: prothorax with a yellow mesal band and lateral margin: elytra dusky-cinereous with the side yellowish: legs ferruginous.

(105) 6. \* COLYMBETES PICIPES. *Pitch-legged Colymbetes.*

*C. (picipes) ovalis, supra æneo-niger, obscurus, reticulatim confertissime acuductus; ore antennisque ferrugineis; pedibus quatuor anterioribus piceis.*

Pitch-legged Colymbetes, oval, above bronzed-black; very thickly acuducted like network; mouth and antennæ ferruginous; four anterior legs piceous.

Length of the body  $4\frac{1}{4}$  lines.

Two specimens taken, one in Lat. 54° the other in Lat. 65°.

<sup>2</sup> Plate V, Fig. 6 a.

## DESCRIPTION.

Body oval, black, above slightly bronzed, not glossy, covered above and below like the preceding species, as it were, with a web of net-work; but the reticulations are more minute. Upper-lip, palpi, and antennæ ferruginous; a pair of oval, minute, obscure, red spots mark the vertex: prothorax with the anterior transverse series of punctures double in the middle, the posterior one not easily discernible, discontinuous in the middle: there appear no rows of punctures on the elytra, but a few scattered ones may be discovered: the four anterior legs are piceous.

This species approaches *C. chalconatus*, but it is longer, less glossy, the reticulations of the surface are more distinct, no rows of punctures are discoverable, as in that, on the elytra, which as well as the prothorax are all of one colour; and the posterior legs are black. It seems still nearer *C. ater*, but it is much smaller, less convex, and has no fenestrated spot on the elytra.

(106) 7. COLYMBETES ASSIMILIS. *Similar Colymbetes.*

*C. (assimilis) obovatus, depressus, levis, niger; prothorace flavescenti, immaculato; elytris flavescentibus, nigro creberrime irroratis; pedibus flavis; brachiis brevissimis piceis.*

Similar Colymbetes, obovate, depressed, smooth; prothorax dirty-yellow without spots; elytra dirty-yellow, sprinkled with innumerable black dots; legs yellow: arms very short, piceous.

Length of the body  $5\frac{3}{4}$  lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body rather depressed, between oblong and obovate, smooth, rather glossy, black, covered above with an infinity of very minute reticulations. Head dirty-yellow; vertex black, with a pair of confluent transverse reddish spots: prothorax dirty-yellow, rather dusky in the disk, transverse, punctures nearly obliterated: elytra of the same colour as the prothorax, but sprinkled with innumerable black dots, which however do not extend to the base and sides; a row of more distant and larger dots adjoins the suture: the fore-breast, the base and apex of the other ventral segments of the abdomen, are dirty-yellow; the legs are of the same colour, but the arms are shorter than usual and piceous; the dilated posterior coxæ are sculptured with branching rugosities.

This species represents *C. notatus*, which it is very like, but the elytra are wider towards the apex which gives the insect an obovate shape; the black dots of the elytra are more numerous, and minute; the prothorax is without spots; and the arms or fore-legs are shorter and of a different colour.



(107) 8. \* COLYMBETES TRI-SERIATUS. *Three-rowed Colymbetes.*

*C. (tri-seriatus) niger*; *antennis, pedibusque testaceis; prothorace testaceo fascia discoidali nigra; elytris nigricantibus latere externo flavis, transversim confertissime acuductis, punctis longitudinaliter triseriatis.*

Three-rowed Colymbetes, black; antennæ and legs testaceous; prothorax testaceous with a discoidal black band; elytra dusky, externally yellow, transversely very thickly acuducted, with a triple longitudinal series of punctures.

Length of the body  $7\frac{3}{4}$  lines.

A single specimen taken. I have a specimen also from New England, taken by Professor Peck.

## DESCRIPTION.

Body elliptical, rather depressed, underneath black, and covered with an infinity of branching or confluent wrinkles, as if scratched by a pin or needle. Head black, anteriorly testaceous, between the eyes is a pair of transverse red spots; antennæ and palpi testaceous, dusky at the tips: prothorax testaceous with an abbreviated, subbilobed, discoidal band; variously acuducted so as somewhat to resemble net-work: scutellum ferruginous, black at the base, very minutely and confluent punctured: elytra dusky, which colour, for they are really lurid or dirty-yellow, is produced by an infinity of transverse black lines or furrows, but which at the lateral margin lose their blackness; besides these there are three rows of punctures arranged longitudinally but not regularly, the first adjoining the suture, and the two others being discoidal; between the outer one and the margin, especially near the apex, are some scattered punctures; the epipleura, and sides of the fore-breast, are yellow: legs testaceous; thighs and tibiæ punctured.

This species is intermediate between *C. striatus* and *C. dolabratus*, with the former it agrees in the majority of its characters, particularly in the longitudinal rows of punctures, except that its sutural one is more perfect; and with the latter in the prothoracic band, and the colour of the legs. The transverse furrows of the elytra are rather deeper than those of the first-mentioned species, and not so deep as those of the last.

These insects, adding *C. fuscus*, may perhaps be regarded as forming a subgenus, whose common character is the peculiar sculpture of the elytra.

## v. Subgenus HYDATICUS. Leach.

(108) 1. \* COLYMBETES (*Hydaticus*) RUGICOLLIS. *Wrinkle-necked C. Hydaticus.*

*C. H. (rugicollis) obovatus, subrufus, nigricanti-nebulosus; prothorace longitudinaliter acuductus; elytris flavescens, nigro reticulatis.*

Wrinkle-necked *C. Hydaticus*, obovate, subrufous, clouded with dusky; prothorax longitudinally acuducted; elytra yellowish, reticulated with black.

Length of the body 6 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body rather obovate and depressed; underneath rufous clouded with dusky. Head subrufous, dusky behind; antennæ and palpi yellowish, dusky at the tip: prothorax with the posterior angle acuminate, subrufous, dusky in the disk, posteriorly scratched longitudinally as if by a pin: elytra pale-yellow, thickly and minutely reticulated or vermiculated with black; lateral margin yellow, unspotted; epipleura yellow; prosternum depressed.

This species appears to represent *C. H. irroratus*.

(109) 2. \* COLYMBETES (*Hydaticus*) MAC CULLOCHII. *Mac Culloch's C. Hydaticus*.

*C. H. (Mac Cullochii) obovatus, depressus, niger, nitidus; ore, antennis, pedibusque quatuor anterioribus, prothoracis limbo fasciaque, elytris que fascia undulata, punctoque apicis, pallidis.*

Mac Culloch's *C. Hydaticus*, obovate, depressed, black, glossy; mouth, antennæ, four anterior legs, limb and band of the prothorax, and undulated apical band and dot of the elytra, all pallid.

Length of the body  $5\frac{3}{4}$  lines.

Several taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body obovate, depressed, glossy; underneath black, confluent punctured and wrinkled. Head posteriorly minutely punctured, black; nose, mouth, and its organs, and a band between the eyes, pale yellow; antennæ pale with the joints above dusky at the tip: prothorax punctured, pale-yellow, with a discoidal band, dilated at each extremity and surrounded by a black margin, of the same colour: elytra black, sprinkled with innumerable pale-yellow dots; near the apex is a pale, angular, undulated band, and beyond it a round white spot; the margin of the elytrum is paler than the rest: the three intermediate ventral segments of the abdomen have each a pair of roundish pale spots, one on each side; the four anterior legs are pale-yellow.

## XXXVII. Genus DYTISCUS. Linn.

(110) 1. DYTISCUS OOLIGBUKII. *Ooligbuk's Dytiscus*.

*D. (Ooligbukii) oblongo-ovatus, olivaceo-niger; subtus flavo-testaceus, suturis et segmentorum marginibus, nigris; prothoracis limbo, elytrorumque latere, flavis; his apice punctatis foveolatisque; metasterni lobis acuminatis.*

Ooligbuk's *Dytiscus*, oblong-ovate, olive-black; underneath yellowish-red with the sutures, and the margins of the segments, black; limb of the prothorax and side of the elytra yellow; the latter punctured and foveolated at the apex; lobes of the metasternum acuminate.

Length of the body } Male 1 inch and 4 lines.  
 } Female 1 inch and 5 lines.

A pair were taken by the Esquimaux Ooligbuk in the Great Bear Lake River.

## DESCRIPTION.

♂

Body reddish-yellow underneath, above olive-black. Head minutely but thinly punctured; mouth, nose, and antennæ yellow; there is a red angular spot on the vertex: prothorax obsoletely channelled, minutely and thinly punctured, with the limb widely yellow, but less so behind where the yellow sends two teeth into the black disk; an anterior and posterior transverse line of larger punctures are also visible: scutellum wholly black: elytra with two discoidal longitudinal rows of punctures; three others, in which the punctures are more distant and less conspicuous, are interposed, one between the suture and the first row, the next between the first and the second, and the third between the second and the lateral margin; there are besides a few scattered and very minute punctures; at the apex these rows are all lost in a number of scattered punctures intermixed with punctiform impressions; the side of the elytra, the external half of their base, and an oblique gleam at the apex are all yellow, which colour though occupying a considerable breadth of the side, at the base and apex is a narrow strip:<sup>3</sup> the sutures of the breast and margins of the ventral segments of the abdomen are black or dusky; scapulars rather thickly, deeply, and confluent punctured; lateral angles of the mesostethium wrinkled; posterior dilated; coxæ thinly punctured, legs yellow; the lobes of the metasternum are acuminate as in *D. circumflexus*.<sup>4</sup>

♀

The female differs from the male, in having the yellow parts redder, especially on the under-side of the body; the head and the prothorax are more thickly and distinctly punctured; the angular red signature of the vertex reaches the red spot between the eyes and the nose; the elytra are ploughed out into ten deep furrows, the external ones being the widest, there is also a very short one between the sixth and seventh at the base; these furrows approach the end of the elytrum, and most of them terminate in a series of punctiform impressions which nearly reach the tip; the eighth and ninth furrows are shorter than the rest, and included between the confluent ends of the seventh and tenth; the whole elytrum is thickly and visibly punctured; the scutellum is piceous: the mesostethium is black with a large anterior yellow spot; the sutures and the margin of the segments are more widely and distinctly black than in the male.

I at first regarded this as a variety of *D. marginalis*, and it is probably the species to which Linné refers as found in North America: but upon a close examination I am convinced that *D. Ooligbukii*, though the representative of that species, is not synonymous with it. The lobes of the metasternum which terminate in a long acumen like those of *D. circumflexus* sufficiently prove this; the prothorax of the male is shorter and more distinctly punctured, and the elytra less so. The female has a little furrow between the sixth and seventh, not in *D. marginalis*; the furrows are all parallel, and fall short of the apex one third of the length of the elytrum—other more minute differences are also observable.

As this species was taken by the useful, worthy, and honest Esquimaux Ooligbuk, I trust I may be excused for giving to it his name.

<sup>3</sup> If the elytra are rubbed hard, the black colour comes off and leaves the yellow.

<sup>4</sup> Curtis, *Brit. Ent.* iii, t. xcix, f. c.

(111) 2. \* **DYTISCUS HARRISII.** *Harris's Dytiscus.*

*D. (Harrisii) niger, prothoracis limbo, elytris latere et fascia obliqua integra apicis, luteis; brachiis, femoribusque badiis; metasterni lobis apice rotundatis.*

Harris's Dytiscus, black; limb of the prothorax, side and oblique entire apical band of the elytra, reddish-yellow; arms and thighs, pale chestnut; lobes of the metasternum rounded at the apex.

Length of the body 1 inch and 8 lines.

One specimen taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black, underneath banded and clouded with pale chestnut. Head smooth; nose, upper lip, and palpi, reddish-yellow; the latter with the last joint dusky; between the eyes is an obscure, roundish, red spot: prothorax smooth except an anterior transverse series of punctures which does not reach the sides; as in the preceding species it is surrounded by a broad reddish-yellow margin: sculpture of the elytra like that of *D. Ooligbukii*, &c. but not so grossly punctured at the apex; side reddish-yellow, the yellow stripe terminating in a fork or two branches, the upper one not consisting of dots as in *D. marginalis*, &c. but entire and toothed: a reddish-yellow arch marks the dilated posterior coxæ, and the base of the abdomen is of the same colour; arms and thighs, pale chestnut, tibiæ and tarsi of the four posterior legs black: the lobes of the metasternum are remarkably obtuse.

I have named this insect after a very eminent American Entomologist, Dr. T. W. Harris, who well merits such distinction.

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vi. \* Subgenus LEIONOTUS.

*Elytra feminea haud sulcata.*

Several species of *Dytiscus* being already known, distinguished from the typical group by the females having elytra without furrows, and as smooth as those of the male, as, for instance, *D. conformis*, *circumcinctus*, &c.<sup>5</sup> it is evident that they form a distinct group, and of that kind now denominated a subgenus.

<sup>5</sup> See Gyll. *Ins. Suec.* iv, 370, 1, 371, 2.

(112) 1. \* *DYTISCUS (Leionotus) FRANKLINII. Franklin's D. Leionotus.*

*D. L. (Franklinii) oblongo-ovatus, nitidissimus; subtus nigricans, supra nigro-olivaceus; ore, thoracis limbo, elytrisq̄ latere, flavicantibus: his juxta suturam seriatim obsoletissime granulatis; metasterno lobis acutis divergentibus.*

Franklin's *D. Leionotus*, oblong-ovate, very glossy; dusky underneath, above dark-olive; mouth, margin of the prothorax, and side of the elytra, yellowish; elytra near the suture with some very obsolete rows of granules; lobes of the metasternum sharp, diverging.

## PLATE II, FIG. 1.

Length of the body 1 inch and 4 lines.

A pair taken in Lat. 65°.

## DESCRIPTION.

♂

Body oblong-ovate, glossy as if covered with varnish; underneath black spotted and banded with pale chestnut; above dark olive, in certain lights of a beautiful olive-green. Head with a very few minute, scarcely discernible, punctures; antennæ chestnut; mandibles and palpi black; nose, upperlip, margins of the prothorax, and side of the elytra, dusky yellow: prothorax distinctly channelled, surrounded within the margin with an irregular series of punctures, interrupted at all the angles, and in the middle anteriorly and posteriorly: elytra sculptured as in the two preceding species, except that there are several very obsolete rows of flat granules scarcely discernible between the suture and the first row of punctures; and there is no yellow oblique band or gleam near the apex: legs black, with the arms and intermediate thighs dusky or dusky lurid; the lobes of the metasternum very acute, more than usually diverging, incurved a little at the apex.

♀

Head more visibly, though still very minutely, punctured: prothorax minutely punctured: elytra more coarsely punctured at the apex: legs dusky lurid, posterior tibiæ darker, tarsi black; scapulars, and parapleuræ grossly punctured; angle of the mesostethium wrinkled; posterior coxæ lightly, but not thickly, punctured; lobes of the metasternum very acute, not incurved at the apex.

This species a good deal resembles *D. L. conformis*, but it is larger, the legs are darker, the elytra do not exhibit traces of three or four obsolete flat ridges, but in the interstices between the suture, and the first and second rows of punctures, are several rows of obsolete, very minute, flat granules or tubercles not easily discernible except under a strong magnifier: the lobes also of the metasternum diverge more than in the species alluded to.

b. GYRONECHA. Kirb.

Family GYRINIDÆ. *Gyrinidans.*

XXXVIII. \* Genus CYCLINUS.

*Labrum* transverse, anteriorly circumscribed by the segment of a circle, at the apex ciliated.*Labium* with the intermediate lobe very short, truncated; the lateral ones large, longer than the tongue, externally rounded.*Mandibulæ* very short, concealed by the labrum.*Maxillæ* with the upper lobe obsolete, the lower one unguiform.*Palpi* very short, clavate with the last joint subsecuriform, obliquely truncated.*Lingua* subquadrangular.*Antennæ* obliquely subtruncated at the apex.

Body depressed, obovate; scutellum covered; elytra with nine obliterated furrows; arms shorter than the body.

The genus whose characters are here given, and the type of which is *Gyrinus Americanus*, occupies an intermediate station between *Dineutus* Mac Leay<sup>6</sup> and *Gyrinus*. From the former it differs in having a ciliated upper-lip, truncated antennæ, and arms shorter than the body; and probably in other characters not noticed in Mr. Mac Leay's brief description and definition of the genus. It is distinguished from *Gyrinus* by its broad, depressed body; by the different shape of the last joint of its palpi, and by having no apparent upper lobe to its maxillæ:<sup>7</sup> it has likewise no visible scutellum, and the elytra have only nine obliterated furrows, whereas in most *Gyrini* there are eleven. The tongue (or labium of most modern authors<sup>8</sup>) is much shorter in *Gyrinus* with a pair of deep impressions. The genus here laid down appears to be widely dispersed as I have specimens belonging to it from India as well as from America.

(113) I. \* CYCLINUS ASSIMILIS. *Similar Cyclinus.**C. (assimilis) niger, elytris subsulcatis: sulcorum interstitiis punctulatis, apice undulatis.*Similar *Cyclinus*, black; elytra slightly furrowed, with the interstices of the furrows minutely punctured; apex of the elytra undulated.Length of the body  $5\frac{1}{2}$  lines.

Two specimens taken in Lat. 54°.

<sup>6</sup> *Annulos. Javan.* i, 30, 57.<sup>7</sup> Mr. Curtis, in his *British Entomology*, (ii, t. 79,) has figured the maxillæ of *Gyrinus bicolor*, which have evidently a spiniform upper-lobe, (f. 3,) but in a very good preparation of the Trophi of *G. natator*, in my cabinet I can discover no trace of it, in either maxilla. Can it be a sexual distinction?<sup>8</sup> *Introd. to Ent.* iii, 419, 450.

## DESCRIPTION.

Body depressed, obovate; underneath glossy, black, slightly bronzed; upper-lip minutely punctured; front wrinkled between the eyes; nose impressed on each side: prothorax anteriorly on each side with a transverse series of punctures parallel with the margin, and with a slight discoidal transverse impression; at the base obtusangular and somewhat wavy: elytra with nine very slightly impressed furrows, the interstices of which are minutely punctured; at the apex the elytra are wavy; epipleura black-bronzed: legs and anus testaceous.

This species approaches very near to *Gyrinus Americanus* belonging to the same genus, of which I at first regarded it as merely a variety, but upon comparing it with the specimen preserved in the Linnean cabinet, it appears clearly distinct. That species is smaller, bronzed above, and the interstices of the furrows are without punctures.

## XXXIX. Genus GYRINUS. Linn.

(114) 1. \* GYRINUS IMPRESSICOLLIS. *Channel-necked Gyrinus.*

*G. (impressicollis) cæruleo-niger, nitidus; prothorace anteriori transverse profunde impresso; elytris margine, et striarum punctulis, æneo-nitentibus; apice sparse punctatis obtusissimis.*

Channel-necked Gyrinus, blue-black, glossy; prothorax anteriorly with a deep transverse impression; margin of the elytra and punctures of their furrows glittering and bronzed; apex very obtuse and irregularly punctured.

Length of the body 4 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body glossy, black underneath, above blue-black. Head a little bronzed; nose transversely impressed, wrinkled; frontal impressions large and deep: prothorax with a deep anterior transverse impression, reaching nearly from side to side, in the centre of which is also a deep punctiform impression, and behind it on each side two others, but wrinkled and more shallow; on each side also is a large gibbosity or boss: elytra nearly oblong, with eleven rows of shining bronzed punctures; at their apex the punctures are scattered, the margins also are bronzed; epipleura black; the tip of the elytra is very obtuse and almost truncated: legs rufous.

This species is very near *G. marinus*, but it is much larger, and is sufficiently distinguished from it by the deep furrow or channel that runs quite across the prothorax, its more prominent bosses, and its impressions. In *G. marinus*, also the punctures at the tip of the elytra are not scattered, but mark out a crescent-shaped area, and the apex itself is not so obtuse.

(115)            2. GYRINUS ÆNEUS. (Leach.) *Bronzed Gyrimus.*

*Gyrinus æneus.* Sam. *Nom.* i, 20. Curt. *Brit. Ent.* ii, 79. Steph. *Illustr. Mandib.* ii, 95, 1.

Length of the body  $2\frac{4}{5}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Very like the preceding species, but much smaller, the transverse impression of the nose and the frontal impressions are not so deep; that of the prothorax is not so conspicuous, and there are no lateral bosses; the elytra are much narrower at the apex, where, as in *G. marinus*, a crescent is marked out by punctures.

(116)            3. \* GYRINUS VENTRALIS. *Ventral Gyrimus.*

*G. (ventralis) nitidus, subtus ferrugineus, supra caeruleo-niger; elytris margine omni, et striarum punctalis, æneo-nitentibus.*

Ventral Gyrimus, glossy, underneath ferruginous, above blue-black; both margins of the elytra, and the punctures in the rows, brilliantly bronzed.

Length of the body  $2\frac{2}{3}$  lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Nearly related to *G. æneus*, but the whole prone surface of the body, the epipleura of the elytra, and the legs, are ferruginous; in which particulars it resembles *G. lineatus*; it is however much smaller than that species, the punctures in the rows are more conspicuous, and the elytra have no bronzed stripes.



(117) 4. \* GYRINUS ANALIS. *Anal Gyrinus.*

*G. (nalis) nitidus, inferne piceus; ano, antepectoris lateribus, labio, pedibusque, rufis; superne cæruleo-niger; elytris margine omni, striarumque punctulis, æneo-nitentibus; epipleura piceo-ænea.*

Anal Gyrinus, glossy, underneath piceous; anus, sides of the forebreast, under-lip, and legs rufous; above blue-black; elytra with both margins, and the punctures in the rows, brilliantly bronzed; epipleura piceous-bronzed.

Length of the body 3 lines.

One specimen taken in Lat. 54°.

## DESCRIPTION.

Near the preceding, but larger, punctures of the rows larger: breast-bones<sup>9</sup> black; mouth, sides of the forebreast, anus, and legs, rufous; the remainder of the underside of the body, piceous: side-covers bronzed with a piceous tint.

(118) 5. GYRINUS MINUTUS. (Fabricius.) *Minute Gyrinus.*

*Gyrinus minutus.* Fab. *Suppl.* 65, 8. *Syst. Eleuth.* i, 276, 10. *Latr. Gen.* ii, 61, 2. *Hist. Nat.* viii, 153. *Gyll. Ins.*

*Suec.* i, 143, 5. *Steph. Illustr. Mandib.* ii, 96, 3.

—— *Natator.* *Var. β.* *Payk. Fn. Suec.* i, 239, 1.

—— *bicolor.* *Oliv. Ent.* iii, 41, 14, 8; *t. i,* *f.* 8.

—— *Kirbii.* *Marsh. Ent. Brit.* i, 100, 2.

Length of the body 2 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

VARIETY B. Body above blue-black, with the sides, particularly of the prothorax and elytra, bronzed; underneath piceous, with the lobes of the metasternum, anus, and legs, rufous: epipleura rufo-piceous. In other respects it precisely resembles the European specimens.

<sup>9</sup> By this term are meant the pieces of which the breast is composed. See *Introd. to Ent.* iii, 541, 560, 573.

## II. BRACHELYTRA. Cuv.

Having described the insects included in my plan belonging to the first great Coleopterous group, or section, both terrestrial, intermediate, and aquatic, I must now turn my attention to the next, but which ought to be regarded as such, is a question not yet fully decided; since different Entomologists, and those of the first eminence, having quitted the *Adephaga*, or predaceous beetles, distinguished by the upper-lobe of their maxillæ being palpiform, have pursued different routes. M. Latreille places next to the aquatic *Adephaga* the *Brachelytra* of Cuvier, consisting of the great Linnean genus *Staphylinus*; while Mr. W. S. Mac Leay takes next the remainder of the aquatic beetles, as forming one great group, which he denominates *Philhydrida*.<sup>1</sup>

This gentleman seems to wonder that so acute an Entomologist as M. Latreille should not perceive an affinity which almost all other investigators of insects have acknowledged:<sup>2</sup> the last mentioned author, however, in his most recent work, perhaps with a view to this objection, has assigned his reasons for this opinion, and they seem not devoid of weight. "The anatomy," he observes, "of these insects, differs essentially. The alimentary canal of the *Hydrophili*, has considerable analogy by its length, surpassing four or five times that of the body, and by its texture, with that of the Lamellicorns (*Scarabæus L.*) and approaches that of the *Adephaga* only with regard to its biliary vessels. They have neither the natatory vesicle, nor the excrementital apparatus which characterizes the *Dytiscidæ*. In the females that apparatus is replaced by organs secreting the matter that forms her egg-cocoon. Finally, the male genital organs have the closest affinity with those of the preceding family:"<sup>3</sup>—viz. the *Clavicornes* including the *Silphidæ*, &c. M. L. Dufour also observes, that this structure of the male genital organs, justifies M. Latreille in placing his *Palpicornes* (*Hydrophilus*, &c.) where he does.<sup>4</sup>

If we further compare the oral organs of *Hydrophilus* with those of *Dytiscus*, we shall find a striking difference. The mandibles are not precisely like those of any other genus, but in one respect they resemble those of many Lamellicorns; at the base, on the inner side, they are furnished with a large molar space or plate,<sup>5</sup> but not striated. They are evidently fitted for strong work; at the apex is a stout

<sup>1</sup> *Annulos. Javan.* 6.

<sup>4</sup> *Ibid.* note 1.

<sup>2</sup> *Ibid.* 32.

<sup>3</sup> Latr. *Crust. Arachn. et Ins.* i, 519.

<sup>5</sup> *Linn. Trans.* xiv, 105. *Introduct. to Ent.* iii, 435.

somewhat conical tooth, rather obtuse with a lateral prominence; then follow three flat rather distant teeth emarginate at the apex, which appear to act as incisives, intermixing somewhat of a molar structure; and next succeeds the molar plate: now this is as dissimilar as possible to the toothless mandible of a *Dytiscus*.<sup>6</sup> The maxillæ are equally dissimilar,<sup>7</sup> those of *Hydrophilus* approaching those of a *Silpha*, except that the spine on the lower lobe is truncated, and terminates in two unguiform bristles. The lower-lip and the tongue also exhibit no resemblance.<sup>8</sup>

The affinity, therefore, of *Dytiscus* and *Hydrophilus*, cannot be proved by those characters, which are usually and properly regarded as the most essential indications of it; and recourse must be had to characters that have been judged less important, such as their being cohabitants of the same element, exhibiting a striking resemblance in their general aspect and form, and in their external parts and organs: and here I must candidly own, that, with the exception of the antennæ, and the hands of the male, the resemblance is most striking, and can scarcely be the effect of any thing, for analogy seldom extends to so many points of agreement, but a near approach to each other.

It may be further argued, that some insects of the tribe make a nearer approach in their more essential characters than *Hydrophilus* itself—this appears to be the case with *Spercheus*, with respect to the palpiform or upper lobe of its maxillæ,<sup>9</sup> *Parnus* in its mandibles,<sup>1</sup> &c. and future observers may make further discoveries.

The above observations, however, prove that M. Latreille was not led by mere system to doubt the connection of the two groups in question. His greatest error, as it seems to me, was that of placing his *Serricornes* (*Buprestis*, *Elater*, &c.) before his *Clavicornes* and *Palpicornes*, which clearly have no business there, since they separate tribes that ought not to be disunited. To me the last-named tribe, or *Philhyridæ* of Mr. Mac Leay, appears to bear the same relation to the *Hydradephaga*, that the former, or *Necrophaga* of the same author, do to the *Geadephaga*, but there seems to be an osculant group necessary to connect the latter, which appears not wanted in the former. The group to which I allude is the *Brachelytra*, or *Staphylinus* of Linné: and these M. Latreille, though they connect at least in two points with the *Geadephaga*, and scarcely in any with the *Hydradephaga*, has placed after the latter: nor could he do otherwise in a linear arrangement, without breaking up the great and natural group of the *Adephaga*; unless indeed he had

<sup>6</sup> Compare Curtis *Brit. Ins.* v, t. 239, f. 2, with iii, t. 99, f. 2.

<sup>7</sup> *Ibid.* f. 2.

<sup>8</sup> *Ibid.* f. 4.

<sup>9</sup> *N. D. D'H. N.* xxxi, 573. *Annulos. Javan.* i, 33.

<sup>1</sup> *Oliv. Ins.* iii, 41, t. i, f. 1, b; comp. Curtis *Brit. Ins.* ubi supr. f. 2.

followed Mr. Mac Leay's arrangement, which places the *Brachelytra* at the end of his circle of *Chilopodimorpha*: but as he does not connect it with the point from which he at first sets out, nor indeed with any of his *Cicindelidæ*, it seems to fall short of his system. Connected as it is, as I shall presently shew, with the *Geodephaga* and *Necrophaga* of Mac Leay, on each side by more than one link, even this would not lead to a natural arrangement.

We see then, as in the former instance, that both these gentlemen, according to their different views, were correct, and followed nature; Mr. Mac Leay, in placing the *Philhydrida* next to the *Hydradephaga*, and M. Latreille, in placing the *Brachelytra* next to the *Adephaga* in general. I shall now assign the reasons which induce me to prefer M. Latreille's arrangement.

Scarcely any tribe of insects seems to be found in such various situations and in such different substances as the one in question. Some are found in dry and sandy spots; others in humid ones; some under stones; others in chalk; some under bark; others in the wounds of trees where the sap exudes; some on the shore of the sea, or of æstuaries under the sea-weed; others under or in decaying vegetable substances; some again in flowers; many in the various kinds of fungi; the majority perhaps in cow-dung; and several, lastly, in dead flesh and the carcasses of animals. But though their range is thus nearly universal, and the substances they frequent are so various, are we from hence to conclude that these substances are their appropriate food, or may we not rather infer that their principal object in frequenting most of them is to devour the larvæ of other insects that are bred there? Olivier and Latreille appear both to have been of this opinion;<sup>2</sup> and if we examine the insects themselves we shall find characters, in the majority of them, that indicate a predaceous character. Their very aspect, at least that of many, excites the idea of a ferocious animal; especially when they move with their threatening jaws expanded, and their abdomen turned over their back, like the scorpion when preparing to strike. These jaws also, or mandibles, much resemble those of the *Adephaga*, and are of a laniary description, which could only be useful to predatory animals, to enable them to seize and lacerate their prey; they usually also cross each other at the tip like the tribe just named, especially the *Cicindelidæ*. The maxillæ too of the generality have the upper lobe palpiform and biarticulate,<sup>3</sup> though not so slender as in the *Adephaga*. Their alimentary canal, as appears both from Ramdhor and L. Dufour,<sup>4</sup> does not essentially differ from that of the

<sup>2</sup> Oliv. *Ins.* iii, No. 42, 3. Latr. *N. D. D'H. N.* xxxii, 116.

<sup>3</sup> Grav. *Micr. Prolegom.* xxxix, note, says they are triarticulate, but they are not so in *Goerius olens*.

<sup>4</sup> Ramdh. *Verd. Ins. t.* iii, f. 6. Latr. *Crust. Arachn. et Ins.* i, 433, note 2.

tribe just named. It must not, however, be forgotten, that predaceous animals will sometimes content themselves with vegetable diet, and vice versa herbivorous ones will sometimes attack animal matter. Cats will eat bread; I have seen, more than once, *Harpalidæ* devouring the seeds of umbelliferous plants; *Silpha 4-punctata*, Mr. Mac Leay informs us, ascends the oak for the purpose of devouring caterpillars: the same learned Entomologist remarks, with respect to carnivorous *Coleoptera*, "that as the aberrant insects of any group leave the living animal food, which forms the entire subsistence of the normal part of the same group; they prey on dead animal matter, or, in preference to other vegetable matter, on fungi,"<sup>5</sup> to which it may be further added, in preference to fresh vegetable matter, on putrid or putrescent—thus *Creophilus*, an aberrant Brachelytrous genus approaching *Silpha*, lives on dead flesh, and others, as *Oxyporus*, on fungi.

From all the circumstances and characters above detailed, it seems evident, that, with the exceptions just stated, the *Brachelytra* may generally be looked upon as predaceous, therefore I regard their affinity to the *Geadephaga* as more intimate than that of the *Philhydrida* to the *Hydradephaga*.

There are two points by which the group in question may enter that of the terrestrial *Adephaga*: one is that which Mr. Mac Leay has indicated, and which has been adopted in Mr. Stephens' Systematic Catalogue, by *Lesteva* Lat. (*Anthophagus* Gravenh.) which appears connected with those that have truncated elytra, as *Lebia*, &c.; and the other is by the *Stenidæ*, which exhibit as much of a Cicindelidan port and aspect as the other does of a Carabidan. These appear to approach towards *Colliuris*, not only by their narrow bodies and clavated antennæ, but likewise in having truncated elytra.

Led by these considerations, I shall now proceed in the first place to the description of the *Brachelytra* upon my list, as coming next the terrestrial *Adephaga*, from which I shall proceed to the *Necrophaga*, or *Clavicornes* of M. Latreille's last work, and from them to the *Philhydrida*, or *Palpicornes* of the latter author, as the group that connects with the aquatic ones, which will still maintain Mr. Mac Leay's circular distribution though inverted.

I must here observe, that, after Linné and Fabricius, Mr. Stephens, in the work lately quoted, has made the *Brachelytra* his last coleopterous group, thinking perhaps that their abbreviated elytra connects them with *Forficula*, and their anal styles, which sometimes, as in *Dianous* Leach, become setæ, with *Blatta*: at the

<sup>5</sup> *Annulos. Javan. i, 37.*

same time regarding them as the last group in the great circle of Coleoptera connected with the first by *Anthophagus*.

Not having so clear a view of the divisions and subdivisions of this section of *Coleoptera*, I have contented myself mostly with indicating the families to which the North American species here described belong.

i. HOMOGENEA. Kirb.

Family PÆDERIDÆ. *Pæderidans*.

XL. Genus PÆDERUS. Fab.

(119) 1. PÆDERUS RIPARIUS. (Fabricius.) *Bank Pæderus*.

*Pæderus riparius*. Fab. *Syst. Eleuth.* ii, 608, 1. Oliv. *Ent.* iii, 44, 4, 2, t, i, f. 2. Payk. *Fn. Suec.* iii, 427, 2. Panz. *Fn. Germ.* ix, t. xi. Grav. *Micr.* 62, 5, 2. Gyll. *Ins. Suec.* I, ii, 372, 1. Ced. *Fn. Ingr.* 373. Ross. *Fn. Etrusc.* 626. Hellw. *Fn. Etrusc.* 626. Leach. *E. E.* ix, 91. Sam. *Compend.* 173, t. iv, f. 12. Steph. *Illustr. Mandib.* v, 280. Lat. *Hist. Nat.* ix, 345, 2, t. lxxix, f. 8.

*Staphylinus riparius*. Linn. *Fn. Suec.* 846. *Syst. Nat.* ii, 684, 8. De Geer. *Ins.* iv, 28, 14, t. i, f. 18. Marsh. *Ent. Brit.* i, 503, 17. Donovan. *Brit. Ins.* v, t. 167. Vill. *Ent.* i, 414, 8. Schrank *Enum.* 441. H—r. *Ins.* 407. Martin *Eng. Ent.* t. xli, f. 23. Schæff. *IC.* t. lxxi, f. 3. Berk. *Syn.* i, 110. Stew. *Elem.* ii, 89.

Length of the body 3 lines.

Several taken in Lat. 54°.

DESCRIPTION.

Head, breast, two last joints of the abdomen, base of the tibiæ and apex of the thighs, black: prothorax, legs, and four first segments of the abdomen testaceous: elytra dark blue; antennæ dusky.

Family LATHROBIDÆ. *Lathrobidans*.

XLI. Genus LATHROBIUM. Grav.

(120) 2. \* LATHROBIUM PUNCTICOLLE. *Puncture-necked Lathrobium*.

*L. (puncticolle) nigrum*; prothorace fere toto punctato; elytris thorace longioribus, antennis? pedibusque, castaneis. Puncture-necked *Lathrobium*, black; prothorax nearly all punctured, elytra which are longer than the prothorax, antennæ? and legs, dark chestnut.

Length of the body 5 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black, rather glossy, hairy except the prothorax. Head obovate, minutely and thickly punctured; mandibles, palpi, and what remains of its mutilated antennæ, dark chestnut: prothorax an oblong square with all the angles rounded; punctured, but not very thickly, with scarcely any smooth longitudinal space: elytra longer than the prothorax, thickly punctured, of a dark chestnut: legs mahogany, cubit armed with a short wide tooth or prominence on the inner side at the base, the four first joints of the hand are dilated, indicating probably that the specimen is a male. This appears to be the representative of *L. dentatum* F, which it nearly resembles, but the elytra are considerably longer, the colour of the legs is darker, and the humerus, or anterior thigh, is proportionally smaller and has no tooth.

(121) 3. \* LATHROBIUM GRAVENHORSTII. *Gravenhorst's Lathrobium.*

*L. (Gravenhorstii) nigrum; antennis pedibusque testaceis; elytris castaneis; prothorace punctato spatio distincto longitudinali levi.*  
Gravenhorst's Lathrobium, black; antennæ and legs testaceous; elytra dark chestnut; prothorax punctured with a distinct longitudinal smooth space.

## PLATE II. FIG. 2.

Length of the body 4—4½ lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

This species a good deal resembles the preceding, but the palpi, mouth, scape of the antennæ, and legs, are testaceous, the remainder of the antennæ is darker; mandibles chestnut. Head oblong: anterior angles of the prothorax scarcely rounded; a distinct intermediate longitudinal smooth space adjoining which is a series of punctures strikingly distinguishes this species from *L. puncticolle*, the sides of the prothorax are covered with scattered punctures: the tip of the segments of the abdomen, ventral as well as dorsal, is testaceous.

(122) 4. LATHROBIUM BICOLOR. (Gravenhorst.) *Bicolorate Lathrobium.*

*Lathrobium bicolor.* Grav. *Micr.* 179, 1.

Length of the body 4¾ lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body testaceous, hairy. Head oblong, wider than the prothorax, black, thickly punctured; mandibles and other oral organs dusky-rufous; antennæ nearly as long as the prothorax, of the same colour but paler at the base and apex: prothorax punctured with a smooth longitudinal intermediate space: elytra thickly punctured: abdomen black, anus testaceous.

Gravenhorst describes Knoch's specimen, which also came from North America, as having dark chestnut thorax, elytra and anus; in the specimen here described they are of the same colour with the legs. The difference, as they agree in other respects, is probably accidental.

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Family GYROHYPNIDÆ.<sup>6</sup> *Gyrohypnidans*.

XLII. \* Genus GYROHYPNUS. Kirb. Steph.

(123) I. \* GYROHYPNUS ASSIMILIS. *Similar Gyrohypnus*.

*G. (assimilis) niger*; prothorace seriebus dorsalibus multipunctis, antennis rufis; elytris pedibusque flavo-testaceis: illis apice nigricantibus.

Similar Gyrohypnus, black; prothorax with its dorsal series many-punctured; antennæ rufous; elytra and legs yellowish-testaceous, the former blackish at the tip.

Length of the body 9 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

This species approaches very near to *G. ochraceus*, but it is more slender in proportion to its length. Body black and glossy. Head rather larger than the thorax, behind the eyes are some rather large scattered punctures; antennæ and palpi rufous; neck rufo-piceous: prothorax piceous, with a triple series of punctures on each side leaving a discoidal smooth space; the dorsal ones consist of seven or eight punctures, and the intermediate ones are really a continuation of the dorsal, since by the intervention of a puncture or two both are united so as to form a figure resembling a bishop's crosier; the lateral series consists of a very few points, not easily seen; near the anterior angle the elytra are scarcely longer than the prothorax, punctured, with some of the punctures arranged in rows and others scattered; from the humeral to the inner apical angle, they are internally yellowish-red, and externally blackish: legs yellowish-red.

<sup>6</sup> The species of this family when they sleep, or are in a torpid state, roll themselves up like a serpent. See Stephens' *Illustr. Mandib.* v, 258.



ii. HETEROGENEA. Kirb.

Family OMALIDÆ. *Omalidans.*

It appears to me that the pentamerous genera *Micropeplus*, *Proteinus*, *Omalium*, *Lesteva*, &c. belong to a distinct tribe from the trimerous ones, *Oxytelus*, &c. As this tribe includes genera that lead towards *Nitidula*, *Catheretes*, &c. on one side, as *Micropeplus* and *Proteinus*; and towards *Lebia*, &c. as *Lesteva*, on the other, I have given it a name indicative of that circumstance.

The reader will here recollect that having described those *Brachelytra* that lead to *Stenus*, of which last there were none taken in the Expedition, and so connecting with one branch of the *Geadephaga*, I now go to the insects nearest to *Lesteva*, of which likewise there were no specimens, which lead to another.

## XLIII. Genus OMALIUM. Grav.

(124) I. \* OMALIUM MARGINATUM. *Margined Omalium.*

*O. (marginatum) piceum, nitidum, punctatum; prothorace utrinque latius marginato, trifoveolato; pedibus, antennisque rufis.*  
Margined *Omalium*, piceous, glossy, punctured; lateral margins of the prothorax rather wide, with three punctiform impressions; legs and antennæ rufous.

Length of the body  $1\frac{3}{4}$  lines.

One specimen taken in Lat. 65°.

## DESCRIPTION.

Body piceous, glossy, naked, rather grossly punctured. Head narrower than the prothorax; eyes prominent; antennæ rather longer than the head and thorax, dusky-rufous: prothorax rather wider than long, lateral margin somewhat dilated; near it, and partly in it, is a deep punctiform impression, and above the scutellum another obsolete one: elytra something wider than the prothorax, and nearly as long as the abdomen, paler at their apex: legs dusky-rufous.

This species is related to *O. tectum*, but it is more grossly punctured, the lateral margin of the prothorax is much more dilated, and the punctiform impressions more distinct.

## iii. SUBULIPALPIA. Kirb.

Family ALEOCHARIDÆ. *Aleocharidans.*

## XLIV. Genus ALEOCHARA. Grav.

(125) I. \* ALEOCHARA PALLITARSIS. *Pale-footed Aleochara.*

*A. (pallitarsis) nigra, vix nitida; thorace orbiculato, subcanaliculato, postice foveolato: elytris prothorace longioribus, piceis, apice summo rufis: pedibus piceis tarsis rufis.*

Pale-footed Aleochara, black, scarcely glossy; prothorax orbicular, slightly channelled, posteriorly foveolate: elytra longer than the prothorax, piceous, at the extreme tip rufous: legs piceous, with rufous tarsi.

Length of the body 2 lines.

Locality unknown.

This minute insect belongs to Gravenhorst's second family of *Aleochara*.<sup>7</sup> The species of this genus of minute *Brachelytra* are so extremely numerous, nearly 200 having been discovered in Britain alone, and so difficult to discriminate, that it is not with great confidence that I give this as nondescript. I have many undescribed species in my cabinet that come very near it, but I cannot find one that altogether agrees with it.

## DESCRIPTION.

Body black, gloss deadened by short inconspicuous hairs. Head rather spherical, narrower than the prothorax, very minutely punctured; antennæ shorter than the prothorax, rather robust, intermediate joints turbinate, last joint ovate, acute: prothorax suborbicular with the sides deflexed, very minutely and thickly punctured; dorsal channel nearly obsolete; a large punctiform impression just above the scutellum: elytra longer and rather wider than the thorax, piceous-black, extreme tips rufous, very minutely and thickly punctured: legs piceous-black with rufous tarsi.

## iv. MICROCEPHALA. Lat.

Family TACHYPORIDÆ. *Tachyporidans.*

## XLV. Genus TACHYPORUS. Grav.

(126) I. \* TACHYPORUS ACUDUCTUS. *Acuducted Tachyporus.*

*T. (acuductus) nigro-piceus; prothoracis angulis posticis, antennis, pedibusque, testaceis; elytris minutissime acuductis.*

Acuducted Tachyporus, dark-piceous, posterior angles of the prothorax, antennæ and legs, testaceous; elytra most minutely acuducted.

Length of the body 1 line.

Taken near Cumberland-house, Lat. 54°.

<sup>7</sup> *Micr.* 77.

## DESCRIPTION.

Body dark-piceous, naked, smooth, glossy. Antennæ and mouth testaceous: prothorax very smooth, wider than the elytra, posterior angles testaceous: elytra longer than the head and prothorax together, piceous with the external apical angle testaceous; if viewed under a good magnifier, they appear covered, especially next the suture, with minute branching scratches, as if made by a pin or needle, intermixed with very small punctures: abdomen very short and conical, scarcely margined, piceous with the segments paler at their tip.

(127) 2. \* TACHYPORUS AFFINIS. *Contiguous Tachyporus.*

*T. (affinis) nigro-piceus, nitidus; antennis pedibusque testaceis; elytris castaneis, punctulatissimis.*

Contiguous Tachyporus, dark-piceous, glossy; antennæ and legs testaceous; elytra chestnut, very much and minutely punctured.

Length of the body 1 line.

Taken with the preceding species.

## DESCRIPTION.

This species is extremely similar to *T. acuductus*, but the posterior angles of the prothorax are not testaceous: the elytra are palish-chestnut and thickly covered with very minute punctures, without any scratches.

v. FISSILABRA. Lat.

Family PHILONTHIDÆ. *Philonthidans.*

XLVI. Genus PHILONTHUS. Leach.

(128) 1. PHILONTHUS POLITUS. *Polished Philonthus.*

*Philonthus politus.* Kirb.

————— *puncticollis.* Steph. *Cat.* 279, 6. *Illustr. Mandib.* v, 228, 6.

*Staphylinus politus.* Linn. *Fn. Suec.* 843. *Syst. Nat.* ii, 683, 5. Fab. *Syst. Eleuth.* ii, 594, 22. Scop. *Carn.* 304.

Schrank: *Enum.* 437. Payk. *Fn. Suec.* ii, 391, 31. Ross *Fn. Etrusc.* 606. Vill. *Ent.* i, 412, 5. Geoff. *Ins.* i, 367, 17?

————— *similis.* Marsh. *Ent. Brit.* i, 497, 3?

————— *æneus.* Fourc. *Ent. Par.* 17. Grav. *Micr.* 17, 18?

Length of the body 5 lines.

Taken in Nova Scotia by Capt. Hall.

This species is, I apprehend, *Staphylinus politus* of the Linnean Cabinet, since Mr. Stephens has marked it as such in his Catalogue above quoted, either from his own inspection of the Linnean specimens, or on the authority of a manuscript of mine, now in his hands, written long ago when I examined that collection with a view only to the British species of insects.<sup>8</sup> It must, however, be observed, that it appears from Linné's description, in his *Fauna Succica*, that he regarded several distinct species as merely varieties of it. I have on the above account considered it as the genuine *St. politus*, under which name it stands in my last MS. Catalogue; which, though made many years ago, is more recent than that from which Mr. Stephens appears to have borrowed his name.

Mr. Marsham's synonym is rather dubious, since his description of his *St. similis* does not accord with the insect here given as *St. politus*, which has a black head and prothorax somewhat bronzed, and elytra more bronzed. I have not placed Gyllenhal's synonym under *St. æneus*, since he describes his insect as having a sub-quadrangular head, and the side of the prothorax rather sinuated towards the base, which does not at all correspond with our insect.

The species generally regarded as *P. politus* is distinguished by an ovate head, and may probably have been considered by Linné merely as a variety of his insect.

## DESCRIPTION.

Body very black, hairy. Head orbicular, scarcely narrower than the prothorax, naked with the exception of a few long lateral bristle-like hairs, slightly bronzed, very glossy, smooth with a few punctures on each side in the occiput; antennæ shorter than the prothorax, last joint emarginate at the tip: prothorax rather narrowest before and transverse, rounded behind, slightly bronzed, very glossy and smooth, with a few long hairs on each side, on the disk is a double series, each consisting of four punctures, there are three or four others in the sides: elytra bronzed, thickly punctured with a long hair issuing from each puncture: claws of the tarsi ferruginous.

(129) 2. \* PHILONTHUS MANDIBULARIS. *Mandibular Philonthus*.

*P. (mandibularis) ater, pilosus, capite ovato prothoraceque, glaberrimis nitidissimis æneo-nigris; mandibulis capite brevioribus castaneis, elytris æneis.*

Mandibular Philonthus, very black, hairy: head ovate with the prothorax quite naked and very glossy, bronzed-black; mandibles shorter than the head, chestnut; elytra bronzed.

Length of the body 5 lines.

Locality unknown.

<sup>8</sup> In his Illustrations he does not give the reference to *P. politus*.

## DESCRIPTION.

This species differs from the preceding chiefly in the shape of the head, and the colour of the mandibles, agreeing in the former particular with *P. politus* of modern Entomologists, from which it differs, besides their colour, in having the mandibles shorter than the head: the intermediate joints of the tarsi also are rufo-piceous.

(130) 3. \* PHILONTHUS PICATUS. *Pitched Philonthus.*

*P. (picatus) picus*, *antennis basi, pedibusque testaceis*; *prothorace punctis seriatis 6, 3, 2.*

Pitched Philonthus, piceous; base of the antennæ and legs testaceous; prothorax with punctures in rows 6, 3, 2.

Length of the body 3 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body piceous, as usual in the genus somewhat hairy. Head ovate, naked, and very glossy, with a few scattered punctures on each side behind the eyes and four between them; antennæ as long as the head and thorax, scape testaceous: prothorax naked and very glossy; dorsal rows consisting of six punctures, there are five more punctures near the anterior margin arranged in two oblique rows between them and the lateral margin, and three or four other punctures are discoverable nearer the base: elytra chestnut, hairy; tips of the abdominal segment and anus rufous: legs testaceous.

(131) 4. PHILONTHUS FULVIPES? *Tawny-legged Philonthus.*

*Philonthus fulvipes.* Kirb.

*Staphylinus fulvipes.* Grav. *Micr.* 24, 33. *Mon.* 75, 66. Panz. *Fn. Germ.* xxvii, t. 9. Gyll. *Ins. Suec.* ii, 343, 59?

Length of the body about 3 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black, hairy except the head and prothorax which are naked, and very glossy. Head sculptured like that of *P. picatus*; antennæ with the two first joints testaceous: prothorax sculptured with regard to the dorsal series as in that species, then follow about five punctures in an irregular wavy series extending from near the base towards the apex; between which and the anterior angle are two placed obliquely, and several besides are discoverable in the lateral and posterior margins:

the scutellum is black: the elytra punctured, testaceous, and hairy: the abdomen is entirely black; the legs are testaceous with the posterior coxæ black; the hands are not dilated.

I cannot affirm with any confidence that this is the true *Staphylinus fulvipes* of Gravenhorst, but it answers so well, in almost every particular, to his description, that I do not feel myself justified in giving it as a distinct species. He makes the intermediate dorsal series to consist only of three punctures, whereas in the American species there are five placed in an irregular line and at unequal distances. Some doubt rests upon Gyllenhal's synonym, since he describes the three first joints of the antennæ as testaceous, the sculpture also of the prothorax is different, and he says that the anterior tarsus in both sexes is dilated.

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### Family STAPHYLINIDÆ. *Staphylinidans.*

XLVII. Genus STAPHYLINUS. Linn.

(132) I. \* STAPHYLINUS CHRYSURUS. *Golden-tail Staphylinus.*

*St. (chrysurus) supra cinereo-æneus nigro nebulosus; postpectore<sup>9</sup> anoque villosa-aureis, antennis caule pedibusque, rufis.*  
Golden-tail Staphylinus, above cinereous-bronzed clouded with black; after-breast and anus brilliant with golden hairs; stalk of the antennæ and legs rufous.

Length of the body  $5\frac{1}{2}$  lines.

Taken in Nova Scotia by Dr. Mac Culloch.

#### DESCRIPTION.

Body underneath black, somewhat glossy, sprinkled with yellow hairs. Head suborbicular, scarcely wider than the prothorax, confluent punctured, bronzed, and covered not thickly with short pale-yellow hairs, which give it a cinereous tint, with several indistinct blackish spots; rhinarium<sup>1</sup> and upper-lip pale yellow; mandibles rufous at the base; stalk of the antennæ testaceous, the six last joints are brown and larger than the rest, so as to form a clava: prothorax sculptured, cloathed, and coloured like the head, but more distinctly spotted and clouded with black, widest behind with a slight lateral sinus near the base: scutellum almost covered by a heart-shaped velvety black spot: elytra, as to sculpture, cloathing, and general colour, resembling the head and prothorax, but they are differently spotted with black; in the centre of the base is an oblique oblong spot, then follows an angular interrupted band, and lastly, is a sickle-shaped band with the handle towards the lateral margin, the blade is very broad and includes an insulated cinereous spot; neither of these bands reach the suture or the lateral margin, which is tawny-yellow: the two last segments of the abdomen, especially the penultimate, are thickly covered with short decumbent hairs, which in certain lights reflect a brilliant golden lustre; the after-breast is covered with hairs if possible still more brilliant: the legs are testaceous, but the thighs except their tip, and a dorsal line, are black.

This species resembles *St. hybridus* and *maculosus*, but is sufficiently distinguished by its golden tail and breast: it is one of the smallest of the genus.

<sup>9</sup> See *Introd. to Ent.* iii, 381. 4. 573.

<sup>1</sup> *Ibid.* iii, 363. A. 480.

Family CREOPHILIDÆ. *Creophilidans.*

XLVIII. \* Genus CREOPHILUS. Kirb.

(133) 1. CREOPHILUS VILLOSUS. (Kirby.) *Villose Creophilus.*Staphylinus villosus. Grav. *Micr.* 160, 2.

Length of the body 7 lines.

Taken in Lat. 54° in Canada, also by Dr. Bigsby, and in Nova Scotia by Capt. Hall. I have specimens likewise taken in Britain.

## DESCRIPTION.

This species is extremely similar to *C. maxillosus*, and its American representative. The following circumstances principally distinguish them. The anterior angles of the prothorax in *C. maxillosus* are *thinly* clothed with shortish *black* hairs; in *C. villosus* these hairs are *cinereous*, longer, more numerous, and cover a larger portion of the angle: in the former, the band of the elytra is whiter and wider than in the latter: in the former also the back of the abdomen, especially the third and fourth segments, is mottled with cinereous hairs; in the latter the second and third have each a cinereous band interrupted in the middle: again the *four* first ventral segments in *C. maxillosus* are thickly covered with decumbent cinereous hairs, with each a lateral black spot on both sides, while in *C. villosus* only the *three* first segments are so distinguished; and finally, in the former the sides of the postpectus are covered with black hairs, and in the latter with cinereous.

## III. ENTAPHIA. Kirb.

Family NECROPHORIDÆ. *Necrophoridans.*

XLIX. Genus NECROPHORUS. Fab.

Mr. Mac Leay (*Annulos. Javan.* i, 39) seems to regard *Necrophorus*, in the circle of *Necrophaga*, as the *analogue* of *Creophilus* in the circle of *Brachelytra*, from which it should seem that he had not compared the oral organs of these two genera, if he had he would have immediately have perceived that *Necrophorus* forms rather an osculant group by which a transit is made from one to the other. For besides that the labrum, labium (*lingua*) and palpi of both nearly agree, the maxillæ of *Necrophorus* are formed upon the same plan as those of the *Staphylinidæ*, particu-

larly *Creophilus*, the upper-lobe in both being obliquely divided into two articulations, and the lower being large, short, and very hirsute; whereas in *Necrodes* and the other *Silphidæ*, though the upper-lobe is the same, the lower terminates in a sharp incurved spine—the mandibles of *Creophilus* and *Necrophorus* differ a little, the latter not terminating in a long laniary acumen, and its teeth being less pronounced. As to external form *Necrophorus* is evidently intermediate between *Creophilus* and *Necrodes*. It has the disengaged head and neck, and truncated elytra and wings of the former, and the thorax and general aspect of the latter tribe. When we add to this that both live upon dead flesh—no doubt can remain of their affinity. Indeed a general agreement in their *trophi*, especially the *maxillæ*, is as strong a proof of affinity as can well be furnished.

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\* Prothorax dilated anteriorly.

(134) 1. NECROPHORUS VELUTINUS. (Fabricius.) *Velvet Necrophorus*.

Necrophorus velutinus. Fab. *Syst. Eleuth.* i, 334, 5.  
 ————— tomentosus. Web. *Obs. Ent.* i, 47, 1.

Length of the body 8 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

DESCRIPTION.

Body black; nose separated posteriorly from the front by a straight line, anteriorly furnished with a submembranous rhinarium, above which is a round flattened tubercle; knob of the antennæ black: prothorax dilated anteriorly, thickly covered with golden pile: elytra with two orange-coloured bands, toothed as it were on both sides, the anterior being the widest; epipleura pale yellow: postpectus covered with golden pile: posterior trochanters truncated at the apex and emarginate.

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(135) 2. \* NECROPHORUS HEBES. *Unsensed Necrophorus*.

*N. (hebes) ater*; rhinarium nullo distincto; elytris fascia maculaque aurantiis, epipleura apice maculaque baseos nigris. Unsensed *Necrophorus*, black, with no distinct rhinarium; elytra with an orange-coloured band and spot; apex and basilar spot of the epipleura, black.

Length of the body 7 lines.

Taken in Nova Scotia by Captain Hall.



## DESCRIPTION.

Like the last, but the nose is separated from the front by a curved line, it is also marked on each side by a deep longitudinal furrow, and is depressed longitudinally in the centre; but what more strongly characterizes it, is the want of the rhinarium or nostril-piece discoverable in most of the other species: the anterior part of the prothorax is less conspicuously dilated and naked: the elytra anteriorly have a strongly toothed orange band including a black dot at the suture; posteriorly they have a large toothed spot of the same colour; the epipleura is orange in the middle, black at the tip with a black spot at the base connected with the black disk: postpectus not brilliant with golden pile.

(136) 3. \* NECROPHORUS OBSCURUS. *Obscure Necrophorus.*

*N. (obscurus) ater; rhinario vix distincto; elytris fasciis duabus obscuris, epipleuraque, rubris: antennis clava ferruginea.*

Obscure Necrophorus, black; rhinarium scarcely distinct, elytra with two obscure bands, and the epipleura, red: knob of the antennæ ferruginous.

Length of the body 9—10 lines.

A pair taken in the journey from New York to Cumberland-house.

## DESCRIPTION

Body black. Nose separated from the front by a straight abbreviated line, with a deep oblique furrow on each side and no distinct rhinarium; three last joints of the knob of the antennæ ferruginous: prothorax anteriorly dilated: elytra with two rather obscure deep red bands, the anterior one broad, dentated and reaching from the epipleura to the suture: the posterior one externally broad, internally narrow, and reaching neither epipleura nor suture; epipleura deep red, narrower than usual: posterior trochanter emarginate.

(137) 4. \* NECROPHORUS MELSHEIMERI. *Melsheimer's Necrophorus.*

*N. (Melsheimeri) antennis capitulo rhinarioque ferrugineis; elytris fasciis duabus epipleuraque, aurantiis; trochanteribus posticis apice truncatis extus recurvis.*

Melsheimer's Necrophorus, knob of the antennæ and rhinarium ferruginous; two bands of the elytra and the epipleura orange-coloured; posterior trochanters truncated at the apex and externally recurved.

Length of the body 9 lines.

A single specimen taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black. Nose separated from the front by an obtusangular line; rhinarium orange-coloured, subtrapezoidal; three last joints of the knob of the antennæ ferruginous; prothorax dilated anteriorly; elytra with two orange-coloured subundulated toothed bands reaching from the epipleura to the suture; epipleura broad, orange-coloured; posterior trochanters truncated at the apex with the external angle recurved; tibiæ dilated, especially the anterior pair, or cubits: postpectus on each side covered with tawny hairs.

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\*\* Prothorax not dilated anteriorly.

(138) 5. \* NECROPHORUS HALLII. *Hall's Necrophorus.*

*N. (Hallii) ater*; prothorace subrotundo; antennis capitulo, elytris fascia antica, lunulaque postica, aurantiis; rhinario angulis anticis elongatis.

Hall's *Necrophorus*, black, prothorax nearly round; knob of the antennæ, anterior band and posterior crescent of the elytra, orange-coloured; anterior angles of the rhinarium elongated.

Length of the body 8—9 lines.

Taken in Nova Scotia by Capt. Hall, and in Massachusetts by Mr. Drake.

## DESCRIPTION.

Body, as usual, black. Nose separated from the front by a straight line, channelled; rhinarium distinct, membranous, tawny, anterior angles elongated; knob of the antennæ with the three last joints dull-orange; prothorax nearly circular, anteriorly emarginate; elytra with an anterior angular band which does not reach the suture, and a posterior crescent or kidney-shaped spot, both of a deep orange; epipleura black; wings dusky; trochanters emarginate at the tip.

(139) 6. \* NECROPHORUS PYGMÆUS. *Pigmy Necrophorus.*

*N. (pygmæus) ater*, prothorace subrotundo; antennis capitulo nigro; elytris fascia antica, maculaque postica, obscure rubris; rhinario transverso.

Pigmy *Necrophorus*, black, prothorax subrotund; knob of the antennæ black; anterior band and posterior spot of the elytra, of a dark obscure red; rhinarium transverse.

PLATE II, FIG. 3.

Length of the body 6 lines.

A single specimen taken in the Rocky Mountains.

## DESCRIPTION.

This is the smallest known species of the genus. Nose separated by a nearly straight line from the front; rhinarium transverse, not membranous; knob of the antennæ black: prothorax nearly circular, there is a slight sinus on each side, and a deeper anterior one: elytra with an anterior angular band dilated at the epipleura, and a nearly semicircular spot at the apex of a dull deep red; epipleura of the same colour but black at the apex, and with a black spot at the base: posterior trochanters emarginate at the tip.

## IV. NECROPHAGA. Lat.

Family SILPHIDÆ. *Silphidans*.

L. Genus NECRODES. Wilkin.

(140) I. NECRODES SURINAMENSIS. (Latreille.) *Surinam Necrodes*.

*Necrodes surinamensis*. Latr. *Crust. Arachn. et Ins.* i, 498, note 2.

*Silpha surinamensis*. Fab. *Syst. Eleuth.* i, 336, 1. Linn. *Syst. Nat. Gmel.* iv, 1620, 48. Oliv. *Ent.* ii, 11, 6, 1, t. ii, f. 11.

Herbst. *Ins.* v, 173, 2.

Boucler de Surinam. *Dict. des D. Sc. Nat.* v. 256, 3.

Length of the body 9—11 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body oblong, depressed, black, rather glossy. Head lightly, neck confluent, punctured; nose not distinct from the front; knob of the antennæ cinereous: prothorax nearly circular, anteriorly emarginate, slightly punctured in the disk, more thickly at the base and sides; a long basilar impression, or furrow on each side: elytra thickly punctured, with three longitudinal ridges; towards the apex, between the second and third, is a tumour, and after that an abbreviated orange band formed of three spots, that nearest the suture not touching the others.

The posterior thighs of the male of this species are not much more incrassated than those of the female, but on each side of the knee-pan, or cavity that receives the head of the tibia, is a minute tooth.

LI. Genus OICEOPTOMA. Leach.

vii. Subgenus THANATOPHILUS. Leach.

(141) 1. OICEOPTOMA (*Thanatophilus*) MARGINALE. *Marginal O. Thanatophilus*.

*O. Thanatophilus marginale*. Kirb.

*Silpha marginalis*. Fab. *Gen. Ins. Mant.* 215, 7, 8; *Syst. Eleuth.* i, 338, 9. Oliv. *Ins.* ii, 11, 10, 6, t. i, f. 5. Herbst. *Ins.* v, 180, 8. Linn. *Syst. Nat. Gmel.* iv, 1621, 52.

— noveboracensis. Forst. *Cent.* 17.

Length of the body 6 lines.

Several specimens taken in Lat. 54°, taken also by Dr. Mac Culloch in Nova Scotia.

I have retained Fabricius' trivial name for this species, although Dr. Forster's was first published by five years, for two reasons, first because it has been generally adopted, and next because it is a much better name. The name of a district given to an animal being improper, unless it is really peculiar to such district, or more abundant there than elsewhere. Generally speaking the name imposed by the first discoverer and describer, ought to be studiously retained: but where another name has been long in possession, and the one imposed originally is manifestly absurd or improper; to prevent confusion in the first case it should be retained, and in the second rejected or altered. The rights of individuals should be always maintained, except where they interfere with the general benefit and perfection of the science.

DESCRIPTION.

Body oblong, black, very thickly punctured. Head with an oblong punctiform impression in the space between the eyes: the margins of the prothorax, the lateral more widely, are of a pale-red: the whole disk is covered by a large three-lobed black spot, with the lateral lobes the smallest and shortest: the elytra are reddish-brown with three longitudinal ridges, the external one, as usual, stopping short of the apex. In the female the elytra at the apex are subsinuated and subacuminated.

(142) 2. OICEOPTOMA (*Thanatophilus*) LAPPONICUM. *Lapland O. Thanatophilus*.

*Oiceoptoma (Thanatophilus) lapponicum*. Kirb.

*Silpha lapponica*. Herbst. *Ins.* v, 209, 35, t. lii, f. 4. Thunb. *Ins. Suec.* 5, 72. Fab. *Syst. Eleuth.* i, 338, 11. Gyll. *Ins. Suec.* i, 273, 12.

— rugosa. Variety. Linn. *Fn. Suec.* 455. Payk. *Fn. Suec.* i, 339, 9.

— candata. Say. *Journ. Acad. Phil.* III, i, 192, 1.

Length of the body 5—6½ lines.

Taken abundantly both in the Journey from New York to Cumberland-house, in Lat. 65°. and in Canada by Dr. Bigsby. This species abounds in the huts of the Laplanders, devouring every thing—skins, flesh, and dried fish.

This insect was sent me by Dr. Harris, as the *Silpha candata* of Say, and it agrees very well with his description, but it is evidently the *Silpha lapponica* of modern Entomologists, which Linné regarded as a variety only of *S. rugosa*. Gyllenhal describes the ridges of the elytra as running straight—they certainly run straighter than those of the last named species, with which he compares it, but the inner ones are flexuose at the end.

N. B. The elytra of the male have a very slight sinus at the tip, and no acumen.

## DESCRIPTION.

Body oblong, black. Three last joints of the antennæ brown; head and prothorax covered with rather long decumbent hairs, of a yellowish cinereous colour with somewhat of silvery lustre: in the prothorax, in some specimens, there are six rows of black spots, viz. two discoidal ones, each containing five spots, next, on each side, is an intermediate one of five, and lastly, a lateral one of only two; in other specimens there are only the discoidal rows, each consisting of five spots; and one that I received from Canada has no spots at all: scutellum subacuminate, subcinereous from hairs with a black spot on each side; elytra black, punctured, with some very short scattered cinereous hairs, scarcely visible except under a lens; on each elytrum are three longitudinal ridges, the outermost one more elevated, but shorter, than the others, and nearly reaching the base, bent inwards a little at the apex; the intermediate one reaching neither base nor tip of the elytra, and more bent and flexuose at the apex, and that nearest the suture taking its origin a little nearer the base than the last and approaching nearer to the tip where it is flexuose; on each side of the two inner ridges is a row of punctures very close to each other, and in the intervals between the ridges are four rows, one in each, of hemispheric tubercles; the elytra are acuminate at the apex and sinuated.

(143) 3. \* OICEOPTOMA (*Thanatophilus*) TRITUBERCULATUM.  
*Trituberculate O. Thanatophilus.*

*O. T. (trituberculatum) pubescente-fuscum; prothorace subcanaliculato, elytris tricarinatis postice trituberculatis.*

Trituberculate *O. Thanatophilus*, brown from pubescence; prothorax a little channelled, elytra with three ridges, and three tubercles near the apex.

Length of the body  $4\frac{1}{4}$  lines.

Several specimens taken in the Journey from New York to Cumberland-house, and in Lat. 54°.

## DESCRIPTION.

This species appears to be the American representative of *Silpha opaca*, from which it differs in being smaller, and proportionally narrower; the prothorax is longer in proportion to its width, and has an obsolete channel: the elytra are more distinctly punctured, and besides the ordinary elevation at the termination of the external ridge, have two smaller ones at that of the other two ridges; the ridge next the suture also is more elevated at its termination than in *S. opaca*, of which in every other respect it is the exact counterpart. The elytra of the female are slightly sinuated at the apex, and obtusely acuminate.

VARIETY B. Quite black.

(144) OICEOPTOMA (*Thanatophilus*) INÆQUALE. *Unequal O. Thanatophilus*.

Oiceoptoma (*Thanatophilus*) inæquale. Kirb.

*Silpha inæqualis*. Fab. *Syst. Eleuth.* i, 340, 14. Oliv. *Ent.* ii, 11, 14, 12, t. ii, f. 20. Herbst. *Ins.* v, 185, 12, t. 41, f. 2.  
Linn. *Syst. Nat. Gmel.* I, iv, 1620, 49.

Length of the body  $5\frac{1}{4}$ —6 lines.

Several taken in the Journey from New York to Cumberland-house, and in Lat. 54°.

## DESCRIPTION.

Body black, not at all glossy, minutely punctured; punctures not visible except under a good lens. Three last joints of the antennæ cinereous: prothorax anteriorly emarginate with four discoidal obtuse ridges, the lateral ones undulated and oblique and the intermediate ones straight and parallel: elytra with the three customary longitudinal ridges, the outermost the shortest and most elevated, and the intermediate one towards the apex curving inwards; in the female the apex of the elytra is subacuminate and very acute, but with scarcely any sinus; in the male it is rounded.

## viii. \* Subgenus NECROPHILA.

*Body* very much dilated.

*Epipleura* very large.

(145) I. OICEOPTOMA (*Necrophila*) AMERICANUM. *American O. Necrophila*.

*O. Necrophila Americanum*. Kirb.

*Silpha Americana*. Linn. *Syst. Nat.* ii, 570, 7. Fab. *Syst. Eleuth.* i, 337, 6. Oliv. *Ent.* ii, 11, 8, 4, t. i, f. 9. Herbst. *Ins.* v, 176, 5.

Bouclier Americain. Dict. *Des. Sc. Nat.* v, 256, 2.

*Blatta Americana*. Catesb. *Carol.* iii, t. x, f. 5. Seligm. *Av.* iv, t. cviii, f. 7.

Length of the body  $8\frac{1}{2}$  } lines.  
Breadth of ditto... 7 }

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body very much depressed, thickly punctured with a hair issuing from each puncture; on the under-side black. Head with a round impression between the eyes: prothorax pale-yellow with a subquadrangular sublobate black spot in the disk; punctures of the prothorax very thick, those of the discoidal spot resembling scratches: elytra brown-black, rather silky, with two longitudinal, undulated, obsolete ridges that do not reach the apex; their surface is covered with irregular elevations, and near the suture is a series of punctiform impressions; epipleura very wide with its horizontal portion resplendent with a lustre between bronze and gold, vertical part, or inner margin, yellow; the suture of the elytra terminates in a minute point.

Olivier says there are three ridges on the elytra, but only two are discernible in the specimen here described. It is singular that no author has noticed the brilliant side-covers of the elytra.

(146) 2. \* OICEOPTOMA (*Necrophila*) TERMINATUM. *Terminated O. Necrophila.*

*O. N. (terminatum) nigrum, prothorace pallide flavo, macula discoidali lobata nigra; elytris apice flavis, acuminatis; epipleura subaurata, intus flava.*

Terminated *O. Necrophila*, black, prothorax pale-yellow, with a black lobed discoidal spot; elytra at the apex yellow, acuminate; epipleura somewhat gilded, with the inner margin yellow.

Length of the body  $9\frac{1}{4}$  lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

This species seems nearly related to *O. N. Americanum*, but it is narrower in proportion to its length, the front has a distinct oblong impression; the elytra are yellow at the apex and acuminate, which last is probably a sexual character; the epipleura is less brilliant than in the preceding species, and the elytra are not silky. In other respects it resembles it and may possibly be the female.

(147) 3. \* OICEOPTOMA (*Necrophila*) AFFINE. *Kindred O. Necrophila.*

*O. N. (affine) nigrum, prothorace pallide flavo, macula lobata discoidali nigra; elytris apice flavis acuminatis; epipleura nigro-carulescenti, intus flava.*

Kindred *O. Necrophila*, black; prothorax pale-yellow with a black, lobed, discoidal spot: apex of the elytra yellow and acuminate; epipleura black-blue, inner margin yellow.

Length of the body 9 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Very like the preceding species, but the frontal impression is smaller and round: the discoidal black spot of the prothorax is smaller, with the lateral lobes rounded, and with round confluent punctures: the horizontal part of the epipleura is black with a slight tint of blue, and not at all bronzed.

(148) 4. \* OICEOPTOMA (*Necrophila*) CANADENSE. *Canada O. Necrophila.*

*O. N. (Canadense) nigrum*, prothorace flavo, macula magna discoidali nigra; elytris apice flavis; epipleura subaurata intus flava.

Canada *O. Necrophila*, black, prothorax yellow with a large black discoidal spot; elytra yellow at the tip; epipleura golden-bronzed, internally yellow.

Length of the body 7 lines.

Taken in dead fish on the shores of Lake Huron in Canada, by Dr. Bigsby.

## DESCRIPTION.

This species approaches near to *O. N. Americanum*, but it is smaller, the frontal impression is deeper and oblong; the discoidal spot of the prothorax is much larger, extending from the anterior to the posterior margin, it is scarcely at all lobed, and only the punctures of its posterior part exhibit the appearance of angular scratches: the elytra are dirty-yellow at the apex, and the yellow occupies a much greater portion of the extremity than in the two preceding species, they are not acuminate at the tip, but have a very slight tendency to a sinus; the epipleura in colour resembles that of *O. N. Americanum*, but is less brilliant.

Family PELTIDÆ. *Peltidans.*

LII. Genus PELTIS. Kugell.

(149) 1. PELTIS FERRUGINEA. (Fabricius.) *Ferruginous Peltis.*

*Peltis ferruginea*. Fab. *Syst. Eleuth.* i, 344, 2. Gyll. *Ins. Suec.* i, 253, 2. Illeg. *Kaf. Preuss.* i, 376, 2. Kugell. *Schneid. Mag.* 509, 2. Steph. *Illustr. Mandib.* iii, 29.

*Silpha ferruginea*. Linn. *Fn. Suec.* 458. Fab. *Ent. Syst.* i, 253, 21. Payk. *Fn. Suec.* i, 339, 15. Oliv. *Ent.* ii, 11, 20, 20, t. ii, f. 13. Herbst. *Ins.* v, 195, 21, t. li, f. 10. Panz. *Fn. Germ.* lxxv, t. 17. Ced. *Fn. Ingr.* 145. Goezè. *Eur. Fn.* viii, 289, 10. Vill. *Ent.* i, 81, 16.

—— camicoides. De Geer. *Ins.* iv, 183, 9.

—— cassidoidea. Lep. *Tag.* i, 312, t. xix, f. 3.

*Thymalus ferrugineus*. Latr. *Gen.* ii, 9, 1. *N. D. D'H. N.* xxxiv, 71.

*Nitidula rubicunda*. Scrib. *Journ.* 173, 120.

*Ostoma rubicunda*. Lai. *Tyr. Ins.* ii, 102, 1. Schrank *Fn. Boic.* i, 518, 601. Schæff. *Icon.* t. xl, f. 7. H—r. *Ins.* 146. Müll. *Linn. Nat. Syst.* V, i, 130, 19.

Length of the body 5 lines.

A single specimen taken in the Journey from New York to Cumberland-house. The insects of this genus are usually to be met with under the bark of trees, and in fungi.



## DESCRIPTION.

Body oblong, flat, ferruginous, resembling greatly, as De Geer has observed, the common bed-bug. Head thickly punctured: prothorax deeply emarginate for the reception of the head, thickly punctured; lateral margin sloping, reflexed: disk of the elytra with six elevated ridges gradually diminishing in length from the suture outwards; between the ridges is a double row of punctures, each pair of punctures being connected by a transverse furrow; outside the discoidal ridges are several irregular rows of punctures; lateral margin reflexed; epipleura linear at the apex, gradually dilated at the base.

Family NITIDULIDÆ. *Nitidulidans*.

## LIII. Genus NITIDULA. Fab.

(150) 1. NITIDULA OBSCURA. (Fabricius.) *Obscure Nitidula*.

*Nitidula obscura*. Fab. *Gen. Ins. Mant.* 215, 1-2. *Syst. Eleuth.* i, 348, Gyll. *Ins. Suec.* i, 221, 9. Illig. *Kaf. Preuss.* i, 383, 7. Payk. *Fn. Suec.* i, 349, 3. Oliv. *Ent.* ii, 12, 5, 3, t. i, f. 3. Herbst. *Ins.* v, 230, 2, t. liii, f. 2. Thunb. *Ins. Suec.* 70. Ross. *Fn. Etrusc.* i, 58, 141. Panz. *Ent. Germ.* 124, 3. Schneid. *Mag.* 510, 5. Goeze *Eur. Fn.* viii, 295, 3. Marsh. *Ent. Brit.* i, 130, 3. Walck. *Fn. Paris.* i, 107, 2. Latr. *N. D. D'H. N.* xxiii, 9. Steph. *Cat.* 78, 832. *Silpha rufipes*. Linn. *Syst. Nat.* ii, 573, 24. *Nitidula rufipes*. Steph. *Illustr. Mandib.* iii, 35, 8. *Dermestes fuscipes*. Fourc. *Ent. Par.* i, 22, 21.

Length of the body  $2\frac{1}{4}$ — $2\frac{3}{4}$  lines.

Several specimens taken in Lat. 65°.

## DESCRIPTION.

Body subdepressed, black, with its lustre obscured by inconspicuous decumbent subcinereous hairs. Head minutely punctured, transversely impressed between the eyes; occiput elevated; mouth and stalk of the antennæ piceous: prothorax minutely punctured, most visibly at the sides, which are depressed; lateral margin reflexed; elytra very obtuse at the apex, they have the appearance of being acuducted which seems to be produced by the pubescence: legs piceous or rufo-piceous.

The legs in the American specimens, as to colour, appear to agree better with Olivier's term *piceis*, than with Paykull's and Gyllenhal's *ferrugineis*, and *rufo-ferrugineis*; but the difference is so slight that I have little or no hesitation in giving it as their *N. obscura*.

(151) 2. NITIDULA OSSIUM. (Marsham M.S.) *Bone-frequenting Nitidula.*

*N. (ossium) nigra, subpubescens, pedibus ferrugineis, prothoracis lateribus elytrisque piceis.*

Bone-frequenting Nitidula, black, somewhat downy; legs ferruginous, elytra and sides of the prothorax piceous.

*Nitidula obscura.*  $\beta$ . Steph. *Cat.* i, 79, 832, 8?

Length of the body  $1\frac{1}{2}$ — $1\frac{3}{4}$  line.

Several specimens taken in Lat. 65°.

## DESCRIPTION.

Mr. Stephens regards this as a variety only of the preceding species, but it is smaller, narrower in proportion, the legs and stalk of the antennæ are paler, and the elytra and sides of the prothorax, in the British as well as American specimens, are piceous. In other respects they agree.

(152) 3. NITIDULA DISCOIDEA. (Fabricius.) *Discoidal Nitidula.*

*Nitidula discoidea.* Fab. *Syst. Ent.* 78, 5. *Syst. Eleuth.* i, 252, 23. Gyll. *Ins. Suec.* i, 219, 6. Illig. *Kaf. Preuss.* i, 381, 4. Oliv. *Ent.* ii, 12, 15, 21, t. ii, f. 8. Herbst. *Ins.* v, 237, 8. t. 53, f. 7. Panz. *Fn. Germ.* lxxxiii, t. 5. Ross. *Mant.* i, 24, 56. Schneid. *Mag.* 519, 15. Linn. *Syst. Nat. Gmel.* iv, 1630, 16. Goeze. *Eur. Fn.* viii, 297, 5. Marsh. *Ent. Brit.* i, 133, 12. Walck *Fn. Paris*, i, 110, 15. Lat. *N. D. D'H. N.* xxiii, 9. Stew. *Elem.* ii, 40. Sam. *Compend.* 51, t. ii, f. 5. Steph. *Illustr. Mandib.* iii, 34, 6.

*Nitidula hæmorrhoidalis.* Payk. *Fn. Suec.* i, 352, 7. Var.  $\beta$ .

*Ostoma discoidea.* Lai. *Tyr. Ins.* ii, 108, 5. Brahm. *Ins. Kal.* i, 48, 160.

*Silpha discoidea.* Vill. *Ent.* i, 87, 41.

Length of the body  $1\frac{1}{3}$  line.

Many specimens taken in Lat. 65°.

## DESCRIPTION.

Considerably smaller than the British specimens. Body subdepressed, black, above minutely punctured, subpubescent. Stalk of the antennæ; sides of the prothorax, which has posteriorly a pair of discoidal obsolete impressions, legs and anus, rufous: elytra with a large anterior discoidal suborbicular pale-rufous spot common to both, in which, in some specimens, is a black dot; apex of the elytra obscurely variegated with rufous.

Fabricius, and after him Mr. Marsham, describes the legs of this species as black; but others have properly denominated them by the term ferruginous and piceous. In the American specimens they vary in colour from piceous to pale-rufous. The author first mentioned, both in his *Systema Entomologiæ* and *Systema Eleutheratorum*, has printed the trivial name *discoides*, but this has generally been regarded as a typographical error.

Family ENGIDÆ. *Engidans.*

LIV. Genus IPS. Fab.

(153) 1. \* IPS DE JEANII. *De Jean's Ips.**I. (De Jeanii) nigro-picea, nitida, punctulatissima; elytris subdilutioribus lineolis quatuor pallidis.*

De Jean's Ips, dark-piceous, glossy, thickly and minutely punctured: elytra rather more dilute, with four white linear spots.

PLATE II, FIG. 4.

Length of the body  $2\frac{1}{4}$  lines.

Three specimens taken in Lat. 65°.

## DESCRIPTION.

Body linear, depressed, thickly and minutely punctured, glossy, black or dark piceous. Head with a punctiform impression in the vertex, and a larger impression on each side between the eyes: prothorax quadrangular, rather narrowest behind: elytra piceous or rufo-piceous, with two oblong white spots at the base, forming an interrupted line, and two oblique nearly parallel ones below the middle: legs piceous. In the other sex the elytra are subacuminate.

VARIETY B. With five white spots: viz. 1, 2, 2.

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Though the transition from the *Brachelytra* by *Necrophorus* to the *Necrophaga*, especially the *Silphidæ*, is so evident,<sup>2</sup> yet the road to be taken when we depart from the latter tribe is not equally clear: the *Nitidulidæ* indeed manifest a close affinity to the *Silphidæ*, but the *Engidæ* seem separated from both by a rather wide interval, and from them various routes present themselves, some would go next to the *Catheretidæ*, others to the *Cryptophagidæ*, and others to *Choleva* and the *Scaphidiadæ*. The former of these tribes seems to me nearer to the *Nitidulidæ* than the *Engidæ*, and may be regarded as opening a road from them towards the *Brachelytra*; the *Cryptophagidæ* appear much further removed, and are leading towards the *Dermestidæ*; I shall therefore next proceed by the last tribes, whose affinity to the preceding *Necrophaga* is generally admitted.<sup>3</sup>

<sup>2</sup> See above, p. 95.<sup>3</sup> Mac Leay *Annulos. Javan.* i, 39.

Family CHOLEVIDÆ. *Cholevidans.*

LV. Genus CHOLEVA. Lat. Sp.

ix. \* Subgenus CATOPS. Steph.

(154) I. \* CHOLEVA (*Catops*) SPENCIANA. *Spencian C. Catops.*

*C. C. (Spenciana) nigra, pallido pubescens; prothorace angulis rotundatis, postice subrepando; antennis basi, pedibusque ferrugineis; elytris ferrugineis apice nigris.*

Spencian C. Catops, black with pallid pubescence; prothorax with rounded angles, posteriorly rather wavy; legs, and base of the antennæ, ferruginous; elytra ferruginous, black at the tip.

Length of the body 2 lines.

A single specimen taken. Locality not stated.

## DESCRIPTION.

Body black, covered with decumbent pale hairs. Head minutely punctured; antennæ shorter than the prothorax, the two first joints ferruginous, the eighth shorter and smaller than the rest; mouth and palpi ferruginous; prothorax not visibly punctured with all the angles rounded; base with a slight sinus on each side: elytra acute, very minutely punctured with a hair emerging from each puncture, without furrows except a single one parallel with the suture, ferruginous, black at the tip: abdomen piceous, rufous at the base: legs ferruginous.

This species appears to present the type of a new family of *Choleva*, not noticed in Mr. Spencer's *Synopsis Sectionum*, in his admirable Monograph of that genus.<sup>4</sup> From his first section (*Choleva* Steph.) it borrows the rounded posterior angles of the prothorax; from his second (*Catops* Steph.) its clavated antennæ; and from his third (*Ptomaphagus* Steph.) its unfurrowed elytra: it seems properly included in the second, with which it most agrees in habit.

Family SCAPHIDIADÆ. *Scaphidiadans.*

LVI. \* Genus SCAPHIUM. Kirb.

*Labrum* transverse, submembranous, subemarginate.

*Labium* subquadrangular, corneous.

*Tongue* membranous?

*Maxillary Palpi* four-jointed: first joint very short; second rather longer than the rest, nearly cylindrical; third obconical; last conical, acute.

*Labial Palpi* three-jointed: joints nearly cylindrical?

<sup>4</sup> *Linn. Trans.* xi, 138.

*Antennæ* situate below the eyes under the elevation of the nose, eleven-jointed:<sup>5</sup> scape subincrassated, scarcely longer than the following joint; pedicel subcylindrical; four subsequent joints much more slender than the rest of the antennæ, obconical, gradually decreasing in length; the five last joints incrassated so as to form a long knob, all turbinate except the terminal one which is obturbinate; the second joint of the knob is smaller than the others and more spherical.

*Body* oblong, somewhat depressed. *Head* triangular, eyes lateral, hemispherical; nose with a triangular elevation: *prothorax* longer than wide, subquadrangular; sides anteriorly rounded, towards the base constricted; base and apex straight: *scutellum* at the apex somewhat truncated: *elytra* linear, very obtuse and nearly truncated at the apex but not abbreviated, sides curved; *epipleura* ensate: *legs* rather short; *thighs* subcompressed, rather clavate; *tibiæ* cylindrical, somewhat curved, bicalcarate at the apex with minute spurs; *tarsi* all five-jointed, joints not easily discerned; *claws* single: first ventral segment of the *abdomen* very large.

This genus possesses many characters in common with *Scaphidium*, but it differs in the situation and knob of its antennæ, in its palpi, and in the shape of its eyes and prothorax. It seems intermediate between the Cholevidans and Scaphidiadans: agreeing with the former in all the circumstances just mentioned except the last; and with the latter in its locomotive organs, and certain peculiarities in the sculpture of its prothorax and elytra. It is probably a fungivorous genus.

(155) I. \* SCAPHIUM CASTANIPES. *Chestnut-foot Scaphium.*

*S. (castanipes) nigrum, glabrum, nitidum, supra punctatum, nigro-æneum; elytris disco puncto-striatis; antennis pedibusque castaneis.*

Chestnut-foot Scaphium, body black, naked, glossy, punctured; above black-bronzed; elytra in the disk with rows of punctures; antennæ and legs chestnut.

PLATE V, FIG. 1.

Length of the body 3 lines.

A single specimen taken in the Journey from New York to Cumberland-house.

DESCRIPTION.

Body naked, glossy; underneath smooth, black, with a very light shade of bronze; above more evidently bronzed, punctured. Mouth, palpi, and antennæ pale chestnut: prothorax behind, on each side, marked with a pair of punctiform impressions, between these impressions are several large punctures, but not in a regular transverse series as in *Scaphidium*: elytra with six discoidal rows of punctures; the four rows nearest the suture reach the base, but not the apex, and the two external ones neither base nor apex; the first row also terminates towards the base in three large distinct punctures, and from the base of the third runs a transverse row, as in *Scaphidium*, to the sutural furrow, which is impunctured: the legs are pale chestnut.

<sup>5</sup> Plate V, Fig. 1, a.

Family ANISOTOMIDÆ. *Anisotomidans*.

LVII. Genus LEIODES. Lat.

(156) I. \* LEIODES PUNCTO-STRIATUS. *Puncture-striated Leiodes*.

*L. (puncto-striatus) castaneus, nitidus; antennis pedibusque rufis; elytris puncto-striatis: punctis impressis, interstitiis lævibus.*  
Puncture-striated Leiodes, chestnut, glossy; antennæ and legs rufous; elytra with impressed punctures in rows, interstices impunctured.

Length of the body 1 line.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body hemispherico-ovate, naked, glossy, chestnut. Head very lightly punctured; mandibles rather prominent; palpi and antennæ rufous, clava of the latter much incrassated consisting of five joints, the second of which is extremely minute: prothorax very large, wider than long, very lightly punctured, with the sides paler than the disk: elytra deeply and grossly punctured in rows, interstices impunctured: legs and under-side of the prothorax rufous: anus paler than the rest of the abdomen.

This species closely resembles the *Anisotoma badia* of Sturm,<sup>6</sup> but the elytra are not *finely* punctured, as Mr. Stephens describes them in that species.

Family SYLVANIDÆ. *Sylvanidans*.

LVIII. Genus CORTICARIA. Marsh.

(157) I. \* CORTICARIA DENTICULATA. *Denticulate Corticaria*.

*C. (denticulata) picca, subnitida: prothorace postice impresso, lateribus denticulatis; elytris puncto-striatis.*  
Denticulate Corticaria, piceous, rather glossy; prothorax with a posterior impression, and denticulated sides; elytra with rows of punctures.

Length of the body 1 line.

A single specimen taken in Lat. 65°.

<sup>6</sup> *Deutsch. Fn.* ii, t. xxiv, f. E; comp. Steph. *Illustr. Mandib.* ii, 171, 5.

## DESCRIPTION.

Body dark piceous, rather glossy, naked, minutely punctured. Prothorax rather orbicular, with a circular deepish impression just above the scutellum; sides distinctly denticulated: elytra with several rows of punctures.

The insect here described approaches very near to *Corticaria impressa* of Mr. Marsham (*Ips impressa* Oliv.)<sup>7</sup> but it is sufficiently distinguished not only by its colour but chiefly by the very visibly denticulated sides of its prothorax.

I may here observe that most authors, probably on the authority of Latreille, have rejected the synonym of Olivier; his figure, however, appears to me clearly to denote Mr. Marsham's insect, which was I believe first described by Herbst,<sup>8</sup> under the name of *Latridius gibbosus*, and has no relation to *Cryptophagus serratus*, of which the first mentioned learned author seems to regard it as a variety.

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Family CRYPTOPHAGIDÆ. *Cryptophagidans*.

LIX. \* Genus ATOMARIA. Kirb. Steph.

## DESCRIPTION.

Body elliptical. Antennæ antecular with the intermediate joints rather slender; scape much incrassated, the three terminal joints often gradually increasing in size, subturbinate, except the last which is obturbinate and very acute; these three joints form a short club or knob; head subtriangular; eyes small, round, and convex: prothorax transverse, convex, subquadrangular with curved unarmed sides: scutellum transverse: elytra taken together ovate, very convex: legs short, rather slender; tibiæ curved; tarsi five-jointed? claw-joint long; claws simple.

This genus, consisting of very minute insects, differs from *Cryptophagus*, in having the legs and the stalk of the antennæ much more slender; the prothorax and elytra viewed separately are more convex, and the former has a transverse basilar impression not observable in the latter, and its sides are always unarmed. The extreme minuteness of all the species has prevented me from obtaining any clear idea of the parts of the mouth, so that I can only give the above as the distinctive characters of the genus.

Both Latreille and Gyllenhal consider *Cryptophagus* as a pentamerous genus, but it appears from Mr. Curtis's figure and description of *C. Populi* that one sex is heteromerous.<sup>9</sup> Whether this is the case with *Atomaria* I have not been able to ascertain; all those individuals, however, that I have examined appear to have pentamerous posterior tarsi.

<sup>7</sup> Marsh. *Ent. Brit.* i, 110, 11. Oliv. *Ent.* ii, 18, 14, 21, t. iii, f. 24.

<sup>8</sup> Herbst. *Ins.* v, 5, t. xlv. f. 2.

<sup>9</sup> *Brit. Ent.* iv, t. 160, f. 51.

(158) I. ATOMARIA ATRA. *Black Atomaria.*

Atomaria atra. Steph. *Illustr. Mandib.* iii, 67, 13.  
 Cateretes ater. Herbst. *Ins.* v, 15, 5, t. xlv, f. 5, e, E.  
 Dermestes ater. Panz. *Fn. Germ.* xxiii, t. 9.  
 ——— fimetarii. Payk. *Fn. Suec.* i, 293, 21.  
 Latridius ater. Schneid. *Mag.* v, 577, 10.  
 Silpha nitidula. Marsh. *Ent. Brit.* i, 123, 24.

Length of the body  $\frac{2}{3}$  line.

One specimen only taken.

## DESCRIPTION.

Body black, punctured, glossy. Mouth reddish; antennæ rufous: elytra pubescent, piceous, rufous at the tip: anus and legs rufous.

## LX. Genus CRYPTOPHAGUS. Herbst.

(159) I. \* CRYPTOPHAGUS HUMERALIS. *Humeral Cryptophagus.*

*C. (humeralis) niger, supra punctatus, pubescens; prothorace inermi; scutello obtusangulo; elytris humeris rufescentibus; pedibus castaneis.*

Humeral Cryptophagus, black, above punctured and pubescent; prothorax unarmed; scutellum obtusangular; shoulders of the elytra reddish; legs chestnut.

Length of the body  $1\frac{3}{4}$  line.

Several specimens taken in Lat. 54°.

## DESCRIPTION.

Body subcylindrical, black; above punctured and pubescent, rather glossy. Prothorax rather widest behind, with the basilar angles somewhat depressed: scutellum transverse, obtusangular: shoulders of the elytra obscurely rufous: legs, especially the tibiæ and tarsi, pale chestnut.

(160) 2. \* CRYPTOPHAGUS CONCOLOR. *Concolorate Cryptophagus.*

*C. (concolor) ferrugineus totus, supra punctatus, pubescens: prothorace inermi; scutello obtusangulo.*

Concolorate Cryptophagus, wholly ferruginous; above punctured, pubescent; prothorax unarmed; scutellum obtusangular.

Length of the body  $1\frac{1}{2}$  line.

A single specimen taken in Lat. 54°.



## DESCRIPTION.

In shape, sculpture, and pubescence this species resembles the preceding, but it is smaller, and the whole insect is entirely of one colour—dark ferruginous.

N. B. The two species last described differ from the other *Cryptophagi* in having the thorax without serratures or denticles, and the scutellum obtusangular, and may perhaps form a subgenus.

It should seem to result from a comparison of *Necrobia* with *Cryptophagus* that there is an affinity between them; the former, as restricted by Mr. Stephens,<sup>1</sup> is a necrophagous genus: *N. Quadra*, of which I was the first discoverer and sent to the late Mr. Marsham with that Trivial name, I found upon the bones of dead animals very busily engaged in devouring what remained upon them. If this idea prove correct, it will furnish another instance of a collateral departure from the main stem of the system in a different direction from that to which its more evident affinities conduct us.

Family DERMESTIDÆ. *Dermestidans*.

LXI. Genus ATTAGENUS. Lat.

(161) 1. ATTAGENUS CYLINDRICUS. *Cylindrical Attagenus*.

*A. (cylindricus) nigro-piceus, subcylindricus, cinereo-subpubescens; antennis medio tarsisque rufis.*

Cylindrical attagenus, subcylindrical, dark-piceous with cinereous down: antennæ, in the middle, and tarsi, rufous.

PLATE VII, FIG. 3.

Length of the body 2 lines.

Two specimens taken in the Rocky Mountains.

## DESCRIPTION.

This little species has much the air of a *Cryptophagus*, but belongs to the present genus. The body is subcylindrical, dark-piceous, very minutely punctured, and covered, but not thickly, with decumbent cinereous hairs. The two first joints of the antennæ are large, globular, and of the same colour with the rest of the body; the intermediate ones very minute and pale rufous; the three last are incrassated and form an oblong piceous knob, of which the terminal joint is as long as the two preceding ones, ovate and acute: the prothorax behind is very obsoletely trilobed with the intermediate lobe rounded: the tarsi are rufous.

<sup>1</sup> *Systemat. Catal.* 138. Genus 238.

(162) 2. *ATTAGENUS PELLIO*. (Latreille.) *Furrier Attagenus*.

*Attagenus pello*. Lat. *N. D. D'H. N.* iii, 64. Leach, *E. E.* ix, 94. Sam. *Compend.* 182. Steph. *Illustr. Mandib.* iii, 126, 1. Kirb. and Sp. *Introd. to Ent.* i, 234; iii, 324.  
*Dermestes pello*. Linn. *Fn. Suec.* 411; *Syst. Nat.* ii, 562, 4. Fab. *Syst. Eleuth.* i, 313, 6. Gyll. *Ins. Suec.* i, 151, 7. Payk. *Fn. Suec.* i, 279, 4. Illig. *Kaf. Preuss.* i, 316, 6,  $\alpha$ . Latr. *Gen.* ii, 32, 2. Oliv. *Ent.* ii, 9, 11, 10, t. ii, f. 11. Herbst. *Ins.* iv, 128, 11, t. xl, f. 8, f. Ross. *Fn. Etrusc.* i, 32, 75. Ced. *Fn. Ingr.* 126. Walck. *Fn. Paris.* i, 90, 2. Panz. *Ent. Germ.* i, 95, 5. Hoppe. *Tasch.* 1797, 146. Blum. *Handb.* ed. 7, 321, 2. Marsh. *Ent. Brit.* i, 63, 6. Berk. *Syn.* i, 89. Don. *Brit. Ins.* vii, t. cccxxxi, f. 3. Stew. *Elem.* ii, 31. Shaw. *Gen. Zool.* vi, 32, t. vii. Scrib. *Journ.* 152, 78. Scop. *Carn.* 37. Müll. *Zool. Dan.* 56, 486. Lai. *Tyr. Ins.* ii, 62, 4. Schrank. *Enum.* 28, 48. Goeze. *Eur. Fn.* viii, 183, 2. Brahm. *Ins. Kal.* i, 9, 32, 238, 816. Pod. *Mus. Græc.* 22, 3. Fourc. *Ent. Par.* i, 18, 4. Müll. *Naturf.* iii, 63. Vill. *Ent.* i, 45, 4.  
 ——— *bipunctatus*. De Geer. *Ins.* iv, 197, 3.

Geoffr. *Ins.* i, 100, 4. Act. *Ups.* 1736, 117, 11. Schæff.  *Ic. t.* xlii, f. 4. H—r. *Ins.* 45, 46. Müll. *Linn. Nat.* i, 101, 4, t. iii, f. 2. Bar. *Nat.* vi, 60, 2, t. iii, f. v. Bechst. *Nat.* ii, 822, 2. Frisch. *Ins.* v, 22, t. viii. Bock. *Nat.* v, 25, 14. Müll. *Fn. Frid.* 2, 16. Rai. *Hist. Ins.* 85, 35.

♂

*Dermestes pello*.  $\beta$ ,  $\gamma$ ,  $\delta$ . Illig. *Kaf. Preuss.* i, 316, 6,  $\gamma$ .  
 ——— *ater*. Panz. *Ent. Germ.* i, 96, 7.  
 ——— *cylindricornis*. Schrank. *Naturf.* xxiv, 65, 8.  
*Megatoma Schrankii*. Schneid. *Mag.* i, 480.  
 ——— *atra*. Herbst. *Ins.* iv, 95, 2, t. xxxix, f. 2. Sulz. *Inf. t.* ii, f. 5—7.

Length of the body  $2\frac{3}{4}$  lines.

## Taken in Nova Scotia by Captain Hall.

This species, though particularly destructive to furs, is to be met with in other animal matters, and is very common in houses. De Geer describes its larva as having a very long body covered with a hard shining skin of a reddish-brown colour and hairy; as having six legs, and the posterior extremity terminated by a long remarkable tail, formed of rufous hairs as long as the body, and placed horizontally in the same line: He says their motion is gliding, but by snatches.

## DESCRIPTION.

The American specimen, which is a male, is considerably larger than my British ones and blacker; but in other respects it precisely resembles them. The species may generally be known by its black or dark-piceous colour, covered, especially underneath, with decumbent whitish or cinereous hairs. The stalk of the antennæ, and the tarsi, are testaceous, and the last joint of the former, in the male, is longer than the two first and cylindrical: the prothorax at the three posterior angles has three white spots formed of hairs, and the elytra one in the middle near the suture.

## LXII. Genus DERMESTES. Linn.

(163) I. DERMESTES LARDARIUS. (Linné.) *Bacon Dermestes.*

*Dermestes lardarius.* Linn. *Fn. Succ.* 408; *Syst. Nat.* ii, 561, 1. Fab. *Syst. Eleuth.* i, 312, 1. Payk. *Fn. Succ.* i, 276, 1. Gyll. *Ins. Succ.* i, 146, 1. Illig. *Kaf. Pruess.* i, 311, 1. Lat. *Gen.* ii, 31, 1. *Hist. Nat.* ix, 240. *N. D. D'H. N.* ix, 364, t. d. vi, f. 4. Oliv. *Ent.* ii, 9, 6, 1, t. i, f. 1. Herbst. *Ins.* iv, 115, 1, t. xl, f. 1. Panz. *Ent. Germ.* i, 91, 1. Preysl. *Böhm. Ins.* i, 13, 10. Ross. *Fn. Etrusc.* i, 31, 73. Blum. *Handb.* ed. 7, 321, i. Scop. *Carn.* 34. Ced. *Fn. Ingr.* 124. Fisch. *Naturg. v. Livl.* 132, 251. De Geer, *Ins.* iv, 192, 1, t. vii, f. 15. Marsh. *Ent. Brit.* i, 60, 1. Brahm. *Ins. Kal.* i, 17, 155 and 238, 817. Schneid. *Mag.* 478, 1. Barb. *Ins.* 18, t. iii, f. 1. Goeze *Eur. Fn.* viii, 176, 1. Müll. *Zool. Dan. Pr.* 56, 485. Lai. *Tyr. Ins.* ii, 59, 1. Schrank, *Enum.* 24, 40. Pont. *Nat.* 199, 1. Müll. *Naturf.* iii, 61. Pod. *Mus. Græc.* 22. Geoffr. *Ins.* i, 101, 5. Fourc. *Ent. Par.* i, 18, 5. Walck. *Fn. Paris* i, 90, 1. Vill. *Ent.* i, 44, 1. Müll. *Linn. Nat.* i, 100, 1, t. iii, f. 1. Bar. *Nat.* vi, 59, 1, t. iii, f. A. 1, 2. Bechst. *Nat.* ii, 822, 1. Licht. *Mag.* vii, 4, 34. Bock. *Nat.* v, 24, 11. Frisch. *Ins.* v, 25, t. ix. Schæff. *Icon. t. xlii, f. 3.* H—r. *Ins.* 41, &c. Goed. *List.* 276, f. 114. Rai. *Hist. Ins.* 107, 4. Blank. *Belg.* 95, t. xi, f. k. Schmied. *Ins.* 203. Krün. *Encycl.* vii, 345. Voet. *Col. t. xxxi, f. 1.* Berk. *Syn.* i, 89. Stew. *Elem.* ii, 31. Shaw. *Gen. Zool.* vi, 31, t. vii. Leach *E. E.* ix, 94. Sam. *Compend.* 181, 1. Kirb. and Sp. *Introd.* i, 228. Steph. *Illustr. Mandib.* iii, 121, 1.

Length of the body  $4\frac{3}{4}$  lines.

Taken in Nova Scotia by Capt. Hall; in Massachusetts by Mr. Drake.

Latreille observes that this insect is found in every quarter of the old world, and the specimens from which the following description is taken, furnish a proof that it is also a devourer of hams and bacon in the new. These, however, could not have been its original food, since it must have existed before hams and bacon were invented: in fact, though often found in them, it feeds indiscriminately on all animal substances, whether putrescent or dried.

## DESCRIPTION.

The American specimens differ in no respect from our English ones. The body is black, covered more or less with decumbent cinereous hairs. It may always be known by the fusco-cinereous base of the elytra with three black dots placed in a triangle.

(164) 2. \* DERMESTES DISSECTOR. *Dissector Dermestes.*

*D. (dissector) niger, pubescens; antennis brunneis, pedibus piceis, capite prothoraceque fusco cinereoque, elytris cinereo, nebulosis.*  
Dissector *Dermestes*, black, pubescent; antennæ mahogany-colour, legs piceous, head and prothorax clouded with brown and cinereous, elytra with cinereous only.

Length of the body  $3\frac{1}{2}$  lines.

Taken by Dr. Bigsby in Canada.

## DESCRIPTION.

This species appears to be the American representative of *D. murinus*, from which it differs principally in having the upper-side of the body less conspicuously mottled with whitish hairs, and with having brown ones intermixed with those of the head and prothorax: the antennæ also and palpi are of a dull mahogany colour, which in the last species are black, and the knob of the former is considerably narrower; underneath also the hairs on *D. Dissector* are not so densely planted as in *D. murinus*, and are finer, and of a purer white.

Family BYRRHIDÆ. *Byrrhidans.*

## LXIII. Genus BYRRHUS. Linn.

(165) I. \* BYRRHUS PICIPES. <sup>(pra. ped)</sup> *Pitch-legged Byrrhus.*

*B. (picipes) niger, pube obscurus, elytris vittis tribus obsolete interruptis, fasciaque postica abbreviata, holosericeis atris, pedibus piceis.*

Pitch-legged Byrrhus, black, gloss obscured by hairs, elytra with three obsolete interrupted stripes, and a posterior abbreviated band, of a deep velvet-black; legs piceous.

Length of the body  $3\frac{4}{5}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black, covered with short decumbent hairs. Scutellum velvety-black: elytra with a pair of deep black interrupted stripes terminating in a transverse abbreviated posterior band of the same colour: legs piceous.

The insects of this genus are, most of them, so extremely alike in shape and sculpture, differing principally, like the Humble-bees,<sup>2</sup> in size and the colour of the pubescence that covers them, that it is difficult to say whether any individual is entitled to rank as a species, or ought only to be considered as a variety. That here described seems to claim a distinct name as well as most, since it not only differs from the subsequent one in the colour of its pubescence, but likewise in that of its legs. I at first considered it as *B. ater*, but it does not agree with the general descriptions of that insect.

<sup>2</sup> Kirb. *Mon. Ap. Angl.* i, 207.

(166) 2. \* BYRRHUS CONCOLOR. *Concolorate Byrrhus.*

*B. (concolor) niger, pube obscurus, prothorace distincte canaliculato; elytris vittis tribus interruptis obsolete holosericeis atris.*  
 Concolorate Byrrhus, black, gloss obscured by pubescence; prothorax distinctly channelled: elytra with three obsolete interrupted velvety deep black stripes.

Length of the body 3 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

This nearly resembles *B. picipes*, but it is much smaller, the prothorax is more distinctly channelled, the elytra have no black band, and the legs are black.

We have a variety? of this species in Britain, rather larger and not quite so black, with the prothoracic channel less distinct, which Mr. Stephens seems to regard as a variety of *B. pilula*,<sup>3</sup> but it is only three-fourths of the size of that species, rather wider in proportion to its length, and its pubescence is of a different colour. The only thing in which they agree is in having three interrupted velvety stripes on the elytra, but in *B. pilula* the first is more distant from the suture than in *B. concolor*.

(167) 3. \* BYRRHUS CYCLOPHORUS. *Circle-bearing Byrrhus.*

*B. (cyclophorus) ferrugineus, supra niger, pube obscurus, coleoptris circulo pallido subinterrupto inscriptis.*  
 Circle-bearing Byrrhus, ferruginous, above black, gloss obscured by pubescence; coleoptra inscribed with a pale subinterrupted circle.

Length of the body 3¼ lines.

One specimen only taken.

## DESCRIPTION.

Body underneath and limbs dull ferruginous, above black with some cinereous hairs intermixed. Antennæ piceous: elytra with two deep black subinterrupted stripes, and inscribed in the middle with traces of a circle formed of pale, or cinereous hairs, common to both. The circle is probably more distinct in recent specimens.

<sup>3</sup> Steph. *Cat.* 98, 1029, i, δ.

(168) 4. *BYRRHUS VARIUS.* (Fabricius.) *Varied Byrrhus.*

*Byrrhus varius.* Fab. *Syst. Ent.* 60, 2; *Syst. Eleuth.* i, 105, 10. Oliv. *Ent.* ii, 13, 7, 5, t. i, f. 6. Illig. *Kaf. Preuss.* i, 93, 7. Lat. *Gen.* ii, 42, 2. Sturm. *Deutsch.* ii, 104, 11. Gyll. *Ins. Suec.* i, 197, 4. Payk. *Fn. Suec.* i, 76, 2. Panz. *Fn. Germ.* xxxii, t. 3. Thunb. *Ins. Suec.* 67. Linn. *Syst. Nat.* Gmel. iv, 1613, 5. Stew. *Elem.* ii, 36.

—— maculatus. Herbst. *Archiv.* 25, 2.

—— sericeus. Steph. *Illustr. Mandib.* iii, 138, 6.

*Cistela varia.* Lat. *Tyr. Ins.* i, 71, 2.

—— sericea. Forst. *Cent.* i, 15. Marsh *Ent. Brit.* i, 104. Steph. *Cat.* 98, 1034, 6.

Voet. *Col. t.* xxxii, f. 4? Schæff. *Icon. t.* cccxvii, f. 4. H—r. *Ins.* i, 64, 53.

Length of the body  $2\frac{3}{4}$  lines.

Several specimens taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body underneath black. Head and prothorax bronzed, the gloss obscured by glittering hairs, above the scutellum is a patch of golden ones: scutellum channelled, covered with paler hairs: elytra slightly furrowed, bronzed with the alternate interstices of the discoidal furrows green-bronzed, spotted with little velvety patches of black hairs.

The European specimens have not the patch of golden hairs above the scutellum: in other respects they are precisely the same.

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Taking our departure from the *Geadephaga*, or terrestrial branch of the *Predaceous*, we have at length arrived at the confines of the *Lamellicorn*, Beetles; but before we proceed to the consideration of them, we must revert to the aquatic branch, and the tribes, connected with it, that tend also to the same point: and here, as our former route, if I may so speak, was by land; so now we must chiefly travel by water, since the *Philhydrida* of Mr. Mac Leay, which we are next to describe, are mostly inhabitants of that element: or at least abound in very humid situations: but our voyage will not be long, since only three specimens belonging to one genus of these tribes were collected in the Expedition.

## V. PHILHYDRIDA. Mac L.

Family HYDROPHILIDÆ. *Hydrophilidans.*

## LXIV. Genus HYDROBIUS. Leach.

A. *Elytris multistriatis.*(169) 1. HYDROBIUS FUSCIPES. *Brown-legged Hydrobius.*

*Hydrobius fuscipes.* Sam. *Compend.* 187, 1. Steph. *Illustr. Mandib.* ii, 128, 2.

*Hydrophilus fuscipes.* De Geer *Ins.* iv, 377, 3. Illig. *Kaf. Preuss.* i, 247, 8. Oliv. *Ins.* iii, 39, 12, 6, t. ii, f. 9. Fourc. *Ent. Par.* i, 66, 4. Stew. *Elem.* ii, 77. Marsh. *Ent. Brit.* i, 403, 3. Gyll. *Ins. Suec.* i, 114, 3. Müll. *Zool. Dan.* 69, 655.

——— *scarabæoides.* Fab. *Syst. Ent.* 228, 4; *Syst. Eleuth.* i, 251, 9. Payk. *Fn. Suec.* i, 180, 3. Herbst. *Ins.* vii, 301, 7, t. cxiii, f. 11. Panz. *Fn. Germ.* lxxvii, f. 12. Ross. *Fn. Etrusc.* i, 196, 482. Ced. *Fn. Ingr.* 88. Goeze. *Eur. Fn.* viii, 714, 3. Linn. *Syst. Nat. Gmel.* iv, 1942, 3.

——— *niger.* Lesk. *Mus.* i, 35, 769.

*Dytiscus fuscipes.* Linn. *Fn. Suec.* 766; *Syst. Nat.* ii, 664, 4. Vill. *Ent.* i, 342, 4. Berk. *Syn.* i, 106. Mart. *Eng. Ent. t.* xxxiii, f. 15.

——— *gyrinoides.* Schrank. *Enum.* 199, 372.

——— *scarabæoides.* Brahm. *Ins. Kal.* 115, 397.

*Scarabæus aquaticus.* Linn. *Fn. Suec.* 404.

*Hydrophilus.* Geoffr. *Ins.* i, 184, 4.

Length of the body 3 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body oblong, convex and rather vaulted; underneath black, very minutely and thickly punctured, with a pale short decumbent hair planted in each puncture; above slightly bronzed, more conspicuously punctured, naked and rather glossy. Head slightly impressed on each side between the eyes; palpi pale rufous, last joint dusky at the tip; antennæ rufous with a black knob: sides of the prothorax with two or three groups of larger punctures: elytra furrowed with thickly punctured furrows, dusky rufous at the sides: legs dark rufous, base of the thighs black.

This is smaller than my British specimens, the furrows of the elytra are rather deep, and their sides more conspicuously rufous.

B. Elytris unistriatis.

(170) 2. HYDROBIUS MARGINELLUS. *Marginal Hydrobius.*

Hydrobius marginellus. Steph. *Illustr. Mandib.* ii, 131, 11?

Hydrophilus marginellus. Fab. *Ent. Syst.* i, 185, 17; *Syst. Eleuth.* i, 252, 19. Illig. *Kaf. Preuss.* i, 246, 5. Herbst. *Ins.* vii, 303, 10, t. cxiv, f. 2, B. Panz. *Ent. Germ.* i, 71, 7. Haw. *Ent. Trans.* i, 85.

———— affinis b. Gyll. *Ins. Suec.* iv, 277, 12.

———— margipallens. Marsh. *Ent. Brit.* i, 408, 21.

Length of the body  $1\frac{2}{3}$  line.

Two specimens taken in Lat. 54°.

DESCRIPTION.

Body subelliptical, convex, minutely punctured, black; above glossy. Palpi and antennæ dusky rufous; knob of the latter black: sides of the prothorax, and the anterior margin dusky rufous: elytra with a single furrow adjoining the suture; sides dusky rufous: tibiæ dusky rufous; tarsi rufous.

I have subjoined a mark of interrogation to the synonym of Mr. Stephens, because he describes his specimens as having an impression above each eye, and two larger ones in the disk of the prothorax, which are not discoverable in the American specimens, nor in the British specimen described from my cabinet by the late Mr. Marsham, under the name of *H. margipallens*.<sup>4</sup>

(171) 3. HYDROBIUS MELANOCEPHALUS. *Black-head Hydrobius.*

Hydrobius melanocephalus. Steph. *Illustr. Mandib.* ii, 129, 5.

Hydrophilus melanocephalus. Oliv. *Ins.* iii, n. 39, 14, 10, t. ii, f. 12, a. b. Fab. *Syst. Eleuth.* i, 253, 23. Gyll. *Ins. Suec.* i, 119, 9. Illig. *Kaf. Preuss.* i, 246, 6; *Mag.* i, 66, 6; *Ent. Trans.* i, 86.

———— minutus. Payk. *Fn. Suec.* i, 182, 6.

———— 4punctatus. Herbst. *Ins.* vii, 395, 12, t. cxiv, f. 4, D.

Length of the body  $2\frac{1}{4}$ — $2\frac{1}{2}$  lines.

Two specimens taken in Lat. 54°.

<sup>4</sup> There appears to be an error of the press in the statement of the length of this species in Mr. Marsham's work; instead of  $\frac{2}{3}$  it should have been  $1\frac{2}{3}$  line, which is the length of the specimen from which his description was taken.



## DESCRIPTION.

Body subelliptical, minutely punctured; underneath black somewhat hairy with very short inconspicuous hairs, above lurid or dirty-yellow, glossy, more conspicuously punctured. Head black with a quadrangular yellow spot before each eye; nose gibbous, separated from the front by a transverse angular line; palpi and antennæ dirty-yellow, the latter with a black knob: prothorax with a dark, discoidal, subquadrangular spot, which does not reach the anterior margin: elytra with a furrow adjoining the suture; shoulders with a dusky line: tibiæ and tarsi dusky rufous.

VARIETY B. Larger, dusky rufous above, spots before the eyes larger and subtriangular: black spot on the prothorax wider but not so near the anterior margin; shoulders of the elytra without a dusky line.

The American specimens have no black spots contiguous to the discoidal one on the prothorax, noticed by Major Gyllenhal and Mr. Stephens. Variety B. is very like Variety  $\gamma$ . of Stephens (Var. *c.* Gyllenhal.) *Hydrophilus dermestoides* of Forster and Marsham, but the front is spotted.

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Most modern Entomologists seem agreed in placing the *Sphæridiadae* next to the *Philhydrida*, and the genera that connect them are clearly *Hydrobius* and *Cercyon*. The insects of this last genus indeed are generally terrestrial, but one species is strictly aquatic—I allude to *Cercyon aquaticum*,<sup>5</sup> which Fabricius has described under the name of *Hydrophilus hæmorrhoidalis*,<sup>6</sup> and which was sent me as such by Gyllenhal so long ago as 1802. Afterwards in his *Insecta Suecica*, he denominates it *Sphæridium hæmorrhoum*.<sup>7</sup> This family, as well as the *Byrrhidae*, has considerable affinity with the *Histeridae*, to which it approaches by *Abræus*; so that the aquatic branch which leads from the predaceous beetles here again seems to meet the terrestrial, and which by means of the *Histeridae* proceed, as it were, together to the Lamellicorn tribes: *Hister* of Linneus, therefore, seems rather an osculant group, than a part and portion of the great section last mentioned.

<sup>5</sup> Step. *Illustr. Mandib.* ii, 138, 6.

<sup>6</sup> *Ent. Syst.* i, 185, 16.

<sup>7</sup> i, 107, 9. Mr. Stephens' *Cercyon hæmorrhoum* (*Illustr. Mandib.* ii, 143, 23) must therefore be a different species. Mr. Stephens, both in his Catalogue (64, 658, 32) and in the work just quoted (145, 32,) has referred to my MS. Catalogue, for a name he has adopted; but the name is incorrectly written. Instead of *Sphæridium convexium*, in my Catalogue it stands, as it should, as the neuter of *convexior*, *S. convexius*.

Family HISTERIDÆ. *Histeridans*.

This family, though not numerous, presents to the scrutinizing Entomologist many different forms, which appear to lead many different ways. M. Latreille has observed with respect to it, that though, in many respects, the *Histers* seem to approach the coprophagous Lamellicorns, yet that other considerations founded upon their anatomy indicate a station near the *Silphidæ*,<sup>8</sup> which he says is likewise the opinion of M. L. Dufour: accordingly there are several forms in the family that appear to tend that way: thus *Onthophilus* exhibits some of the peculiar characters of *Micropeplus*, one of the *Nitidulidæ*; *Sphærites*, one of the last-named family,<sup>9</sup> but of a different general aspect, was long regarded as a *Hister*; and in the typical form, or true *Histers* may be traced many characters which are also to be found in *Necrophorus*. But still I am of opinion that the *Histeridæ* are the steppingstone, as I have before observed, on the one side from the *Necrophaga* and on the other from the *Philhydrida* to the Lamellicorn tribes, but that they diverge into two branches, one leading to the coprophagous Lamellicorns, and the other to the lignivorous ones, or stag-beetles.

Mr. Mac Leay, as I lately hinted, has associated the tribe we are considering, with the latter portion of the Lamellicorn beetles, forming a separate secondary group of them under the denomination of *Rectocera*, which he has further subdivided into two circles or columns, which, from the supposed nature of their food, he distinguishes by the appellations *Saprophagous* and *Thalerophagous*, or devourers of putrescent and nonputrescent substances: the former consisting of the *Histeridæ*, and the latter of the *Lucanidæ*. But is there really this distinction between them? The former group, besides dung, which is their more general pabulum, feed also upon animal matter, upon fungi, and upon decaying timber, and many upon the sap exuding from the wounds of trees; the latter, in their feeding state, are generally found in putrescent wood, and therefore are saprophagous; what they feed upon in their perfect state appears not to have been clearly ascertained, and their oral organs scarcely afford a certain indication of the nature of their food. If they are found to feed upon the exuding sap of trees, this is hardly sufficient to distinguish them from the *Histers*, which very often do the same. It seems to me, therefore, that I best follow the guidance of nature, when I consider the *Histeridæ*

<sup>8</sup> *Crust. Arachn. et Ins.* i, 491.<sup>9</sup> *Gyll. Ins. Succ.* i, 241, 31.

as forming an osculant group between the *Lamellicornia*, and the *Necrophaga* and *Philhydrida*, rather than as belonging to the former, and likewise when I regard the coprophagous *Histers* as connected with the coprophagous, and the lignivorous ones with the lignivorous, Lamellicorns: so that they appear to diverge towards the two extremities of that vast primary group; for that the *Lucanidæ* are most intimately connected not only with *Trogosita* and its cognate genera, but by means of *Prionus* and some new genera, with the great Capricorn group, I hope to make evident hereafter.

I must observe here, however, that there is a certain group of the *Histeridæ* which appears to make a near approach to the *Scolytidæ*: the group I allude to has been formed into a genus, under the name of *Tryponæus* by Eschscholtz,<sup>1</sup> formed of three *Böstrichi* of Fabricius, viz. *B. thoracicus*, *B. proboscideus*, and *B. pustulatus*; which indicates that a road may be formed from the lignivorous *Histeridæ* towards *Scolytus*, &c.

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LXV. Genus HISTER. Linn.

(172) 1. \* HISTER PAYKULII. *Paykull's Hister.*

*H. (Paykullii) ater, nitidus, cubitis tridentatis: dente exteriori fisso; prothorace utrinque bistriato: stria exteriori abbreviata: elytris striis sex discoidalibus, nempe tribus externis distinctis integris, tribusque internis ex punctis conflatis, abbreviatis.*

Paykull's Hister, black, glossy, cubits armed with three teeth, the outermost cleft: prothorax with a double furrow on each side, the exterior one abbreviated: elytra with six discoidal furrows, the three external ones entire and distinctly drawn, the three internal ones abbreviated and composed of punctures.

Length of the body  $3\frac{1}{2}$  lines.

One specimen taken in the Journey from New York to Cumberland-house.

DESCRIPTION.

Body black, glossy. Head circumscribed by a rather deeply ploughed furrow; antennæ piceous with a pale knob; mandibles longer than the head: prothorax rather wider behind, seemingly quite smooth, but under a strong magnifier it appears thickly covered with very minute lightly impressed punctures; it is circumscribed on all sides, by a deepish furrow, between this furrow and the lateral margin is another abbreviated one less impressed; elytra besides a distinct marginal furrow

<sup>1</sup> *Zoologischer Atlas Erster Heft.* 10, 11.

have three discoidal subpunctured ones running from the base to nearly the apex; between the external discoidal furrow and the margin is a series of punctures near the apex, representing what is called the marginal furrow, and between the internal one and the suture are the traces of three others, the first just discernible, drawn, but interruptedly, from the base to the apex; the second consisting of three or four punctures near the apex, and the third parallel with the suture, consisting also of punctures, sometimes confluent, and extending from the apex not quite half the length of the elytrum; the surface of the elytra is covered with minute punctures very lightly impressed, so as not to be discoverable except under a good magnifier: the cubit or anterior tibia is armed with three teeth, the last of which appears cleft from its being furnished at the apex with two short truncated transparent bristles, the two other teeth have only one such bristle.

This species, which belongs to Mr. Stephens' family, A. a. 2,<sup>2</sup> differs in its sculpture, from any *Hister* at present known. Its aspect is that of *H. unicolor*, with which it likewise agrees in size, and many other characters, but it belongs to the section with the sides of the prothorax *two-furrowed*; whereas, in *H. unicolor*, they have only *one* furrow; the elytra likewise of *H. Paykullii* are punctured, which in the species just mentioned are perfectly smooth, even when viewed under a powerful magnifier.

(173) 2. \* *HISTER HARRISII. Harris's Hister.*

*H. (Harrisii) ater, nitidus, punctatus; prothorace utrinque bistriato, postice foveola impresso; elytris septem-striatis: striis interioribus duabus antice abbreviatis; cubitis multidentatis.*

Harris's Hister, black, glossy, punctured; prothorax with two furrows on each side, and a posterior punctiform impression; elytra with seven furrows, the two interior ones anteriorly abbreviated; cubit multidentate.

Length of the body  $3\frac{1}{4}$  lines.

One specimen taken in the Journey from New York to Cumberland-house.

DESCRIPTION.

Body black, glossy, thickly punctured, the punctures on the upper-surface, being most conspicuous. Head circumscribed; antennæ and palpi nearly of a mahogany colour; mandibles longer than the head; nose slightly impressed: prothorax with two furrows at the lateral margin, both nearly reaching the base, the inner one, as usual, when arrived at the anterior margin, with the corresponding one on the other side forming one furrow surrounding the prothorax on three sides; just above the scutellum is a punctiform impression: the elytra, including the submarginal one, have seven distinct furrows, the two next the suture being anteriorly abbreviated and very short, especially the first; from the base of the first, or external discoidal one, an obsolete furrow runs obliquely towards the submarginal one; the four discoidal entire furrows when arrived near the apex of the elytra are bent towards the suture: cubit piceous, armed with five teeth, the three outer ones obtuse.

<sup>2</sup> Cat. 100. Genus 177.

## VI. LAMELLICORNIA.

- i. PETALOCERA. Dum.
- a. COPROPHAGA. Kirb.
- α. HIERENTOMA. Kirb.

Family COPRIDÆ. *Copridans.*

LXVI. Genus ONTHOPHAGUS. Lat.

(174) I. ONTHOPHAGUS LATEBROSUS. (Sturm.) *Lurking Onthophagus.*Onthophagus latebrosus. Sturm. *Cat.* i, 178.Copris latebrosus. Fabr. *Syst. Eleuth.* i, 34, 20.Length of the body  $\left\{ \begin{array}{l} \text{♀ } 3-3\frac{3}{4} \\ \text{♂ } 3\frac{1}{2} \end{array} \right\}$  lines.

A single specimen of the female taken in the Journey from New York to Cumberland-house. I have also a specimen of the male taken in New England, by the late Professor Peck. The larger female was taken, I believe, in the province of Massachusetts, by Mr. Drake.

The species of this little interesting genus, remarkable for the great variety of processes resembling horns, that arm the head of the males, are as widely dispersed as those of any genus of beetles; they are to be found in every climate from the frigid to the torrid zone, nor do they increase in size as they recede from the former and enter the latter, for the most minute species are to be found in Southern India, where they abound, while the largest seem to inhabit temperate climates.

## DESCRIPTION.

♂

Body entirely black, except the hands or anterior tarsi, which are rufous: gloss obscured by hairs. Nose at the apex bent upwards, forming a vertical, triangular, acute tooth; on the vertex are two obsolete transverse ridges: the prothorax is rough with little granules, and anteriorly sends forth a longish wide horn truncated at the end and overhanging the head: the two angles of the apex are elevated, and the space between them is deflexed, and bidentate: the cubits are armed with four sharpish teeth.

♀

The female differs from the male merely in having the shield of the head more distinctly notched on each side, and the apex of the nose rounded and reflexed, but without any triangular horn or tooth; in having two distinct ridges on the vertex, and in having no prothoracic horn, which is replaced by a transverse emarginate ridge in the middle.

(175) 2. \* ONTHOPHAGUS SCABRICOLLIS. *Rough-necked Onthophagus.*

*O. (scabricollis) ater, obscurus, capitis clypeo femineo utrinque integro, vertice bicarinato; prothorace scaberrimo, antice subprominente, cubito obtuse quadridentato.*

Rough-necked Onthophagus, black, not glossy; shield of the head of the *female* not notched on each side, vertex two-ridged; prothorax very rough, anteriorly rather prominent; cubit obtusely quadridentate.

Length of the body 4 lines.

A single female specimen taken in Canada by Dr. Bigsby.

## DESCRIPTION.

This is so like the last insect that I felt at first disposed to consider it as merely a variety. The following differences in their characters induce me however to consider them as distinct. Not to mention the difference of size, the female of *O. latebrous* has a distinct notch on each side of the head, of which there is no trace in *O. scabricollis*, the ridges of the vertex of the latter are more elevated, the prothorax is larger in proportion and much rougher, with larger and more numerous granules, and the four teeth of the cubit, which in the former are long and acute, in the latter are shorter and obtuse.

β. ARENICOLÆ. Kirb.

Family TROGIDÆ. *Trogidans.*

LXVII. Genus TROX. Fab.

(176) 1. \* TROX ARENARIUS. (Fabricius.) *Sand Trox.*

*T. arenarius.* Fab. *Ent. Syst.* i, 87, 3; *Syst. Eleuth.* i, 111, 5. Oliv. *Ent.* i, 4, 10, 9, t. i, f. 7. Herbst. *Ins.* iii, 17, 2, t. xxi, f. 2. Gyll. *Ins. Suec.* i, 11, 3. Panz. *Fn. Germ.* xcvi, t. 1. Sturm. *Deutsch. Ins.* ii, 149, 5. Schneid. *Mag.* 279, 2. Lat. *Gen. Crust. et Ins.* ii, 99, 3.

*Scarabæus arenarius.* Marsh. *Ent. Brit.* i, 25, 41.

—— *arenosus.* Linn. *Syst. Nat. Gmel.* iv, 1586, 398.

*Silpha scabra.* Linn. *Syst. Nat.* ii, 573, 23.

*Trox scaber.* Illig. *Kaf. Preuss.* i, 99, 2. Steph. *Illustr. Mandib.* iii, 215, 3.

—— *barbosus.* Lai. *Ins. Tyr.* i, 31, 3. Scrib. *Ins.* i, 45, 10, t. v, f. 3. *Journ.* i, 58, 45.

—— *hispidus.* Payk. *Fn. Suec.* i, 81, 3.

Length of the body 3 lines.

Taken by Capt. Hall in Nova Scotia.

## DESCRIPTION.

Body oblong, black, without any gloss. Head covered with cinereous varioles; nose a little reflexed, rounded with a slight tendency to be obtusangular; antennæ ferruginous: prothorax with a wide rather obsolete dorsal channel; sides with two impressions, one near the anterior angle, and the other basilar in the disk; base lobed; lateral margin fringed with ferruginous bristles: elytra slightly furrowed, interstices with each a series of elevations crowned with brown bristles, the elevations of the alternate series are minute; anterior tibiæ with three acute teeth, they are also serrated at the base.

b. PHYLLOPHAGA. Kirb.  
 α. STERNUCHA. Kirb.

Family RUTELIDÆ. *Rutelidans*.<sup>3</sup>

LXVIII. Genus PELIDNOTA. Mac L.

(177)

I. PELIDNOTA PUNCTATA. *Dotted Pelidnota*.

*Pelidnota punctata*. Mac L. *Hor. Ent.* i, 158.

*Ratela punctata*. Lat. *Gen.* ii, 106.

*Melolontha punctata*. Fab. *Syst. Ent.* 33, 8; *Syst. Eleuth.* ii, 166, 28. Oliv. *Ent.* i, 5, 22, 18, t. i, f. 6. *Herbst. Ins.* iii, 69, 16, t. xxiii, f. 6. *Illig. Mag.* iv, 78, 28.

*Scarabæus punctatus*. Linn. *Mus. L. U.* 23, 21; *Syst. Nat.* ii, 557, 76. *Drury. Ins.* i, 75, t. xxxiv, f. 5. *Voet. Col.* i, 45, 65, t. viii, f. 65. Müll. *Linn. Nat.* v, 87, 76.

*Onom. Nat.* vi, 937. *Gronov. Zooph.* 146, 438.

Length of the body  $12\frac{3}{4}$  lines.

Taken by Dr. Bigsby in Canada, near Lake St. Clair. Found also in Virginia, Carolina, Maryland, and New York.

## DESCRIPTION.

Body very minutely punctured, glossy, black, underneath a little bronzed, above luteous. Head black at the base, with the blackness bilobed; punctures of the nose confluent; antennæ luteous; palpi black: prothorax, as well as the head, darker than the elytra; sides confluent punctured, a round blackish spot on each side near the lateral margin: scutellum black, a little bronzed, with a basilar luteous spot: elytra with three distant black-brown spots or dots, the first and last oblong, the middle one round; breast, and base of the abdomen, hairy with long hairs: legs black, a little bronzed; cubit tridentate.

<sup>3</sup> The *Rutelidæ* exhibit the vertical prosternum of the *Dynastidæ*, which is wanting in the *Anoplognathidæ*, I therefore consider them, with Latreille, as more immediately connected with the former family, and have placed them accordingly.

$\beta$ . APOSTERNA.<sup>4</sup> Kirb.

Family SERICIDÆ. *Sericidans*.

LXIX. \* Genus CAMPTORHINA. Kirb.

*Labrum* transverse, emarginate.

*Mandibles* very short, subtrigonal, curving, without teeth; molar space subtriangular, surface furrowed, the outer margin appearing denticulated from the ridges of the furrows being more elevated there, on the opposite side there appears to be a kind of channel.

*Maxillæ* linear, incurved at the tip and terminating in four stout teeth.

*Labium* oblong, forming one piece with the mentum; narrowed, subemarginate, and sloping inwards at the apex.

*Palpi maxillary*, four-jointed, gradually incrassated: first joint very minute, second obconical; third of the length of the second, thicker; fourth as long as the second and third together, rather oblong.

— *labial*, three-jointed, filiform: last joint as long as the two first together.

*Antennæ* nine-jointed: scape much incrassated at the apex; the pedicel less incrassated, spherical-oblong; the two following joints rather filiform; the fifth and sixth shorter and inclining to pateriform; and the three last elongated and forming a rather slender knob.

Body oblong, subcylindrical. *Head* inserted, subtriangular, with the vertex of the triangle anterior, truncated; *nose* short, transverse, distinct, reflexed, separated from the *postnasus* on each side by a cleft; *nostril-piece* inflexed, transverse, and nearly vertical; *postnasus* distinct, depressed, curved; *front* convex; *eyes* subhemispherical; *canthus* septiform: *prothorax* transverse, with an anterior sinus taken from its whole width to receive the head, posteriorly subrepand: *scutellum* an isosceles triangle: *elytra* linear: *breast-bones* not prominent: *medipectus* or midbreast elevated: *legs* thus located ::; *tarsi* subsetaceous; *claws* two, very short, incurved, each bifid or bipartite, with the lobes acute: *podex* only partly covered.

This genus is very nearly related to *Serica* of Mr. W. S. Mac Leay. It differs, however, in the number of teeth that terminate the maxillæ, having only four instead of six; in having both the lobes of the claws that arm the tarsi acute, whereas in that genus the inner one is truncated, and in having none of the silky bloom which the species of *Serica* usually exhibit. Mr. Mac Leay speaks of its antennæ being ten-jointed, this, if correct, would furnish another striking distinction, but in *S. brunnea*, the type of the genus, under a very strong magnifier I can perceive only nine joints, and M. Latreille in this agrees with me.<sup>5</sup>

<sup>4</sup> This tribe is distinguished by having no prominent prosternum or mesosternum.

<sup>5</sup> *Crust. Arachn. et Ins.* i, 562. Not. 2.



(178) 1. \* CAMPTORHINA ATRACAPILLA. *Black-cap Camptorhina.*

*C. (atracapilla) glabra, subnitida, punctata, sordide brunnea; prothoracis disco capiteque postice, nigris; elytris late sulcatis: sulcis inordinate punctatis.*

Black-cap Camptorhina, naked, rather glossy, punctured, of a dirty mahogany colour; with the disk of the prothorax, and posterior part of the head, black; elytra widely furrowed, furrows irregularly punctured.

Length of the body  $5\frac{1}{4}$  lines.

Taken in Canada by Dr. Bigsby, and in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body rather glossy, with very few hairs, grossly punctured, of a dull mahogany colour. Antennæ and palpi rufous; nose smooth, piceous; afternose piceous, thickly punctured; the rest of the head black, less densely punctured with the vertex impunctured: limb of the prothorax mahogany-coloured; disk of the scutellum smooth: elytra with eight wide shallow furrows, irregularly punctured; the ridges between them impunctured, and obtuse: legs hairy or bristly, tarsi chestnut.

VARIETY B. Elytra chestnut, paler at the sides.

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 Family DILOTAXIDÆ. *Diploaxidans.*

LXX. Genus DILOTAXIS. Kirb.

*Labrum* transverse, lanceolate, anteriorly emarginate.

*Mandibles* very short, trigonal, incurved, truncated and concavo-convex at the apex; molar space small, irregular, channelled?

*Maxillæ* very short, incurved, incrassated at the base; apex armed with three short, stout, conical teeth.

*Labium* very short, transverse, entire, separated by a faint line from the mentum.

*Mentum* quadrangular, rather wider than long.

*Palpi maxillary* four-jointed, very minute, cylindrical; second and third joints thicker, equal in length, obconical; last thickest and longest, lanceolate-ovate, acute.

— *labial* three-jointed; first joint obconical; second subcylindrical; third nearly as long as the other two, but scarcely thicker, conical.

*Antennæ* ten-jointed; scape elongato-obconical; pedicel nearly spherical; third and fourth joints conical; fifth and sixth nearly top-shaped; seventh pateriform;<sup>6</sup> the three last forming a short ovate knob.

<sup>6</sup> See *Introd. to Ent.* iv, 334, l. 2.

Body between oblong and obovate, not hairy. *Head* inserted, subtriangular with the vertex of the triangle truncated; *rhinarium* transverse, vertical, widely emarginate; *nose* transverse, distinct, anterior margin reflexed and subemarginate; no distinct *postnasus* or afternose; *canthus* septiform, cleaving;<sup>7</sup> *prothorax* transverse with an interior sinus of its whole width to receive the head; *scutellum* short, triangular, somewhat rounded at the vertex; *podex* and part of the penultimate dorsal segment of the *abdomen* uncovered; legs thus located ∴; *cubit* tridentate; *tarsi* filiform, slender; *claws* bipartite, the interior lobe the shortest and widest, and very obtuse; the exterior very slender and acute.

This genus, at the first blush, seems to exhibit some affinity both with *Chalepus* and *Apogonia*; with regard to the latter, this arises merely from its having few or no hairs, and from its rows or punctures in pairs observable in the elytra; but with the former it agrees in more particulars, for its mandibles are truncated at the apex and concavo-concave, as those of *Chalepus* are represented, and correctly, in Mr. Mac Leay's figure;<sup>8</sup> the antennæ likewise are not very different, except that the scape in the latter insect is more dilated at the apex: but this exhibits a character which at once separates it, and widely, from *Diplotaxis*, the *prosternum* sends up a vertical process behind the base of the arms, hairy at its summit, a character which is to be detected, but more or less conspicuously, in all the various genera and subgenera that form Mr. Mac Leay's large family of *Dynastidæ* though it is less prominent in *Megasoma*, the most gigantic genus of them all. The maxillæ, often so constant, in this family or rather tribe, vary without end, the mandibles are more constant, as is also the labium, but the vertical prosternum,<sup>9</sup> varying as to elevation and shape, is their constant diagnostic: so that it is evident that *Chalepus* is one of those intermediate forms which connect two tribes or circles; allowing this, and that the *Rutelidæ* also and *Anoplognathidæ* are intimately connected with the *Dynastidæ*,<sup>1</sup> we have another instance of unconnected ramifications, which lead by different routes to different tribes. It may be here not out of place to observe, that in the true *Rutelidæ*, there is the vertical *prosternum* of the *Dynastidæ*, and the horizontal projecting *mesosternum*<sup>2</sup> of the *Anoplognathidæ*, which last have no elevation of the prosternum.

(179) 1. \* *DIPLOTAXIS TRISTIS*. *Sad Diplotaxis*.

*D. (tristis) castanea punctatissima; scutello levi; elytris puncto-siriatis: striis discoidalibus didymis; tarsis intermediis tibia longioribus; antennis palpisque rufis.*

Sad *Diplotaxis*, chestnut, thickly punctured, scutellum without punctures; elytra with punctures in rows, the discoidal rows paired; intermediate tarsi longer than the tibia; antennæ and palpi rufous.

PLATE V, FIG. 3.

Length of the body 5—5½ lines.

Several specimens taken in Lat. 54°. Taken also in Nova Scotia by Capt. Hall.

<sup>7</sup> I call the canthus cleaving, when it appears to enter the eye.

<sup>8</sup> *Hor. Entomolog. t. ii, f. 15, D.* Mr. Mac Leay describes the mandibles as acute, but this appears a slip of the pen, for they are obliquely truncated at the apex and concavo-concave, as Mr. Curtis has represented them.

<sup>9</sup> *Introd. to Ent. iii, 368, B.*

<sup>1</sup> *Hor. Ent. 67.*

<sup>2</sup> *Introd. to Ent. iii, 378, C.*

I at first regarded this species as a variety of *Melolontha mæsta* of Knoch, but upon comparing it with Germar's description,<sup>3</sup> it appears quite distinct; for it is not at all bronzed, the nose is not rounded, and the four posterior tarsi, especially the intermediate pair, are longer than the tibiæ. It comes very near to Say's *M. mæsta*,<sup>4</sup> (which is quite distinct from Knoch's,) from which it is principally distinguished by its impunctured scutellum.

## DESCRIPTION.

Body dark chestnut, more or less grossly punctured above and below. Head thickly punctured with a pair of impressions between the eyes; nose subemarginate; antennæ and palpi rufous: prothorax thickly punctured, slightly impressed at the four angles: scutellum impunctured: elytra rather paler than the head and prothorax, with nine rows of punctures, viz. a single one at the suture, four arranged in pairs in the disk, and four in the sides; the interstices between the rows are also irregularly punctured; the four posterior tarsi, especially the intermediate pair, are longer than the tibiæ.

OBS. In more recently disclosed specimens the body is often entirely pale-chestnut and sometimes rufous.

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 Family MELOLONTHIDÆ. *Melolonthidans*.

## LXXI. Genus RHIZOTROGUS. Lat.

*Palpi maxillary* four-jointed; first joint minute; second rather long, obconical; third shorter triangular; last thicker and longer than the others, subovate, rather obtuse.

— *labial* three-jointed; first slender, obconical; second thick obconical; last not thicker than the second, obconical.

*Antennæ* ten-jointed; scape incrassated; elongato-obconical; pedicel spherical; three following joints subcylindrical projecting internally towards the apex into an obtuse angle; sixth and seventh rather platter-shaped; three last elongated into a linear knob of almost the length of the rest of the antennæ.

Body oblong, subcylindrical. *Head* short, inserted, subtrapezoidal; *nose* distinct, separated by a wavy line, transverse, anteriorly rounded, emarginate with a reflexed margin: *prothorax* transverse, curved, behind and at the sides obtusangular with angles rounded: *scutellum* subtriangular, vertex rounded: *elytra* with two obsolete abbreviated ridges: *anus* uncovered; *podex* large: *breast* very hairy: location of *legs* ∴; *spurs* 1, 2, 2; *tarsi* long, filiform: *claws* bifid, inner division divaricated and dentiform.

<sup>3</sup> *Insect Spec. Nov.* i, 122, 208.

<sup>4</sup> *Journ. Acad. Philad.* v, 197, 3.

M. Latreille, in his last work,<sup>5</sup> has united to this genus *Amphimalla solstitialis*, which on account of its having only nine joints in its antennæ, he had, and I think with reason, considered as distinct; for besides this character, the mandibles are of a very different shape, being shorter and smaller in proportion to the size of the animal, with the truncated portion narrower and concavo-convex; the maxillæ are armed with only four teeth, and are more incrassated at the base; the claws have only a minute tooth at the base, and the elytra are many-ridged, besides other minor differences; I think, therefore, I am justified in still considering them as belonging to different genera. *Rhizotrogus* should be placed between *Amphimalla* and *Melolontha*, from which last it may always be distinguished by having only three leaves in the knob of its antennæ.

As Latreille's character of the genus is insufficient, I have drawn up a new one.

(180) I. RHIZOTROGUS FERVENS. *Fervid Rhizotrogus*.

Melolontha fervens. Gyll. Schön. Syn. iii, App. 74, 106  
 ——— ferivida. Oliv. Ins. i, 5, 24, 21, t. ix, f. 109?  
 ——— quercina. Knoch. Ins. i, 74, 2?

Length of the body  $9\frac{1}{2}$ —10 lines.

Two specimens taken in Lat. 54°. B, in Canada by Dr. Bigsby.

DESCRIPTION

Body either pale or dark chestnut, rather glossy, naked. Head short, black, thickly and grossly punctured, vertex transversely impunctured; nose separated by a bisinuated line from the front, anteriorly reflexed and submarginate; antennæ testaceous with the knob in the males paler and elongated: prothorax transverse, usually darker in the disk, punctured with scattered punctures; sides subobtusangular with the margin very obsoletely notched; behind subrepand or bisinuate: scutellum with a few scattered punctures towards the sides: elytra four times the length of the prothorax, with three obsolete ridges, very slightly punctured and wrinkled: disk of the abdomen impunctured: breast covered with long hairs: legs testaceous; cubit obtusely tridentate; tarsi longer than the tibiæ.

VARIETY B. Rather wider in proportion, entirely dark chestnut, the legs excepted. In every other respect precisely the same.

<sup>5</sup> Crust. Arachn. et Ins. i, 561, note 1.

(181) 2. \* RHIZOTROGUS DRAKII. *Drake's Rhizotrogus.*

*R. (Drakii) castaneus, nitidus, punctatus; antennis testaceis; podice magno.*  
 Drake's Rhizotrogus, chestnut, glossy, punctured; antennæ testaceous; podex large.

Length of the body  $9\frac{1}{4}$ — $11\frac{1}{4}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house. B and C, by Mr. Drake in Massachusetts.

## DESCRIPTION.

This species is extremely similar to the last, it differs principally in having the sides of the scutellum more thickly punctured, the ridges of the elytra, except the sutural one, are scarcely discoverable, and the podex larger and rounder at the apex: the tarsi also are longer in proportion: the knob of the antennæ in all the specimens is longer.

B. Much larger, and the elytra appear somewhat more thickly punctured, but it is scarcely distinct.

C. Like A, but the ridges of the elytra are all discernible.

Family MACRODACTYLIDÆ. *Macroductylidans.*

LXXII. Genus DICHELONYCHA. Harr.<sup>6</sup>

*Labrum* transverse, lanceolate, scarcely emarginate.

*Mandibles* short, trigonal, incurved, toothless, acute: molar space transverse, furrowed.

*Maxillæ* minute, linear, bidentate with short teeth.

*Labium* subquadrangular, not distinct from the mentum.

*Palpi maxillary* four-jointed; first joint very minute; second longer than the third, obconical; third triangular; last joint as long as the three others together, very large, subsecuriform.

— *labial* three-jointed; joints short, subfiliform; last truncated.

*Antennæ* nine-jointed; scape obconical, incrassated; pedicel subspherical; third and fourth joints subfiliform; fifth obconical; sixth subturbinate; the three last forming a short subovate knob.

Body narrow, subcylindrical. *Head* subquadrangular; *nose* transverse, separated by an indistinct obtusangular line, anteriorly reflexed; *rhinarium* transverse marked with a transverse series of rather large punctures; *eyes* prominent; *canthus* entering: *prothorax* hexagonal, the sides being obtusangular: *scutellum* rounded at the vertex, dilated at the base: *elytra* linear, rounded at the apex, obsoletely ridged, wrinkled; *epipleura* vertical, narrow: *legs* rather slender; hind legs long; *cubit* tridentate; *tarsi* filiform; *claws* equal, all bifid at the apex: *podex* subtriangular.

<sup>6</sup> I received a species of this genus under this name from Dr. Harris, which therefore I adopt. I had call. d it *Stenia*.

This genus evidently belongs to the same family with *Macroductylus*, from which it is distinguished by having its maxillæ armed only with two teeth, the last joint of its palpi of a different shape, and its labium approaching to a square form: whereas in the latter genus the maxillæ are more conspicuous and armed with three teeth, the last joint of the palpi is subovate, and the labium is oblong and channelled.

The species of this genus, as far as at present known, appear to be confined to the more northern parts of the new world; I have seen none south of the province of Massachusetts, from whence I have received specimens both from Dr. Harris and Mr. Drake. Type of the genus *Melolontha linearis* Herbst.<sup>7</sup>

(182) I. \* DICHELONYCHA BACKII. *Back's Dichelonycha.*

*D. (Backii) nigra albido-pilosa; elytris æneo-viridibus sericeis; antennis castaneis, clava nigra; naso valde, reflexo.*

Back's Dichelonycha, black: hairy, hairs white; elytra bronzed-green, silky; antennæ chestnut with black knob; nose much reflexed.

PLATE II. FIG. 6.

Length of the body  $4\frac{1}{2}$  lines.

Several specimens taken in Lat. 54°.

DESCRIPTION.

Body black, glossy, hairy, especially underneath, with white decumbent hairs; above thickly and coarsely punctured. Nose much reflexed, margin entire; stalk of the antennæ chestnut: elytra silky, green, more or less bronzed.

VARIETY B. Antennæ rufous. Tarsi pale chestnut.

(183) 2. \* DICHELONYCHA VIRESCENS. *Virescent Dichelonycha.*

*D. (virescens) picea, subtus piloso-nivea; antennis pedibusque flavo-testaceis; elytris flavis sub luce virentibus; prothorace dorso subcanaliculato, utrinque impresso.*

Virescent Dichelonycha, piceous, underneath covered with snowy hairs; antennæ and legs yellow-testaceous; elytra yellow with a green lustre: prothorax with a slight dorsal channel, and an impression on each side.

Length of the body  $4\frac{3}{4}$ —5 lines.

Taken in Canada by Dr. Bigsby, in Nova Scotia by Dr. Mac Culloch, in Massachusetts by Dr. Harris, and in Pennsylvania by Dr. Horsfield. Dr. Bigsby found it common on the different species of *Salix*.

<sup>7</sup> Schön. *Synon.* iii, Append. 103, 143.

## DESCRIPTION.

Body piceous, thickly covered underneath, except the disk of the breast and abdomen, with decumbent snowy hairs, minutely punctured, punctures most numerous in the upper side. Head nearly black, covered with glittering decumbent hairs; nose very obtuse and almost truncate, less reflexed than in *D. Backii*, reflexed part obscurely rufous; rhinarium, underside of the head, and mouth with its organs, rufous; antennæ reddish-yellow: prothorax nearly black with the sides a little paler, with a longitudinal discoidal rather obsolete channel and an impression on each side; sprinkled with short glittering decumbent hairs: scutellum rufous, thickly covered at the base with whitish decumbent hairs: elytra reddish-yellow tinted with green, sprinkled with short decumbent whitish hairs, the lateral punctures are almost arranged in dense rows: abdomen rufous; podex thickly covered with snowy hairs: legs reddish-yellow; tarsi darker; posterior tibiæ black, reddish at the base; posterior tarsi piceous.

VARIETY B. Head and prothorax rufo-piceous; legs rufous.

C. Head and prothorax rufous mottled with dusky; elytra with a green spot at the shoulders and tips; posterior legs entirely rufous: trunk rufous.

N.B. This may be distinct, but the prothorax has the channel and impressions observable in A. & c.

Dr. Harris sent me a specimen of *D. virescens* as the *Melolontha linearis* of Herbst and Schönherr, but it is not likely that so accurate and minute a describer as Major Gyllenhal, who usually lets no character escape him, should have overlooked the dorsal channel and lateral impressions of the prothorax of this species. Besides the colour and other characters do not agree.<sup>8</sup>

(184) 3. \* DICHELONYCHA TESTACEA. *Testaceous Dichelonycha.*

*D. (testacea) tota rufo-testacea; elytris subvirescentibus, capite prothoraceque minutissime punctulatissimis.*

Testaceous Dichelonycha, entirely rufo-testaceous; elytra with a slight tint of green; head and prothorax very minutely and thickly punctured.

Length of the body  $4\frac{1}{3}$  lines.

Taken by Dr. Bigsby in Canada.

## DESCRIPTION.

Very similar to Variety C of the preceding species; but the body, with the exception of the eyes which are black, is entirely of one colour, rufo-testaceous, the head, prothorax, and tarsi being rather darker than the rest; the eyes are larger and more prominent; the head and prothorax, especially the latter, are more thickly and minutely punctured; and in this there is no dorsal channel; its margins, especially the lateral, are more hairy, the elytra exhibit no humeral or apical green spot; and they are very slightly tinted with that colour.

<sup>8</sup> Schön. *ubi supr.*

c. MELITOPHILA. Lat.

Family CETONIADÆ. *Cetoniadans.*

LXXIII. Genus CETONIA. Fab.

(185) 1. CETONIA FULGIDA. (Fabricius.) *Fulgid Cetonia.*

*Cetonia fulgida.* Fab. *Syst. Ent.* 48, 27; *Syst. Eleuth.* ii, 150, 77. Oliv. *Ent.* i, 6, 33, 35, t. viii, f. 75. Linn. *Syst. Nat.* Ed. Gmél. iv, 1574, 336. Voet. *Col.* i, 17, 24, t. iii, f. 24?

Length of the body  $7\frac{1}{2}$  lines.

Taken in Canada, at Lake St. Clair, by Dr. Bigsby.

## DESCRIPTION.

Body depressed, of a beautiful glossy green. Head black underneath, above grossly punctured; eyes reddish-brown; antennæ brown-black; nose anteriorly submarginate and a little reflexed; prothorax with a triple posterior sinus, grossly but not thickly punctured, sides luteous: scutellum an isosceles triangle, impunctured: elytra, in some lights, luteous, in others with a shade of green; at the base grossly but not thickly punctured, the remainder of the elytrum is acducted like net work; disk longitudinally depressed: podex dusky, luteous at the apex, with four triangular, white, basilar spots; abdomen underneath with a double series of triangular white spots on each side, the outer ones elongated: sides of the breast hairy; mesosternum suborbicular, hairy; legs luteous; tarsi and base of the cubits, brown-black.

Family TRICHIADÆ. *Trichiadans.*

LXXIV. Genus TRICHIUS. Fab.

(186) 1. TRICHIUS BIGSBII. (Kirby.) *Bigsby's Trichius.*

*Trichius Bigsbii.* Kirb. *Zool. Journ.* iii, 155, t. v, f. 7

Length of the body 7 lines.

Taken in Canada, near Lake St. Clair, by Dr. Bigsby.



## DESCRIPTION.

This species exhibits the habit and general aspect of *T. fasciatus*, but it is larger and less hairy. Body obovate, black, covered more or less with tawny longish hairs. Head quadrangular; nose reflexed, emarginate; antennæ and palpi luteous, black at the tip: prothorax trapezoidal, narrowest anteriorly, sides rounded or subotusangular, posteriorly with an obsolete sinus near each angle: scutellum short, rounded at the apex: elytra without hairs, covered as it were with a bloom; luteous with a black margin and nine black spots—viz. one large one at the shoulders, seven in the disk arranged transversely 2, 3, 2, and one larger than the rest on the apical tumour; the humeral and apical spots are glossy: three tawny-yellow mealy spots, the intermediate one straight and longitudinal, and the lateral ones sinuated and oblique, mark the podex: the tibiæ and tarsi of the four anterior legs are deep ferruginous; cubit bidentate.

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x. \* Subgenus TRICHINUS. Kirb.

Trichini. Kirb. *Zool. Journ.* iii, 156, \*\*.

The insects that compose this little group, as far as at present known, are all North American; and are distinguished from the legitimate *Trichii* (*Legitimi* K.) by having the last joint of the palpi more slender, and the elytra hairy without any of the bloom observable in those of *T. fasciatus*, *Bigsbii*, &c. The type of the subgenus is *T. piger* Fab.

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(187) 2. \* TRICHIUS (*Trichinus*) ASSIMILIS. *Similar Trichinus.*

*T. T. (assimilis) niger, subhirsutus, nitidus; elytris disco macula basilari communi pallida; singulis fasciis duabus, lineolaque suturali pollinoso-niveis.*

Similar *T. Trichinus*, black, hairy, glossy; elytra taken together with a discoidal basilar pale spot, each marked with a pair of bands, and a line parallel to the suture, mealy-white,

Length of the body  $4\frac{1}{4}$ —5 lines.

Taken in Lat. 65°.; in Nova Scotia by Capt. Hall; and in Massachusetts by Dr. Harris.

## DESCRIPTION.

Body obovate, black, covered more or less with long yellowish hairs. Head punctured; nose reflexed, emarginate; stalk of the antennæ testaceous, scape and knob black; palpi dusky: prothorax punctured, less hairy in the disk, not channelled: elytra black, very short, depressed next the suture with an intermediate ridge; at the base is a large pale-yellow spot common to both elytra, from which run a pair of narrow, white, mealy bands, which nearly reach the external margin, and a white mealy stripe adjoining the suture also runs from the same spot to the apex of the elytrum: the podex is covered with long yellowish hairs, so thick on the sides as almost to conceal the oblong white mealy spot common to the subgenus: legs black.

N. B. In the specimen taken in the Expedition, the white mealy stripe next the suture appears to have been rubbed off and is replaced by a continuation of the pale spot.

There appear to be many species of this subgenus. That now described Dr. Harris thought might be a variety of *T. piger* F, but it differs from that species not only in painting, but also in sculpture and cloathing; for it has no channel on the prothorax, which is very conspicuous in the former insect; the podex is covered with very long and dense hairs so as to conceal the lateral mealy spots, while in *T. piger* the hairs are very short and the mealy spots very conspicuous. The head and thorax of the latter are bronzed, the whole of the antennæ testaceous, the elytra, podex, and legs<sup>9</sup> also, are testaceous, the former with a pair of abbreviated lateral bands, but no sutural stripe. So that *T. assimilis* is clearly distinct.

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(188) 3. \* *TRICHIVS (Trichinus) ROTUNDICOLLIS. Round-necked Trichinus.*

*T. T. (rotundicollis) niger, pallido villosus; prothorace suborbiculato, canaliculato; elytris fasciis duabus intus testaceis, extus, lineolaque ante scutellum, pollinoso-albidis.*

Round-necked *T. Trichinus*, black with pale hair: prothorax suborbicular, channelled; elytra with two bands internally testaceous, externally, as well as a line before the scutellum, mealy-white.

Length of the body  $5\frac{1}{2}$  lines.

Taken in Nova Scotia by Capt. Hall.

<sup>9</sup> Olivier's *Cetonia pigra* (*Ent.* i, 6, 64, 78, t. vii, f. 54) is described as having the legs black-bronzed. If this is not an error it must be a distinct species.

## DESCRIPTION.

Body obovate, black; covered, particularly underneath, with longish pale hairs. Head very thickly punctured; nose reflexed, emarginate; stalk of the antennæ, excluding the scape, testaceous: prothorax suborbicular, with the segment of a circle taken out next the head; very thickly punctured, channelled, sprinkled with short yellowish hairs; at the side of each of the four angles is a mealy-white spot: the elytra next the lateral margin have two transverse mealy-white streaks or bands, which are continued towards the suture by a broader, naked, ferruginous, obscure band; just below the scutellum, on each elytrum, is another mealy stripe, and parallel with the suture is an obscure, naked, ferruginous one: podex hairy with the ordinary mealy pale spots very conspicuous; it is sculptured with transverse undulated lines: cubits robust with two stout teeth: a mealy spot marks the base of the posterior legs.

(189) 4. \* TRICHIUS (*Trichinus*) VIRIDANS. *Verdant Trichinus*.

*T. T. (viridans) supra viridans, subtus pallido-villosus; prothorace subtrapezoideo, canaliculato; elytris fasciis duabus intus testaceis, extus, lineolaque ante scutellum, pollinoso-albidis.*

Verdant *T. Trichinus*, above green, underneath with pale hair: prothorax subtrapezoidal, channelled; elytra with two bands internally testaceous, externally, as well as a line before the scutellum, mealy-white.

Length of the body  $4\frac{4}{5}$  lines.

A single specimen taken in Canada by Dr. Bigsby.

## DESCRIPTION.

In the markings of its elytra this species agrees precisely with that last described, but the upper side of the body, especially the head and prothorax, is green; the latter is of a different shape and less thickly punctured; and the cubit and its teeth are less robust: the podex also is more hairy. These can scarcely, all of them, be mere sexual distinctions.

It seems intermediate between *T. rotundicollis* and *T. viridulus*.

xi. \* Subgenus GYMNODUS. Kirb.

Gymnodi. Kirb. *Zool. Journ.* iii, 157, \*\*\*\*\*.

This is a very natural group of the genus *Trichius*, the species of which are common to Europe and North America. The type of it, *T. Eremita*, has long been known as a European insect. It was first noticed and figured by Rösels, and received its present name from Scopoli.<sup>1</sup> The species that compose it are nearly naked, and without any mealy spots: the nose is truncated, and the cubit is tridentate. It appears to make a near approach to the South American *Goliathi*.

<sup>1</sup> *Carn.* 7, 15.

(190) 5. \* *TRICHIUS (Gymnodus) RUGOSUS. Wrinkled Gymnodus.*

*T. G. (rugosus) nigro-piceus, subnitidus; prothorace canaliculato, utrinque obtusangulo, cum capite confluentem punctato; elytris confluentem rugosis.*

Wrinkled *T. Gymnodus*, nigro-piceous, rather glossy: prothorax channelled, obtusangular on each side, with the head confluent punctured: elytra confluent wrinkled.

Length of the body  $10\frac{1}{2}$ —13 lines.

Taken in Nova Scotia by Dr. Mac Culloch and Capt. Hall.

## DESCRIPTION.

Body rather glossy, dark pitch-colour, naked above with a few scattered hairs on the underside and on the legs. Head above plane, thickly covered with impressions and punctures that anastomose and run into each other, in some specimens leaving here and there some elevated, levigated, narrow spaces: nose anteriorly transverse, reflexed: prothorax with a longitudinal posteriorly abbreviated channel; sides obtusangular; surface covered, less thickly in the disk, with large, and often confluent, punctures: scutellum an isosceles triangle, channelled, with a few scattered large punctures on each side: elytra indistinctly furrowed, confluent and irregularly wrinkled, wrinkles marked with shallow indistinct punctures, interstices elevated: cubit acutely tridentate: podex transversely irregularly acucted.

(191) 6. *TRICHIUS (Gymnodus) FOVEATUS. Impressed Gymnodus.*

*T. G. (foveatus) piceus, subnitidus; elytris dilutioribus, æneo-tinctis; vermiculatim confluentem rugosis; prothorace confluentem punctato, canaliculato, utrinque subfoveato: capite inter oculos profunde foveato.*

Impressed *T. Gymnodus*, piceous, somewhat glossy; elytra pale, a little bronzed, wrinkled, wrinkles contorted like worms and confluent; prothorax confluent punctured, channelled, somewhat impressed on each side; head with a large deep impression between the eyes.

Length of the body  $11\frac{1}{2}$  lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Near the preceding species, but perfectly distinct. Body nearly naked, somewhat glossy, of a dark pitch-colour. Nose and front between the eyes with a very deep and large impression, the bed of which is acucted in circles with a minute puncture in the centre of each; the rest of the head is confluent punctured; above the bed of the antennæ the front rises into a rather lofty levigated prominence: the prothorax is shaped like that of *G. rugosus*, but is rather less obtusangular, the channel is deeper, with its sides more elevated, and there are one or two slight impressions between it and the margin; the punctures on the disk are rather more numerous: the elytra are paler than the rest of the body and a little bronzed, the wrinkles of the surface are more vermiform than in the species just named, without any punctures, and the appearance of furrows is less distinct: the podex is distinctly punctured and scarcely acucted; and the cubit is sinuated rather than dentated, the three prominences being extremely obtuse.

## ii. RECTOCERA.

Having finished the petaloceros or rather orthoceros Lamellicorn beetles, we must next proceed to those the stalk of whose antennæ mostly forms an angle with the scape, so that these organs appear as if they were broken, which, as was before observed,<sup>2</sup> form one branch of Mr. Mac Leay's Rectoceros beetles. These are not to be regarded, though they exhibit an analogical relation, respect being had to their food,<sup>3</sup> as following the *Trichiadæ* in the line of affinity, but in order to link them to their apparently nearest relatives, we must retrace our steps to the *Histeridæ*, where we shall find a tribe that are lignivorous, of a depressed form, and with more than usually protended mandibles, of which *Hololepta maxillosa* may be regarded as the type;<sup>4</sup> it is towards these that the *Lucanidæ* appear to tend, at one extremity, though still many forms are wanted to fill the interval.

Although I have not altered Mr. W. S. Mac Leay's denomination of the tribe before us, it must be observed that, in some families belonging to it, as the *Lamprimidæ*, *Passalidæ*, &c. the antennæ are not broken. The family last mentioned, the *Passalidæ*, is not only distinguished by the stalk of the antennæ not forming an angle with the scape, as in the *Lucanidæ*; but the form of the insects that compose it, is narrower, more cylindrical, and less depressed. From this family, as we shall see hereafter, a branch appears to diverge, by the Bostrichidans to the great Rhynchophorous tribe.

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Family LUCANIDÆ. *Lucanidans*.

LXXV. Genus PLATYCERUS. Lat.

(192) I. PLATYCERUS PICEUS. *Piceous Platycerus*.

*Lucanus piceus*. Web. *Obs. Ent* i, 84, 2. Fab. *Syst. Eleuth.* ii, 252, 20. Illig. *Mag.* i, 249. Thunb. *Mem. Nat. de Mosc.* i, 202, 30. Schön. *Syn.* iii, 327, 31.  
 ——— frontosus. Knoch.

Length of the body 6 lines.

A single specimen taken in the Journey from New York to Cumberland-house.

<sup>2</sup> See above, p. 122.

<sup>3</sup> The *Trichiadæ* as well as the *Rectocera* feed on putrescent timber.

<sup>4</sup> Oliv. *Ent.* i, 8, 1, 1, t. ii, iii, f. 8.

## DESCRIPTION.

Body dark piceous, rather glossy, thickly punctured. Nose very retuse, or rather with a large sinus; mandibles shorter than the head, acute, armed on their inner side with a stout tooth with the segment of a circle taken out of it; antennæ pale chestnut: prothorax with the lateral margin obtusangular, subrenate, and reflexed; disk longitudinally impunctured, and obsoletely channelled: scutellum channelled, impunctured: elytra furrowed: cubit serrulate and denticulate, two sharp teeth longer than the rest at the apex; tarsi chestnut.

This is the smallest species of the stag-beetle tribe. As Schönherr has not placed it under *Platycerus*, but under *Lucanus*, and as the insect here described is a true *Platycerus*, it should seem that he either did not know *L. piceus*, or that I am mistaken in my reference. My specimen agrees exactly with the short description in the *Systema Eleutheratorum*, but I have no opportunity of consulting Weber.

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Family PASSALIDÆ. *Passalidans*.

## LXXVI. Genus PASSALUS.

(193) 1. PASSALUS INTERRUPTUS. *Interrupted Passalus*.

*Passalus interruptus*. Fab. *Ent. Syst.* ii, 240, 1.

*Lucanus interruptus*. Linn. *Syst. Nat.* ii, 560, 4. Oliv. *Ent.* i, 1, 25, t. iii, f. 5?

*Passalus cornutus*. Fab. *Syst. Eleuth.* ii, 256, 3?

Length of the body  $1\frac{1}{4}$ — $1\frac{5}{12}$  inch.

Many taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black or piceous, underneath sometimes rufo-piceous, impunctured, glossy. Head with a crooked horn between the eyes pointing towards the mouth, and a triangular elevation adjoining each eye on the inner side; labrum with a deep sinus; mandibles with three teeth at the extremity, and one in the middle of the upper side; knob of the antennæ consisting of three hairy joints, the outer one thicker than the others and curved: prothorax channelled, impressed on each side near the base; under a powerful lens several scattered very minute punctures may be discovered on its surface; the ora, or undersides of the prothorax,<sup>5</sup> are likewise punctured, and soft with tawny hairs: elytra furrowed; furrows punctured: cubit many-toothed; intermediate tibiæ densely bearded, on the outside, with tawny hairs.

The bent or nodding horn on the head of the species here described has generally been taken for a sexual character; but I am inclined to regard this as a mistaken notion. Specimens thus circum-

<sup>5</sup> See *Introd. to Ent.* iii, 368, i, 1, A.

stanced, as far as I have been able to ascertain, have hitherto been found only in North America; while those with a tuberculated head are found in various parts of South America, in the East and West Indies: and I have one in my cabinet from New Holland. Eleven specimens of the former were collected in the Expedition, varying in size, and not a single one of the latter.

As Linné describes his *Lucanus interruptus*, "*Vertice spina recumbente*," a character peculiar to the species here described, I have restored to it its proper name, which Fabricius in his last work, had assigned to the South American species with a tuberculated vertex: calling the North American one or true *Passalus interruptus* by the trivial name of *P. cornutus*. These two species, which have been regarded as sexes, differ not only in the processes that arm the head, but also in the labrum, the sinus being deeper in one than in the other: the cubit in the Linnean *P. interruptus* has more teeth than in the Fabrician, and the intermediate tibia is much more thickly bearded.

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At the first blush, the most direct course next to pursue would be from the *Rec-tocera* by one route towards the Capricorn beetles, and perhaps by another in the direction of some of the *Heteromera*: but a different and numerous tribe of beetles demand our attention before we leave the Lamellicorns. Latreille has placed his *Sternoxi*, forming the tribe alluded to, and including the great Linnean genera *Buprestis* and *Elater*, at the head of his family of *Serricornes*, which with him succeeds that of the *Brachelytra* or *Staphylinus* L. and is followed by his *Clavicornes*, including most of the beetles that prey upon carrion:<sup>6</sup> but this, as has been observed above,<sup>7</sup> separates tribes that ought not to be disunited; and I cannot help thinking, with Mr. W. S. Mac Leay, that their place ought to be much nearer the Lamellicorns. This learned Entomologist includes both in the same great section, under the title of *Chilognathiformes* or rather *Chilognathimorpha*,<sup>8</sup> but what precise place he assigns them, he has nowhere clearly stated. Many intermediate forms, however, as yet undiscovered, are wanted to connect the *Sternoxa* evidently with the Lamellicorns. As many of the *Elateridæ*, and I believe all the *Buprestidæ* are timber-devourers, I shall venture at present to regard them as entitled to a station somewhere between the lignivorous Lamellicorns and the Capricorns, with which last in their tarsi, the *Buprestidæ* particularly, exhibit considerable affinity.

Regarding the groups from which they diverge, and those to which they direct their course, as not yet indicated I shall now describe the species of *Sternoxa* taken in the Expedition.

<sup>6</sup> *Crust. Arachn. et Ins.* i, 442.

<sup>7</sup> See above, p. 83.

<sup>8</sup> *Hor. Entomolog.* 423; comp. *Annulos. Javan.* i, 5.

## VII. STERNOXA. Lat.

Family ELATERIDÆ. *Elateridans*.

Latreille appears to consider the Fire-flies (*Elater noctilucus* and affinities) as the type of the genus *Elater*;<sup>9</sup> Linné and Fabricius those with flabellated antennæ, as *E. gigas* and *flabellicornis*: but as the latter, though large insects, have a very short pectoral mucro, it is probable that their power of leaping<sup>1</sup> is less than that of the others; therefore the name *Elater* does not equally well apply to them, and it will be better to distinguish them by M. Latreille's name *Hemirhipus*, considering *E. noctilucus*, &c. as the true *Elaters*.

There are several types of antennæ in this family, all of which appear to run into each other—viz. flabellate, pectinate, serrate, submoniliform, filiform, and subsectaceous; as there are likewise of tarsi, which perhaps afford a more certain character, combined with others, for the distinction of genera and subgenera. Thus the majority perhaps of the *Elateridans* have neither suckers, nor cushions of hairs, e. g. *E. fascicularis*, *pectinicornis*, *Sputator*, *fasciatus*, *mesomelus*, &c.: others again have a single sucker on the fourth joint, this is the case with three American undescribed species in my cabinet: a third description, have a cushion edged with hairs on the second and third joints, *E. obscurus*, &c. Linn? Payk. *E. ruficaudis* Gyll.: another species, brought, I believe, from the West Indies by Admiral Plampin, has three transverse reniform suckers on the second, third, and fourth joints: in *E. niger* again the apex of the first, second, and third joints is furnished with a brush; in *E. ligneus*, *suturalis*, and affinities, there are three large suckers on these joints: in *E. flabellicornis* there is a naked cushion or sucker on the four first joints, that on the fourth being the largest: and lastly, in *E. noctilucus*, *fuscipes*, *fulgens*, &c. the same joints are furnished with a brush.

<sup>9</sup> *Crust. Arachn. et Ins* i, 454.

<sup>1</sup> *Introd. to Ent.* ii, 313—.



## LXXVII. Genus CAMPYLUS. Fisch.

(194) I. \* CAMPYLUS DENTICORNIS. *Denticorn Campylus*.

*C. (denticornis) niger, villosus, naso, prothoracis margine omni, elytris que latere externo, flavis; antennis articulis intermediis apice intus in dentem prominentibus.*

Denticorn Campylus, black, hairy; nose, margins of the prothorax, and external margin of the elytra, yellow; intermediate joints of the antennæ terminating in a tooth on their inner-side.

Length of the body 6 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

This is the American representative of *C. mesomelas*, from which it is sufficiently distinguished by its toothed antennæ and longer prothorax. Body linear, black, hairy with pale decumbent hairs. Head punctured; antennæ longer than the prothorax, filiform, with all the joints, except the scape, pedicel, and terminal one, terminating at their internal extremity in a prominent tooth, less conspicuous in the two lower ones; upper-lip, and nose which is reflexed and overhangs the mouth, yellow: prothorax channelled, punctured, quadrangular, with the anterior angles rounded, and the posterior diverging and terminating in a sharp tooth or prominence; sides rather wavy; limb yellow: scutellum subcordate: elytra minutely and thickly punctured, slightly furrowed, furrows thickly punctured; marked with a narrow yellow stripe which does not reach the apex; there is also a short yellow streak on the shoulders: base of the tibiæ, claw-joint of the tarsi, and claws, yellow.

## LXXVIII. \* Genus PEDETES. Kirb.

*Labrum* transverse.

*Mandibles* bidentate at the apex.

*Palpi maxillary*, with the last joint securiform.

*Antennæ* filiform, not retractile within the prothorax.

*Tarsi* with the second and third joints furnished with a sucker.

Body narrow, linear, elongate. *Head* inserted to the eyes; *eyes* large and hemispherical; *nose* anteriorly rounded or subtruncated, and reflexed, overhanging the mouth and base of the antennæ; *rhinarium* transverse, inflexed, concave: *prothorax* elongate, subquadrangular; anterior angles prominent, rounded; posterior scarcely diverging, prominent, dentiform: *scutellum* somewhat obcordate: *elytra* rounded at the apex; *side-covers* at first coultter-shaped, then linear: *prosternal mucro* long and rather slender.

This genus, the type of which is *E. obscurus* L. and Payk. *E. ruficandis* Gyll.<sup>2</sup> approaches very near to *Campylus*, from which it is principally distinguished by a more convex and longer prothorax, the posterior angles of which are scarcely divergent; but more particularly by the suckers at the apex of the second and third joints of the tarsi: the last of which are lobed.

<sup>2</sup> That the Linnean *E. obscurus* is a long narrow insect, and therefore not the *E. obscurus* of Gyllenhal, is evident from his comparing it with *E. linearis*.

(195) 1. \* PEDETES BRIGHTWELLI. *Brightwell's Pedetes.*

*P. (Brightwelli) testaceus, capite prothoraceque obscurioribus; elytris striatis; striis excavato-punctatis; interstitiis punctulatis; antennis subattenuatis.*

Brightwell's *Pedetes*, testaceous; head and prothorax dusky; elytra slightly furrowed, furrows deeply punctured; interstices minutely punctured; antennæ rather slender.

Length of the body 6 lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body elongate, more slender than that of the type, testaceous; hairy, with decumbent pale hairs; thickly punctured. Head dusky-red; antennæ longer than the prothorax, slenderer than usual in the tribe, scarcely serrated, with the four last joints rather slenderer than the rest; eyes large and hemispherical; nose a good deal reflexed: prothorax convex, channelled, dusky red, darker in the disk; elytra pale testaceous; furrowed, furrows deeply punctured; interstices minutely punctured with scattered punctures: legs paler than the rest of the body, and nearly yellow.

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 xii. \* Subgenus ASAPHES. Kirb.

*Body* wider.

*Nose* not overhanging the mouth.

*Rhinarium* attenuated in the middle.

*Prothorax* short, posterior angles carinated.

I am doubtful whether this should not be considered as forming a distinct genus. The general form is very different. But as the tarsi have suckers on the second and third joints, till more species are discovered, I have given it as only a subgenus of *Pedetes*.

(196) 2. PEDETES (*Asaphes*) RUFICORNIS. *Red-horned P. Asaphes.*

*P. (Asaphes) niger, punctulatus, pubescens; antennis obscure rufis; elytris piceis, substriatis.*

Red-horned *P. Asaphes*, black, minutely punctured, downy; antennæ dusky-rufous; elytra piceous, very slightly furrowed.

Length of the body  $7\frac{1}{4}$  lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body black, rather glossy, minutely punctured, downy with pale down. Antennæ, mouth, and palpi rufous or dusky-rufous; labrum and mandibles piceous; nose rounded, not reflexed, not overshadowing the mouth; antennæ serrated on the inner side in the middle, last joint acuminate: prothorax short, widest behind, very obsoletely channelled, sides submargined; posterior angles dentiform, strongly carinated: elytra piceous, or rufo-piceous, very slightly furrowed with oblong punctures in the furrows, interstices minutely punctured: margin of the abdomen and of the penultimate segment, rufous.

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LXXIX. \* Genus PERIMECUS. Dillw?

Parts of the mouth nearly as in *Elater*.

*Antennæ* not retractile within a furrow of the prothorax; serrated on their inner side in the middle; scape incrassated: pedicel short, obconical; terminal joint lineari-lanceolate.

*Tarsi* filiform, without sucker or cushion.

*Claws* pectinated.

Body linear, attenuated towards the anus. *Nose* rounded, overhanging the mouth; *rhinarium* deep; *eyes* large, hemispherical: *prothorax* short, convex, narrowest before; anterior angles not prominent, posterior elongated, dentiform, above with a sharp ridge: *scutellum* subquadrangular: *elytra* linear, attenuated at the apex: prosternal process long, suddenly attenuated at the apex: *tarsi* filiform, hairy, without suckers, cushion, or brush; *claws* distinctly pectinated.

This genus, of which *Elater fulvipes* is the type, is distinguished from all the other Elateridans by having its claws finely pectinated, a character in which it agrees with *Lebia* and many others of the *Truncipennia* amongst the *Geadephaga*. This striking distinction has been overlooked by Gyllenhal and all the other Entomologists who have described this insect.

I had originally named this genus *Ctenonyx*, but Mr. Stephens having distinguished another by the name of *Ctenonychus*, probably related to *Elater unguis-serris* of Gyllenhal,<sup>3</sup> under the idea that the type of the genus is *E. fulvipes* Linn. I have adopted the name given by Mr. Dillwyn, to distinguish that insect, as forming a new genus: still some doubt rests upon the identity of their specimens with the American: as Mr. Stephens describes the eyes as *small*, whereas in my specimen they are large, but this may be a sexual character.

<sup>3</sup> Schön. *Syn.* iii, 136, 186.

(197) 1. PERIMECUS FULVIPES. *Tawny-foot Perimecus.*

- Perimecus fulvipes. Dillw. *Mem. Col.* 32. Steph. *Illustr. Mandib.* iii, 263, 1?  
 Elater fulvipes. Herbst. *Ins.* x, 46, 52, t. clxii, f. 2. Gyll. *Ins. Suec.* i, 407, 37.  
 ——— castanipes. Payk. *Fn. Suec.* iii, 23, 27. Marsh. *Ent. Brit.* i, 381, 15.  
 ——— fuscus major. De Geer, *Ins.* iv, 146, 3.  
 ——— major. Gmel. *L. Syst. Nat.* iv, 1915, 104.  
 ——— rugosus. Marsh. *Ent. Brit.* i, 381, 16?

Length of the body 7 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, punctured, glossy; gloss and colour obscured by numerous decumbent pale hairs. Antennæ pale chestnut, with the third joint double the length of the second: posterior angles of the prothorax carinated: elytra with nine rows of large and deep punctures, interstices minutely punctured: legs pale chestnut.

The only difference that I can discover between the American and European specimens, is in the length of the third joint of the antennæ, which in the latter is scarcely longer than the second; and this may probably be a sexual distinction.

(198) 2. PERIMECUS COMMUNIS. K. *Common Perimecus.*

- Elater communis. Gyll. in Schön. *Syn.* iii, *Append.* 138, 189.  
 ——— cinereus. Web. *Obs. Ent.* i, 77, 2? Illig. *Mag.* i, 248?

Length of the body  $6\frac{1}{2}$  lines.

Several specimens taken at Cumberland-house Lat. 54°.

## DESCRIPTION.

Very similar to the preceding species, but much smaller. Body chestnut-coloured, darker or lighter in different specimens, punctured, glossy, hairy: third joint of the antennæ twice the length of the second: prothorax thickly punctured, obsoletely channelled, chiefly behind: elytra, antennæ, and legs rather paler than the rest of the body, the former sculptured as in the last species.

(199) 3. \* PERIMECUS SIMILIS. *Similar Perimecus.*

*P. (similis) niger, pubescens; antennis pedibusque fulvis: prothorace parcius punctato, haud canaliculato: elytris puncto-striatis.*  
 Similar Perimecus, black, downy: antennæ and legs tawny: prothorax less thickly punctured and not channelled: elytra with larger punctures in rows.

Length of the body  $6\frac{1}{4}$  lines.

Taken in Lat. 54°.

## DESCRIPTION.

I should have given this as merely a variety of the last; but besides its blacker body, the punctures of the prothorax are not nearly so numerous, and there is no appearance of its being channelled: the breast is chestnut.

## LXXX. Genus CTENICERUS. Lat.

(200) 1. \* CTENICERUS KENDALLI. *Kendall's Ctenicerus.*

*C. (Kendalli) niger; fronte impressa; prothorace canaliculato: elytris testaceis apice litura intermedia nigra; pedibus piceis.*  
 Kendall's Ctenicerus, black, front impressed: prothorax channelled; elytra testaceous, at the apex with an intermediate black blotch; legs piceous.

PLATE II, FIG. 7.

Length of the body 7 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body black, thickly punctured; gloss obscured by inconspicuous hairs. Head with two impressions between the eyes; nose submarginate; antennæ shorter than the prothorax, serrated: prothorax longer than wide, channelled, posterior angles diverging, very acute, carinated: scutellum suboval, covered with white hairs: elytra rather wider than the prothorax, testaceous with a black discoidal blotch at the tip; slightly furrowed with punctures in the furrows; interstices punctured: legs piceous.

This species, which is a female, is related to *Ct. cupreus*, but is much wider in proportion to its length.

## LXXXI. Genus ELATER. Linn.

## xiii. \* Subgenus APHOTISTUS. Kirb.

This subgenus differs from the type, (*E. noctilucus*, &c.) principally in the absence of the phosphoric spot in the prothorax, &c. The antennæ are not so compressed and less distinctly serrated. *Elater æneus* Linn. may be regarded as the type of this subgenus of which Mr. Marsham's *E. impressus* is regarded as a variety; but I think it distinct, and the true *E. impressus* of Fabricius. There are types of several other subgenera that may be regarded as belonging to *Elater*, as *E. murinus*, *sanguineus*, &c.

(201) 1. \* ELATER (*Aphotistus*) ÆRIPENNIS. *Bronze-winged E. Aphotistus.*

*E. A. (æripennis) ater*; *elytris æneis nitidis*; *antennis pedibusque piceis*; *prothorace obscuro, obsolete canaliculato, confertissime punctato.*

Bronze-winged *E. Aphotistus*, very black; elytra bronzed shining; antennæ and legs piceous: prothorax not glossed, obsoletely channelled and very thickly punctured.

Length of the body 6 lines.

Several taken in Lat. 54°. Cumberland-house.

## DESCRIPTION.

Body very black, without hairs, underneath very minutely punctured. Head thickly and confluent punctured; nose with two slight impressions: antennæ shorter than the prothorax, third joint longer than the fourth: prothorax very thickly punctured, obsoletely channelled, longer than wide, rather narrowest before, sides curving, posterior angles acute, diverging, carinated: scutellum heart-shaped: elytra bronzed, or green-bronzed; furrowed, furrows punctured; interstices convex, minutely punctured; tips acute: a discoidal rufous spot or band, and sometimes two, marks the underside of the abdomen: legs piceous.

This species is the American representative of *E. impressus*, from which it differs principally in being smaller, narrower in proportion, with the head and prothorax not at all bronzed, and the latter more thickly punctured and without any gloss.

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Family BUPRESTIDÆ. *Buprestidans.*

This splendid family, as well as the preceding, has been very little studied. Mr. Curtis has proved from the examination of two species,<sup>4</sup> that their oral organs differ, and probably many of the groups are similarly circumstanced. Latreille has divided the family into two sections, those that have *not* and those that *have* a scutellum.<sup>5</sup> *Buprestis Gigas*, one belonging to the latter family, may be regarded as the original type of the genus.

<sup>4</sup> Curtis. *Brit. Ent. i, t. xxxi, ii, t. lxxvii.*

<sup>5</sup> *Crust. Arachn. et Ins. i, 446.*

## LXXXII. Genus BUPRESTIS. Linn.

## xiv. \* Subgenus ANOPLIS. Kirb.

*Labrum* submembranaceous, small, rounded at the apex.

*Palpi* with the last joint subcylindrical.

*Rhinarium* transverse, appearing like a part of the labrum.

*Nose* with a sinus taken out.

*Antennæ* serrated internally, but with the joints less prominent and longer.

*Elytra* subtruncated at the apex, without serratures or terminal conspicuous points.

*Tarsi* with a sucker on all but the claw-joint, first joint covered by it.

The type of this subgenus is *Buprestis rustica* L.

(202) 1. \* BUPRESTIS (*Anoplis*) RUSTICORUM. *B. Anoplis of the Rustics.*

*B. A. (rusticorum) nigro-ænea, nitida; fronte, genis, ventrisque lateribus, luteo-maculatis; elytris striatis, apice rotundatis.*

*B. Anoplis of the Rustics, black-bronzed, glossy: front, cheeks, and sides of the belly spotted with luteous; elytra slightly furrowed, rounded at the tip.*

Length of the body  $9\frac{1}{4}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black-bronzed, punctured, glossy. Head with a levigated elevation in the centre between the eyes, channelled behind; marked with two yellow spots underneath on the cheeks, a triangular one adjoining the eyes on their inner side, and two dots of the same colour between them: prothorax grossly punctured with levigated spaces, the discoidal one longitudinal; above the scutellum is an impression; sides converging at the base of the prothorax; anterior angles with a yellow stripe: elytra slightly furrowed with numerous very minute punctures in the furrows; rounded at the apex: interstices with scattered punctures; those of the second, third, fourth, fifth, eighth and ninth furrows elevated so as to form an obtuse ridge: the four last ventral segments of the abdomen have on each side a reddish-yellow spot, those on the last segment being the largest and most irregular; anus with two distinct lateral teeth.

This species is so similar to *B. rustica*, that at first I regarded it as merely a variety, that insect however is smaller; the head has a distinct longitudinal channel: the prothorax is less thickly punctured, and the sides, at the base, converge less but more suddenly: the elytra are truncated, or rather premorse, at the apex with a few minute denticles: the mandibles have a yellow spot, and there are none on the ventral segments of the abdomen, except the anal one: the anal teeth also are obsolete.

(203) 2. \* BUPRESTIS (*Anoplis*) PAGANORUM. *B. Anoplis* of the Villagers.

*B. A. (Paganorum) nigro-ænea, nitida, fronte ad oculos, genis, ventrisque lateribus luteo-maculatis: prothorace antice subconstricto; elytris striatis, apice subattenuatis truncatis.*

*B.* Anoplis of the villagers, black-bronzed, glossy; front, cheeks and sides of the belly spotted with luteous; elytra slightly furrowed, subattenuated and truncated at the tip.

Length of the body  $7\frac{3}{4}$  lines.

A single specimen taken at Cumberland-house, Lat.  $54^{\circ}$ .

## DESCRIPTION.

Very like the species last described. Body of the same colour, head, anterior angles of the prothorax, and underside of the abdomen similarly spotted, except that in the former there are no frontal dots. The prothorax however is differently shaped, being somewhat constricted anteriorly, with the sides towards the base rounded, it is also channelled; the sculpture of the elytra is similar, but they are more attenuated and truncated at the end, like *B. A. rustica*, and armed with three minute denticles.

(204) 3. \* BUPRESTIS (*Anoplis*) NUTALLI. *Nutall's B. Anoplis*.

*B. A. (Nutalli) nigro-ænea, nitida; flavo supra et infra maculata: elytris striatis: striarum interstitiis alternis convexis; apice truncatis.*

Nutall's *B. Anoplis*, black-bronzed, glossy; spotted above and below with yellow; elytra slightly furrowed, with the alternate interstices of the furrows convex; truncated at the tip.

Length of the body  $7\frac{1}{2}$ —8 lines.

Several specimens taken in Lat.  $65^{\circ}$ . and on the Rocky Mountains.

## DESCRIPTION.

This species appears to be related to *B. octoguttata*. Body black-bronzed, glossy, punctured; underneath with a few pale decumbent hairs. Head confluent punctured with several irregular connected levigated spaces; labial palpi, spot on the mandibles, labrum, lower margin of the eyes, and frontal spots, yellow: prothorax bisinuate both at the apex and base, grossly punctured with several levigated spaces; lateral margin, except the base, and part of the anterior, yellow; elytra slightly furrowed, furrows punctured: interstices alternately convex and plane; the sutural one is convex and forked at the base; the flat ones are most punctured, but the convex ones more grossly; in the disk of the elytra are three equidistant irregular yellow spots arranged longitudinally, and nearer the base, on the second ridge, a line of confluent yellow dots; the apex of the elytra is trun-



cated: on each of the ventral segments of the abdomen the sides are marked with a triangular orange-coloured spot, those on the anal segment being larger and irregular: the coxæ also and under-side of the thighs are partly of the same colour.

VARIETY B. Without the yellow line of confluent dots at the base of the elytra, and with the spots arranged longitudinally indistinct.

C. With all the ventral orange spots large and irregular.

D. Front with a large central spot. Base of the belly bluish.

E. Elytra with only yellow spots. Front as in D.

F. With only one distinct yellow spot.

The most certain distinction of this varying species is the alternately convex and plane interstice of the furrows of the elytra.

(205) 4. BUPRESTIS (*Anoplis*) LINEATA. (Fabricius.) *Streaked B. Anoplis*.

*Buprestis lineata*. Fab. *Syst. Ent.* 217, 10; *Syst. Eleuth.* ii, 192, 37. Oliv. *Ent.* ii, 32, 28, 33, t. viii, f. 80. Linn. *Syst. Nat.* Gmel. iv, 1928, 46. Herbst. *Ins.* ix, 284, 209.

Length of the body 9 lines.

Taken in Nova Scotia by Captain Hall.

DESCRIPTION.

Body above black-bronzed, underneath bronzed, punctured. Head below and mouth orange: mandibles black with a basilar orange spot; front obscurely banded and dotted with the same colour; vertex channelled: prothorax dilated posteriorly; anterior angles deep orange: elytra slightly furrowed: furrows scarcely punctured; interstices flat, grossly punctured; truncated at the apex and armed with three minute teeth, one nearly obsolete; on each elytrum are two obscure deep orange stripes, the outer one diverging towards the base so as to pass below the shoulders, the inner one subinterrupted, widest towards the base, and not reaching the apex: fore-breast anteriorly orange.

(206) 5. BUPRESTIS (*Anoplis*) FASCIATA. (Fabricius.) *Banded B. Anoplis*.

*Buprestis fasciata*. Fab. *Ent. Syst.* ii, 191, 23; *Syst. Eleuth.* ii, 191, 31. Oliv. *Ent.* ii, 32, 21, 22, t. ix, f. 92. Herbst. *Ins.* ix, 162, 90, t. cxlv, f. 12. Say. *Amer. Ent.* ii, t. xxvi, f. 2. Linn. *Syst. Nat.* Gmel. iv, 1927, 42.

Length of the body 7—8 lines.

Taken in Canada by Dr. Bigsby; B and C, in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body of a lovely brilliant green, punctured underneath with a few pale hairs. Head confluent punctured; antennæ bronzed; vertex channelled: prothorax transverse marked before the middle with two transverse impressions, and another just above the scutellum; grossly punctured: elytra furrowed; furrows thickly punctured; interstices convex with fewer punctures; apex truncated with the angles terminating in a short point; beyond the middle of the elytrum is a rather broad, especially next the suture, wavy orange band surrounded by a dusky blotch; beyond this and near the apex is another oblique abbreviated little band of the same colour.

VARIETY B. Smaller with the bands paler and narrower.

C. With only a single band narrowest next the suture: prothorax without the anterior impressions.

## xv. \* Subgenus STENURIS. Kirb.

*Labrum* minute, corneous, subemarginate.

*Palpi* with the last joint subsecuriform.

*Rhinarium* indistinct.

*Nose* with a sinus taken out.

*Antennæ* serrated internally with the joints shorter and more prominent: third joint not longer than the fourth.

*Elytra* attenuated at the apex.

*Tarsi* with a sucker on all but the claw joint, first joint not wholly covered by it.

*Buprestis lurida* may be regarded as the type of this subgenus, which may be known by the shortness of the joints of its distinctly serrated antennæ, and attenuated apex of its elytra. *B. antennuata*, though near it, belongs to a different subgenus, with nearly filiform antennæ, and with the first joint of the tarsi nearly covered by the sucker.

(207) 6. \* BUPRESTIS (*Stenuris*) DIVARICATA. (Say.) *Divaricated B. Stenuris*.

*Buprestis divaricata*. Say. *Journ. Acad. Phil.* III, i, 163, 9.

Length of the body 10 lines.

Taken in Canada by Dr. Bigsby; I received both sexes also from Massachusetts by the kindness of Dr. Harris.

## DESCRIPTION.

Body below copper-bronzed, above dusky-bronzed; glossy; confluent punctured and wrinkled. Head with numerous branching, levigated, narrow spaces; eyes yellow surrounded with a black orbit; mandibles black at the tip; front longitudinally impressed in the centre: prothorax with numerous levigated spaces, obsoletely channelled; sides anteriorly rounded with a slight sinus near the base; basilar angles diverging: elytra very obsoletely furrowed, reticulated with numerous elevated lines, many scattered levigated spaces; bicarinated at the apex, the inner ridge being very short; suture terminating in a point; at their truncated extremity the elytra are divaricated and suddenly attenuated: the first segment of the abdomen, and the breast bones are hollowed out into a longitudinal channel: prosternum linear.

N. B. The specimens sent by Dr. Harris are as brilliant above as below.

(208) 7. \* BUPRESTIS (*Stenuris*) TENEBROSA. *Tenebrous B. Stenuris*.

*B. St. (tenebrosa) conflenter punctata; supra nigra, obscura; subtus cuprea nitida: prothorace lacunoso, latius canaliculato; elytris spatiis elevatis pluribus concatenatis; apice subito attenuatis rotundatis.*

Tenebrous B. Stenuris, confluent punctured, above black, obscure; below cupreous, glossy; prothorax uneven, channelled with a wide channel: elytra with many concatenated elevated spaces; suddenly attenuated at the apex and rounded.

Length of the body  $7\frac{3}{4}$  lines.

Several taken in Lat. 65°. and in the Rocky Mountains.

## DESCRIPTION.

Very like the species just described but much smaller. Body confluent punctured, upper surface black, with only the elevated parts glossy, lower bronzed-copper and glossy. Mouth and antennæ bronzed; eyes black; front sculptured as in *St. divaricata*: prothorax uneven with shallow impressions and a broad dorsal channel; distinctly bisinuate at the base; surface with levigated elevations: scutellum very minute, impressed: elytra divaricated and suddenly attenuated at the apex, which is rounded and has a single ridge; surface rough with many concatenated and levigated irregular elevations, side of the tip bronzed: breast channelled underneath, but the first segment of the abdomen less conspicuously, prosternum nearly an isosceles triangle: hypopygium<sup>6</sup> with three short teeth.

<sup>6</sup> See *Introd. to Ent.* iii, 389, n. 2

(209) 8. \* BUPRESTIS (*Stenuris*) TENEBRICA. *Dark B. Stenuris*.

*B. St. (tenebrica) conflenter punctata, supra nigra obscura, subtus cuprea nitida; prothorace sublucunoso, latius canaliculato; elytris striatis, apice subito et valde attenuatis, subtruncatis.*

Dark B. *Stenuris*, confluently punctured; above black, obscure; below copper, glossy; prothorax with shallow impressions, widely channelled; elytra furrowed, suddenly and much attenuated at the apex, subtruncated.

Length of the body  $7\frac{3}{4}$ —9 lines.

Several taken in Lat. 54°. and at Cumberland-house.

## DESCRIPTION.

This species differs principally from *St. tenebrosa*, which in other respects it greatly resembles, in having the prothorax without any levigated elevations, and with the impressions, except the channel which is better defined, more obsolete. The elytra are distinctly furrowed, especially next the suture, with punctured furrows, and there is only a series of levigated elevations near the lateral margin; the attenuated apex of the elytra is longer, rather truncated, and underneath of a dark blue: the prosternum is linear, and the base of the abdomen scarcely channelled: the teeth of the hypopygium are longer and of a brilliant ruddy-copper.

VARIETY B. Smaller, upper surface black-bronzed.

## xvi. \* Subgenus ODONTOMUS. Kirb.

*Labrum* minute, corneous, submarginate.

*Palpi* with the last joint cylindrical.

*Rhinarium* indistinct.

*Nose* with an angular sinus.

*Antennæ* as in *Stenuris*, but the third joint is twice the length of the fourth.

*Elytra* at the base circumscribed by the segment of a circle, serrulated at the apex.

*Humeri* incrassated and armed with a tooth.

*Tarsi* as in *Stenuris*.

*Prosternum* flat, constricted in the middle.

This subgenus, or perhaps genus, of which *Buprestis chrysostigma* Linn. may be regarded as the type, and to which also *B. femorata* Fabr. and many others belong, is strikingly distinguished by its incrassated anterior thighs, or humeri,<sup>7</sup> armed with a stout tooth; the back of the abdomen, in all the known species, is of a beautiful blue or green.

<sup>7</sup> *Introd. to Ent.* iii, 368. c.

(210) 9. \* BUPRESTIS (*Odontomus*) TRINERVIA. *Triple-veined B. Odontomus.*

*B. O. (trinervia) punctata, supra nigro-ænea, nitida, subtus pilosa; naso sinu obtusangulo, fronte plana; prothorace lacunoso, canaliculato, utrinque subemarginato, elytris trinerviis, spatiis pluribus punctatis subauratis: tibiis quatuor anticis arcuatis.*

Triple-veined *B. Odontomus*, punctured; above black-bronzed, glossy; hairy underneath; sinus of the nose obtusangular, front flat: prothorax with broad shallow impressions, channelled, sides subemarginate; elytra with three elevated lines, and many spaces punctured, and obscurely gilded; four anterior tibiæ arcuate.

## PLATE II, FIG. 9.

Length of the body  $5\frac{1}{2}$ — $5\frac{3}{4}$  lines.

Several specimens taken in Lat. 54°. and 65°. and in the Rocky Mountains.

## DESCRIPTION.

Body punctured, above black-bronzed, below copper-coloured and glossy. Head obscurely copper, confluent punctured and wrinkled, with a pair of levigated irregular elevations between the eyes; nose bilobed with divaricated lobes forming an obtusangular sinus; antennæ copper with a testaceous pedicel: prothorax transverse, confluent punctured with several levigated spaces; lightly and widely impressed, impressions faintly gilded; disk channelled; sides very slightly emarginate; base with a double sinus: scutellum triangular, acuminated: elytra with the depressed parts confluent punctured and very faintly gilded; with three subinterrupted longitudinal ridges connected by transverse levigated elevations; the two external ridges become confluent and proceed as a single ridge to the apex; lateral margin towards the apex minutely serrulate: back of the abdomen of a fine silky green: underside of the body thinly planted with hoary hairs; prosternum constricted in the middle and terminating towards the anus in a dilated trilobed point: shoulders much incrassated, armed below with a stout tooth; cubits clubbed at the apex; four anterior tibiæ bent or bowed: hypopygium bidentate.

This species is the American representative of *B. chrysostigma*, to which it approaches very near, but it is considerably smaller; the elytra have only three ridges, and want the two golden impressions that distinguish that insect, and the back of the abdomen is of a different colour. It is also very like *B. femorata*, but the sinus of the nose is obtusangular, and not at all acuminated; the frontal tubercles are less elevated, the prothorax is rougher, the ridges and elevations of the elytra are bolder, and the hypopygium is distinctly bidentate.

(211) 10. \* BUPRESTIS (*Odontomus*) PROXIMA. *Nearest B. Odontomus.*

*B. O. (proxima) punctata; supra nigro-ænea, subtus cuprea; prothorace elytrisque calatis spatiis depressis pluribus punctatis subauratis: tibiis omnibus arcuatis.*

Nearest *B. Odontomus*, punctured, above black-bronzed; prothorax and elytra embossed, with several depressed punctured faintly gilded spaces: all the tibiæ arcuate.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken in the Expedition.

## DESCRIPTION.

Body minutely and thickly punctured; above black-bronzed obscure; underneath cupreous with the gloss obscured; except near the anus, clothed with numerous rather long decumbent hoary hairs. Head somewhat cupreous, hoary from decumbent hairs; nose green, bilobed with divaricated lobes, including a somewhat obtusangular sinus; antennæ green; vertex channelled: prothorax embossed in the disk, impressed and wrinkled at the sides; depressed parts punctured and reflecting a faint lustre of copper: scutellum an isosceles triangle, depressed and green at the base, elevated part black: elytra embossed, with a ridge extending from the apex where it is broader, by the side of the suture towards the base where it is abbreviated; the depressed spaces have a faint lustre of copper and bronze, and are thickly punctured; apex rounded and obsolete serrulated: shoulders incrassated with a short robust tooth: all the tibiæ are bent or bowed; cubit not dilated at the extremity: hypopygium with a deep sinus.

This nearly resembles *B. O. trinervia*, but is sufficiently distinguished by having only a single ridge on the elytra, and the posterior tibiæ as well as the other pairs, bowed: the prothorax also is not channelled and its sides are rounded.

## xvii. \* Subgenus TRACHYPTERIS. Kirb.

*Labrum* transverse, nearly oval.

*Palpi* with the last joint cylindrical.

*Rhinarium* indistinct.

*Nose* with a rounded sinus.

*Antennæ* filiform, shorter than the thorax, subserrated, with the joints from the third to the end gradually decreasing in length.

*Body* above rough from numerous reticulations and granules.

*Elytra* diverging at the apex, and rounded.

*Tarsi* with minute suckers at the apex of the four first joints; first joint of the posterior pair elongated.

*Prosternum* linear.

This subgenus differs from the preceding not only in the sinus of the nose forming a segment of a circle, and the length of the first joint of the posterior tarsi, but also in having nearly filiform antennæ very slightly serrated on their inner side, and with their joints, beginning with the third, gradually decreasing in length. The type is *Buprestis decastigma* Fab. It may be subdivided into two sections, one with the apex of the elytra serrulated, to which the type belongs, and the other with it entire.

\* \* Apex of the elytra entire.

(212) 11. \* BUPRESTIS (*Trachypteris*) DRUMMONDI. *Drummond's B. Trachypteris*.

*B. T. (Drummondi) supra nigro-ænea, subtus ænea, nitida; prothorace varie acucto disco fere concentrice; elytris punctulatis integerrimis, guttis tribus luteis triangulo ordinatis.*

Drummond's *B. Trachypteris*, above black-bronzed, underneath bronzed, glossy: prothorax variously acucted, in the disk nearly concentrically; elytra very numerous and minutely punctured, very entire; with three yellow dots arranged in a triangle.

PLATE II, FIG. 8. Var. B.

Length of the body  $4\frac{3}{4}$  lines.

Several specimens taken in Lat. 54°. and 65°. and in the Rocky Mountains.

DESCRIPTION.

This elegant little species at first sight might be taken for a small variety of *B. T. decastigma*, but upon a nearer inspection it will be found to belong to a different division of the subgenus, and other very peculiar characters will be discovered which distinguish it from that and every other described species.

Body as it were reticulated with numerous punctures, bronzed, more obscurely on the upper surface, more glossy on the lower. Head very thickly punctured, obsoletely and slenderly channelled; apex of the nose levigated: prothorax transverse, with a double sinus in the basilar margin; obsoletely channelled, impressed on each side nearer the base, covered with innumerable scratches variously drawn, those of the disk being somewhat concentric; sides punctured: scutellum very minute, transverse: elytra very thickly punctured, and also exhibiting an appearance of granulations, slanting at the apex; the disk of the elytra, nearer the apex than the base, is marked with three yellow roundish dots arranged in an obtuse-angled triangle with the vertex towards the side: underside of the abdomen towards the anus less thickly punctured.

VARIETY B. Elytra with four yellow dots, a minute one, but varying in size, being placed outside the anterior one.

(213) 12. BUPRESTIS (*Trachypteris*) UMBELLATARUM. (Olivier.)  
*Umbel-frequenting B. Trachypteris*.

*Buprestis umbellatarum.* Fabr. *Mant.* i, 183, 74; *Syst. Eleuth.* ii, 210, 131? Oliv. *Ent.* ii, 32, 81, 112, t. iii, f. 23? Herbst. *Ins.* ix, 257, 174, t. cliii, f. 6. Illig. *Mag.* ii, 250, 18, iv, 94, 131. Linn. *Syst. Nat.* Gmel. iv, 1936, 90?

Length of the body  $2\frac{3}{4}$  lines.

Several specimens taken near Cumberland-house, Lat. 54°.

The description that Fabricius and Olivier have given of *B. umbellatarum* is so extremely brief, that I am by no means certain that the insect I here give under that name is really synonymous with it. As far as their description goes it corresponds, and also with Olivier's figure, but that is very indistinct. It has been found in Barbary, Portugal, and Provence. Fabricius says it affords no characters except its colour and smooth elytra; but it will be found upon a close inspection, I speak with regard to the American specimens, to exhibit several.

## DESCRIPTION.

Body black-bronzed, covered all over as it were with a fine net-work, produced by minute lines as if scratched by a pin or needle; above dull, below glossy. Antennæ much shorter than the prothorax: prothorax transverse with rounded sides, and longitudinal basilar impressions near each posterior angle: scutellum triangular: elytra with three very slight impressions arranged longitudinally; an obsolete series of punctures runs parallel with the lateral margin; apex obtuse and very minutely serrated: prosternum acuminate.

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xviii. \* Subgenus OXYPTERIS. Kirb.

*Labrum* minute, subemarginate.

*Palpi* last joint subcylindrical.

*Rhinarium* indistinct.

*Nose* with a sinus taken out forming the segment of a circle.

*Antennæ* as long as the prothorax, subsetaceous, subserrated internally.

*Body* rough from numerous granules.

*Elytra* diverging, very acute at the apex.

*Tarsi* as in *Trachypteris*.

The type of this subgenus is *Buprestis appendiculata*, it is principally distinguished from the preceding by its longer antennæ, more slender towards the extremity, and by its very sharp elytra.

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(214) 13. BUPRESTIS (*Oxypteris*) APPENDICULATA. (Fabricius.)

*Appendicled B. Oxypteris.*

*Buprestis appendiculata.* Fab. *Ent. Syst. Em.* ii, 210, 102. Herbst. *Ins.* 234, 154, t. cxlvii, f. 2. Gyll. *Ins. Suec.* i, 431, 11. Panz. *Fn. Germ.* lxxviii, 22.

——— Morio. Payk. *Fn. Suec.* ii, 230, 17.

——— *acuminata.* De Geer *Ins.* iv, 133, 7. Thunb. *Mus. Ups.* iv, 52, 2.

——— *acuta.* Linn. *Syst. Nat.* Gmel. iv, 1939, 105.

——— *longipes.* Say *Journ. Phil.* III, i, 164, 10.

Length of the body  $4\frac{1}{4}$ — $5\frac{1}{4}$  lines.

Several specimens in the Rocky Mountains, and near Cumberland-house.



## DESCRIPTION.

Body black, not glossy. Head minutely and thickly punctured, channelled, on each side of the channel between the eyes is an impression; antennæ nearly as long as the prothorax: prothorax scarcely wider than long, channelled, with a large but shallow impression on each side; sides thickly punctured so as to resemble net-work; rounded with the basilar angles depressed and a little diverging: scutellum nearly heart-shaped, acute: elytra rough with very minute and numerous granules, and several very slight shallow impressions, between which runs an obsolete obtuse ridge from the shoulder towards the apex, serrulated at the apex, and terminating in a very sharp point: breast minutely and thickly punctured; prosternum a little constricted in the middle, point triangular.

## LXXXIII. Genus AGRILUS. Meg.

(215) I. \* AGRILUS BIVITTATUS. *Two-striped Agrilus.*

*A. (bivittatus) granulatus, supra niger, subtus æneus; prothorace elytrisque vitta communi postice abbreviata, subaurata.*  
Two-striped Agrilus, granulated, above black; underneath bronzed; prothorax and elytra, with a pale golden stripe posteriorly abbreviated common to both.

Length of the body 4 lines.

Taken in Canada by Dr. Bigsby; I also purchased a specimen, probably taken in Georgia, at Mr. Francillon's sale.

## DESCRIPTION.

Body subcylindrical, elongated and slender; covered, especially above, with innumerable minute granules; upper surface black, lower bronzed-copper, glossy, hairy, especially anteriorly, with very minute decumbent white hairs. Nose narrow, truncated anteriorly; antennæ bronzed: prothorax nearly square, rather narrowest at the base; sides slightly curving; a double basilar sinus; a rather broad stripe formed of minute decumbent pale golden hairs covers each side of the prothorax, and then forming a bend, runs along the disk of the elytra, tending towards the suture, becoming gradually evanescent as it approaches the end of the elytra, which it does not reach: scutellum divided into two portions by a transverse ridge, the basilar one transverse, and the apical triangular and acuminate: elytra linear, constricted below the base, subacute and serrulated at the apex; at the base is a rather deep circular impression: exposed sides of the dorsal segments of the abdomen thickly covered with white decumbent hairs: hypopygium entire.

## LXXXIV. Genus TRACHYS. Fab.

(216) 1. \* TRACHYS AURULENTA. *Aurulent Trachys.*

*T. (aurulenta) nigro-cæruleus, nitidus; capite bilobo; elytris subtrinerviis, maculis cupreo-auratis, fasciisque argenteis.*  
Aurulent Trachys, black-blue, glossy; head bilobed; elytra obsolete three-ridged, spotted with golden-copper, and banded with silver, hairs.

Length of the body 3 lines.

Taken in Canada by Dr. Bigsby. There were also specimens in the late Mr. Francillon's cabinet, probably taken in Georgia by Mr. Abbot.

This may possibly be *F. tessellata* of Fabricius, but his description of that species is so short, omitting many of the characters of the insect before us, that it appears best to consider it as distinct.

## DESCRIPTION.

Body obovate, black-blue, glossy. Sinus of the head deeper than in the other species; face nearly covered with glittering copper-coloured decumbent hairs; antennæ shorter than the prothorax: prothorax transverse, repand on each side at the base with a central lobe, concave at the apex; anteriorly in the middle very convex; sides and base depressed; surface impunctured and tessellated with ruddy-copper hairs like those of the head: scutellum at the base transverse, with the vertex terminating in a long and sharp acumen: elytra with three ridges, the two inner ones less distinct, parallel, obtuse and abbreviated at each extremity, the external one distinct, acute running from the shoulder in an undulated line nearly to the apex of the elytrum; several rows of larger punctures are discernible, and several spaces thickly punctured with minute ones; the elytra are also spotted with several hairy ruddy-copper spots, and ornamented with four or five undulated hairy indistinct silver bands: underneath the tint of blue is very faint and the disk of the breast is bronzed: the mesosternum is hollowed out into a deep channel.

(217) 2. \* TRACHYS ACUDUCTA. *Acuducted Trachys.*

*T. (acuducta) oblonga, cuprea, nitida, fronte retuso; setulis squamuliformibus incana; prothorace transverse acuducto.*  
Acuducted Trachys, oblong, copper-coloured; front retuse; hoary with scale-like little bristles; prothorax transversely acuducted.

Length of the body 4 lines.

Taken by Capt. Hall in Nova Scotia.

## DESCRIPTION.

Body oblong, punctured, hairy with scattered minute decumbent bristles resembling little scales, of a bronzed and glossy copper colour. Front with a slight sinus: prothorax transverse, trilobed at the base; disk longitudinally convex and naked; sides hairy; surface in the disk covered with minute transverse undulated lines curving upwards, and sides reticulated with them: scutellum transverse acuminate: elytra uneven, constricted before the middle, clouded and obsoletely banded towards the apex with minute whitish bristles; tips rounded, serrulate: prosternum broad, a little constricted in the middle, rounded at the apex.

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Having gone through the Chilognathimorphous beetles of Mr. Mac Leay, the connection of which with the Lamellicorn and other tribes, probably owing to the non-discovery of existing intermediate forms, it is at present difficult to trace,—though the Elateridans appear clearly to go off at one extremity by the Cebrioidans to the soft-bodied Coleoptera, or *Malacoderma*, &c. of Latreille, and so perhaps by other tribes, as I shall endeavour to shew hereafter, to the confines of the *Orthoptera*—having accomplished this task we must again retrace our steps, and returning to the lignivorous Lamellicorns, pursue our course towards the Capricorns and other wood-devourers amongst the beetles. There are two main roads by which we may proceed, one from the Lucanidans, or genuine *Rectocerous* beetles, which lead to the Capricorns; and the other from the Passalidans, that do not properly answer that denomination, the last ten joints of their antennæ not forming an angle with the first, leading to an osculant tribe of timber-borers, which from that circumstance, I would call *Xylotrypa*, distinguished by their cylindrical form, including the modern genera *Scolytus*, *Hylestinus*, *Bostrichus*, &c. I shall begin with the first, and, after Gyllenhal and Mac Leay, shall consider *Trogosita* as nearly connected with the *Lucanidæ*, particularly *Platycerus*.

VIII. XYLOPHAGA.<sup>8</sup> Kirb.i. ISOCERA.<sup>9</sup> Kirb.Family CUCUJIDÆ. *Cucujidans*.

LXXXV. Genus PYTHO. Lat.

Latreille, on account of the Heteromorous structure of its tarsi, has placed this genus amongst his Helopians, with which it possesses few other characters in common. Fabricius, with better reason, has placed it next to *Cucujus*, to which genus he originally regarded it as belonging. With his *C. rufus* (*Catogenus* Westwood)<sup>1</sup> it agrees, not only in its depressed body, and impressed prothorax, but in its labrum, internally toothed mandibles, bilobed maxillæ, with the lower lobe much shorter than the upper, and in its mentum: the palpi are more like those of *Cucujus flavipes*, as figured by Olivier: the labium, in the specimen I dissected, is a minute, round, corneous piece between the labial palpi; the tongue is shrunk up, but is evidently membranaceous: the mandibles are incurved at the apex and armed with two sharp teeth, on its inner side are four minute ones, thus approaching the structure of these organs in the *Lucanidæ*.

(218)

1. \* PYTHO NIGER. *Black Pytho*.

*P. (niger) niger nitidus, punctulatus; antennis tarsisque rufis: prothorace canaliculato, utrinque longitudinaliter foveato, medio latiore, postice constricto: elytris striatis basi punctulatis.*

Black Pytho, black, glossy, minutely punctured: antennæ and tarsi rufous: prothorax channelled, longitudinally impressed on each side, widest in the middle, constricted behind; elytra furrowed, minutely punctured at the base.

PLATE VII, FIG. 2.

Length of the body  $5\frac{1}{4}$ — $5\frac{1}{2}$  lines.

Several taken in Lat. 54°. and in the Journey from New York at Cumberland-house.

<sup>8</sup> I would restrict this name to those which have eleven joints in their antennæ; thus excluding the *Xylotrypa*, which have only ten.

<sup>9</sup> By this term I would characterize these *Xylophaga*, the terminal joint or joints of whose antennæ do not form a club; those in which it does I denominate *Anisocera*.

<sup>1</sup> *Zool. Journ.* xviii, 221.

## DESCRIPTION.

Body linear, depressed, black, shining, punctured. Head with a longitudinal impression on each side between the eyes; nose smooth, flat, with the intermediate space less punctured; antennæ and palpi dusky-rufous: prothorax conspicuously channelled, with the usual deep longitudinal impression on each side, lateral contour very convex, constricted posteriorly: elytra furrowed with elevated smooth interstices; furrows punctured and abbreviated at each end; base of the elytra, where the furrows cease, punctured: body underneath minutely punctured; abdomen piceous; tarsi rufous.

VARIETY B. Tibiæ also rufous: thighs piceous.

C. Body entirely ferruginous. It agrees with A in sculpture and every other respect except colour.

Many individuals of the present species were taken in the Expedition, all of them agreeing in having no tint of blue in the elytra; in having the levigated part of the base punctured, and the sides of the prothorax more prominent, than in *P. depressus*, from which it seems clearly distinct.

(219) 2. \* PYTHO AMERICANUS. *American Pytho*.

*P. (Americanus) rufus*; capite prothoraceque nigris, hoc antice latiori, obsoleteius canaliculato, utrinque longitudinaliter foveato: elytris atro-cæruleis, striatis, basi vix punctulatis.

American Pytho, rufous: head and prothorax black; the latter widest anteriorly, less conspicuously channelled, longitudinally impressed on both sides: elytra deep blue, furrowed, scarcely punctured at the base.

Length of the body 5—7 lines.

Several taken in Lat. 54°. and in the Journey from New York to Cumberland-house.

## DESCRIPTION.

This species differs from the preceding chiefly in having the abdomen, medipectus, postpectus, legs and mouth rufous; in a slight punctured elevation on each side of the nose; the space between the eyes also is more distinctly punctured, and there are two deep impressions under the head between the eyes; the prothorax is widest anteriorly, and not constricted behind; and the elytra are deep blue, and scarcely punctured at the base.

It differs from *P. depressus*, in being wider in proportion to its length, and in having the abdomen, and two posterior sections of the breast, invariably rufous.

VARIETY B. Elytra rufous at the sides and tip.

C. Elytra entirely rufous.

D. Elytra entirely rufous; head and prothorax piceous.

E. Body entirely rufous.

## ii. ANISOCERA.

Family TROGOSITIDÆ. *Trogositidans*.

LXXXVI. \* Genus TROGOSITA. Oliv.

(220) 1. \* TROGOSITA AMERICANA. *American Trogosita*.

*T. (Americana) glabra, picea, fronte foveata, elytris substriatis; striis punctatis; antennis clava incrassata: prothorace subquadrato.*

American Trogosita, naked, piceous; front impressed; elytra slightly furrowed: furrows punctured: antennæ with a thick knob: prothorax rather square.

Length of the body 5 lines.

Two specimens taken in the Journey between New York and Cumberland-house.

## DESCRIPTION.

This species is the American representative of *T. caraboides* from which it principally differs in being larger, with the frontal impressions more distinct; the stalk of the antennæ much slenderer, and the knob thicker: the prothorax not so narrow and constricted at the base, and the elytra slightly furrowed.

The tribe to which *Trogosita* belongs, though evidently connected with that after which I have placed it, appears to bring us very little nearer to the Capricorns; their prothorax indeed and depressed body indicate some approach towards them, but their antennæ and general habit shew them to require many intermediate forms to fill up the interval between them. M. Latreille's third family of his Tetramera, which he denominates *Platysoma*, will however now carry us on towards the confines of the last mentioned tribes: for in this family, the antennæ lose their knob, and become nearly setaceous, and in several species the prothorax is armed with little teeth like the Prionidans: there is an insect belonging to the family I am speaking of, which De Geer has described and figured under the name of *Altelabus glaber*,<sup>2</sup> but which in a modern system would stand as a distinct genus,<sup>3</sup> approaching very near to *Prionus*, except that its prothorax has no teeth, and the antennæ are proportionally shorter; owing to its protended mandibles, it has the aspect of a miniature *Prionus exsertus*.<sup>4</sup>

But a near approach, in another instance, is made by the Prionidans to the Lucanidans, Amongst the insects collected by the late lamented Sir Stamford Raffles in Sumatra, is an anomalous species, or rather genus, apparently belonging to the first of these families, which exhibits also the antennæ and tibiæ of the last, and itself, as to its tarsi, is heteromerous; thus interchanging characters, and proving its right to affinity, with the Lucanidans.

From what has been above stated, it appears clear I think that the *Xylophaga* by means of *Trogosita*, as Messrs. Gyllenhal and Mac Leay have observed, touch upon the *Lucanidæ*, and it is equally evident, that M. Latreille is also correct in connecting, by means of his *Platysoma*, the *Xylophaga* with the Capricorns:<sup>5</sup> we may observe here that the genus *Spondylis*, though placed by Latreille amongst the Prionidans seems to furnish a link connecting the *Platysoma*, to which it surely belongs, with another family of Capricorns the Lamiadans; and particularly with a genus, or subgenus, belonging to it, the type of which is *Lamia vermicularis* of Donovan.<sup>6</sup>

<sup>2</sup> De Geer iv, 351, 2, t. xix, f. 14.

<sup>3</sup> I call it *Gnathophorus*.

<sup>4</sup> Oliv. *Ins.* 66, t. viii, f. 31.

<sup>5</sup> Fabricius has placed the *Prioni* next the *Lucani*.

<sup>6</sup> This genus stands in my cabinet under the name of *Sthenera*.

Having thus won our way to the Capricorn beetles, I shall now describe the species belonging to it taken in the Expedition.

iii. LONGICORNIA. Latr.

Family LAMIADÆ. *Lamiadans.*

LXXXVII. Genus MONOCHAMUS. De J.<sup>7</sup>

*Labrum* rounded at the apex and subemarginate.

*Labium* membranaceous, bipartite, with hairy lobes.

*Mandibles* subcompressed, trigonal, toothless, acute and incurved at the apex.

*Maxillæ* bilobed, lobes hairy at the apex and rounded, the upper lobe the longest.

*Palpi maxillary* four-jointed: first joint short subcylindrical; second longer than the third, gradually thicker towards the obliquely truncated apex; third shaped like the second but shorter and somewhat bent; fourth fusiform, subtruncated at the apex.

— *labial* three-jointed, first joint minute; second incrassated at the apex; third fusiform, subtruncated.

*Antennæ* subsetaceous, elongated, eleven-jointed; scape subcylindrical, rather thicker towards the apex, constricted at the base; pedicel very short, subturbinate; third joint longer than the rest, which are nearly equal in length and filiform.

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\* Elytra rough from wrinkles and punctures.

(221) I. \* MONOCHAMUS RESUTOR. *Resutor Monochamus.*

*M. (resutor) niger; prothorace spinoso; elytris confluentem punctatis et rugosis, femineis cinereo maculatis; scutello pallido; antennis pedibusque rufescentibus, illis in masculis longioribus, in feminis mediocribus.*

Resutor Monochamus, black; prothorax spinose; elytra confluently punctured and wrinkled, those of the female spotted with cinereous; scutellum pale; antennæ and legs reddish; the former, in the males, longer than the body; in the females not exceeding it in length.

Length of the body  $10\frac{3}{4}$  lines.

Frequently taken in Lat. 65°.

<sup>7</sup> As neither De Jean nor Latreille have given characters of this genus I subjoin them.

## DESCRIPTION.

This insect resembles *M. sutor* in so many particulars, that it is not without considerable hesitation I describe it as distinct. It exhibits however some characters that seem to indicate more than a casual variety, produced by difference of climate, &c. The antennæ of the male of *M. resutor* are considerably shorter than those of the same sex of *M. sutor*; the lubrum and rhinarium are shorter; the former is rufo-piceous; the first joint of the antennæ, the five or six of the last joints are rufescent, as are the legs more or less, and the tooth that arms the intermediate tibia is more prominent. The antennæ of the female are but little longer than the body, and not annulated with cinereous.

This species is intermediate between *M. sutor* and *M. sartor*.

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\* \* Elytra without wrinkles.

(222) 2. \* MONOCHAMUS CONFUSOR. *Confused Monochamus.*

*M. (confusor) nigro cinereoque nebulosus et variegatus: prothorace spinoso; elytris testaceis punctatis piloso cinereis, nigro maculosis: scutello pallido: antennis rufescentibus basi nigris.*

Confused Monochamus, clouded and variegated with black and cinereous: prothorax armed with spines: elytra testaceous, punctured, cinereous from hairs, spotted and dotted with black: scutellum pale; antennæ reddish, black at the base.

Length of the body 1 inch and  $1\frac{3}{4}$  line.

Taken in Nova Scotia by Dr. Mac Culloch, in Canada by Dr. Bigsby, in Massachusetts by Mr. Drake.

## DESCRIPTION.

Body linear, elongate, black, covered with white or cinereous decumbent hairs, but so as to let the black appear in confused spots and reticulations. Labrum rather long, fringed anteriorly with ferruginous hairs; maxillary palpi long; rhinarium broad, rufous; antennæ testaceous with the redness obscured by decumbent cinereous hairs, but the scape and pedicel are black; the antennæ of the female are something longer than the body; those of the male are twice its length: the spines of the prothorax are stout, covered thickly with white hairs, and dotted posteriorly with black; in the disk is a central oblong impression: scutellum thickly covered with white decumbent hairs, with a black longitudinal line: the ground colour of the elytra is testaceous which is more or less obscured and clouded by white decumbent hairs, besides there are several black dots and oblong spots produced by erect hairs; at the base of the elytra, especially on the projecting shoulders, are numerous round elevated smooth little spaces, and their whole surface is covered with scattered minute punctures.

N.B. In the male the black spots and dots of the elytra are fainter, and sometimes nearly obliterated.



(223) 3. \* MONOCHAMUS MARMORATOR. *Marbled Monochamus.**M. (marmorator) niger, fulvo nebulosus; prothorace spinoso; elytris nigro, cinereo, fulvoque marmoratis.*

Marbled Monochamus, black, clouded with tawny; prothorax spinose; elytra marbled with black, cinereous, and tawny.

Length of the body 11 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black, covered underneath, but so that the black appears in various places, with subcinereous, or somewhat tawny decumbent hairs. Head and prothorax covered in the same way but with redder hairs: spines of the prothorax very robust, rather long, sharpish: scutellum covered with a coat of cinereous hairs, divided by a black longitudinal line: elytra black, marbled variously with cinereous and reddish tawny hairs; the cinereous spots are dotted with black; the surface of the elytra when laid bare appears punctured, and at the base are several confluent smooth elevated spaces; suture and lateral margin testaceous; apex acute.

N. B. The antennæ in the specimen are broken off.

Family CERAMBYCIDÆ. *Cerambycidans.*

LXXXVIII. Genus ACANTHOCINUS. Meg.

xix. \* Subgenus GRAPHISURUS. Kirb.

*Anus* of the female with a long exerted ovipositor.

The type of this subgenus is *Cerambyx fasciatus* of De Geer.<sup>8</sup> It comes near to *Acanthocinus ædilis*, the female of which has an exerted ovipositor, but not so long, and the scape of the antennæ is of a different shape; so that they would, if considered as belonging to the same subgenus, form two divisions.

(224) 1. \* ACANTHOCINUS (*Graphisurus*) PUSILLUS. *Dwarf A. Graphisurus.**A. G. (pusillus) prothorace postice acute spinoso; cinereo-pilosus nigro punctatus; elytris fascia obliqua maculisque pluribus fuscis.*

Dwarf A. Graphisurus, prothorax towards the base armed with an acute spine; body with a coat of cinereous hairs dotted with black; elytra with an oblique brown band, and several spots of the same colour.

Length of the body  $4\frac{1}{2}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house.

<sup>8</sup> De Geer v, 114, t. xiv, f. 7.

## DESCRIPTION.

This species is one of the most minute of the Capricorn tribes. Body linear, black but covered with a coat of whitish decumbent hairs, which appears more or less sprinkled with black dots. Head longitudinally channelled; antennæ mutilated in the specimen, but those joints that remain are white at the base: prothorax short, armed on each side, towards the base with a short sharp spine, punctured with scattered punctures; elytra punctured especially towards the base, mottled and speckled with brown, with an oblique brown band a little beyond the middle, apex of the elytra rounded: podex and hypopygium, or last dorsal and ventral segments of the abdomen elongated, so as to defend the base of the ovipositor which is exerted, causing the insect to appear as if it had a tail; the hypopygium is emarginate: thighs much incrassated at the apex.

## Family CALLIDIADÆ.

LXXXIX. Genus CALLIDIUM. Fab.

(225) I. \* CALLIDIUM AGRESTE. *Country Callidium.*

*C. (agreste) fuscum, subobscurum, punctulatissimum; prothorace, trifoveato; elytris lineis tribus elevatis apice confluentibus: corpore subtus albido villosa; pectore longius.*

Country Callidium, brown, less obscure, very minutely and thickly punctured; prothorax with three impressions; elytra with three elevated lines confluent near the apex; body underneath coated with white hairs, those on the breast being longer than the rest.

Length of the body 11 lines.

Several specimens taken in the Expedition, and likewise in Nova Scotia by Dr. Mac Culloch and Capt. Hall.

## DESCRIPTION.

I at first took this for a variety of *C. rusticum*, but on a closer inspection I found it differed in the sculpture as well as colour; and having received a specimen of that insect from Dr. Harris, in which its characters were all preserved, I am induced to describe *C. agreste* as a distinct species.

It differs from *C. rusticum* in being smaller, of a darker brown, without a tint of red; and in having more gloss. The prothorax has three deep round impressions, while in the insect last named, the impressions are slight, and the two anterior ones oblong: the elevated lines of the elytra are more prominent and become visibly confluent towards the apex, where they form several reticulations: the underside of the body is much more thickly covered with hairs, which are hoary instead of yellowish, those on the breast being longer than those on the abdomen. In other respects these two insects resemble each other.

(226) 2. \* CALLIDIUM STRIATUM. *Striated Callidium.*

*Callidium striatum.* Fab. *Ent. Syst.* I, ii, 329, 48; *Syst. Eleuth.* ii, 343, 57. Oliv. *Ins.* 70, t. ii, f. 24. Herbst. *Arch.* t. xxvi, f. 13. Panz. *Fn. Germ.* lxx, 13. De Geer *Ins.* v, 90, 26. Payk. *Fn. Suec.* iii, 83, 4. Lai. *Tyr. Ins.* 74, 8. *Cerambyx striatus.* Linn. *Fn. Suec.* 668; *Syst. Nat.* ii, 635, 73.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body linear, black, thickly punctured, underneath with a few hairs, glossy; above without any hairs or gloss. Antennæ a little longer than the prothorax: prothorax suborbicular, covered thickly with minute granules, with an elevated tubercle in its disk: elytra most minutely and thickly granulated, with four longitudinal slight furrows occupying the half adjoining the suture, the alternate interstices being most elevated: tarsi rufo-piceous.

(227) 3. \* CALLIDIUM COLLARE. *Red-collared Callidium.*

*C. (collare) nigrum, supra obscurum, punctatissimum; prothorace læviusculo, nitido, rufo, lateribus subspinosis.*  
Red-collared *Callidium*, black, above obscure, very thickly punctured; prothorax smoother, glossy, rufous, with the sides subspinose.

Length of the body 5 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body linear, black, hairy with whitish scattered hairs. Head thickly punctured; antennæ shorter than the body, rather hairy, piceous, scape black: prothorax rufous, with a few scattered punctures, glossy, projecting on each side into an angle or short spine: elytra very thickly and confluent punctured: body underneath glossy, slightly punctured: anterior part of antepectus rufous: tarsi piceous, first joint of nearly equal length in all the legs.

This species seems to be nearly related to *C. sanguinicolle* of Germar,<sup>9</sup> but it differs in having the thorax less punctured than the rest of the upper surface of the body, and armed with rudiments of spines, and the first joint of the posterior tarsus is not more elongated than the rest.

<sup>9</sup> *Coléopt. Spec. Nov.* i, 515, 687.

xx. \* Subgenus MERIUM. Kirb.

*Thighs clubbed.*

This subgenus differs from the genuine *Callidia*, in having all the thighs incrassated at the apex. *Cerambyx variabilis* Linn. may be considered as its type.

(228) 4. CALLIDIUM (*Merium*) PROTEUS. *Proteus C. Merium*.

*C. M. (Proteus) nigrum, punctulatum, pilosum; prothorace utrinque punctis confluentibus scabro; elytris violascentibus lineis longitudinalibus callosis pallidis; femoribus rufis.*

*Proteus C. Merium*, black, minutely punctured, hairy: prothorax on each side rough with confluent punctures; elytra tinted with violet, with longitudinal, callous, pale lines: thighs rufous.

PLATE V, FIG. 5.

Length of the body 5—8½ lines.

Taken abundantly especially in Lat. 65°.

DESCRIPTION.

Body black, minutely punctured, hairy with longish hoary hairs, especially underneath. Nose with a deeply ploughed transverse furrow; front behind the antennæ violet, confluent punctured; palpi black, maxillary rather long, last joint an obtusangular triangle; antennæ longer than the prothorax: sides of the prothorax very rough with deep confluent punctures: elytra wrinkled, violet, with three longitudinal, subinterrupted, callous, pale lines, of which the intermediate one is the longest, and the external one the shortest: legs piceous, with the incrassated part of the thighs testaceous.

This species varies extremely both in size and colour. The following are the principal varieties.

VARIETY B. Head and prothorax violet; elytra lurid with only two callous lines. Length 6¼ lines.

C. Head, except at the base of the antennæ, black; sides of the prothorax violet, disk bronzed: elytra as in the last. Length 5 lines.

D. Head and prothorax black: elytra lurid; lines faintly marked. Length 5½—7 lines.

E. Head and prothorax bronzed: elytra lurid bronzed, with two distinct lines. Length 6—7 lines.

F. Head violet; prothorax bronzed: elytra as in the last. Length 6 lines.

G. Like the last, but the callous lines of the elytra are obsolete. Length 5½—6½ lines.

H. Head and prothorax black: elytra lurid with three lines. Length 7½ lines.

I. Head and prothorax black-bronzed: elytra bronzed-lurid with two lines.

(229) 5. CALLIDIUM (*Merium*) SIMILE. *Similar C. Merium.*

*C. M. (simile) nigrum, punctulatum, pilosum; prothorace utrinque pulvinatum, minutissime et confertissime confluentur punctulatum; elytris æneo-luridis, lineis duabus elevatis callosis pallidis confluentibus, antennis apice femoribusque rufis.*

Similar *C. Merium*, black, minutely punctured, hairy, prothorax pillowed out on each side, and most minutely and thickly punctured with confluent punctures: elytra bronzed, lurid, with two elevated callous coalescing pale lines; antennæ at the apex, and thighs, rufous.

Length of the body 7 lines.

A single specimen taken with the preceding species.

## DESCRIPTION.

This species in most respects is so like *C. M. Proteus*, that I had set it by as another variety; but upon further consideration I am induced to give it as distinct, since it differs not only in colour but in the form and sculpture of the prothorax and other parts.

The apex of the palpi is more dilated, so that it is strictly securiform; the front behind the antennæ is elevated and gibbous, with few scattered punctures: the sides of the prothorax are more puffed out, and much more minutely and thickly punctured, and there is a pair of impressions in the disk: the antennæ also at the base are rufous: in other respects it does not differ from *M. Proteus*.

(230) 6. CALLIDIUM (*Merium*) DIMIDIATUM. *Halved C. Merium.*

*C. M. (dimidiatum) obscure rufum, supra nigrum; elytris antice rufis; prothorace granulato, postice canaliculato.*

Halved *C. Merium*, obscurely rufous; black above; elytra rufous at the base; prothorax granulated, channelled posteriorly.

Length of the body 4 lines.

Two specimens taken in Lat. 54°.

## DESCRIPTION.

Body not glossy; impunctured; hairy underneath; and except the forebreast, which is black, of a dull rufous. Head channelled between the eyes, behind them convex; antennæ rufous, shorter than the body: prothorax somewhat coarctate at the base; minutely granulated; obsolete channelled, more conspicuously behind: elytra rufous anteriorly.

This species comes very near to *C. (Merium) Alni*, but it is larger and has no white bands.

xxi. \* Subgenus TETROPIUM. Kirb.

*Eyes* four, connected by an elevated line.<sup>1</sup>

*Antennæ* robust, short: scape much incrassated, subcylindrical, remaining joints subclavated.

*Prothorax* constricted anteriorly and posteriorly.

*Thighs* much incrassated, sometimes clubbed.

The type of this subgenus is *Callidium triste* Fabr. for those with clavated thighs, and *C. aulicum*, for those in which they are incrassated nearly their whole length. These insects will be found to have four distinct eyes, separated by the substance of the head elevated into a ridge, which at first sight appears a continuation of the eye, but which evidently has no lenses implanted in it—they are also distinguished by their robust and short antennæ.

(231) 7. CALLIDIUM (*Tetropium*) CINNAMOPTERUM. *Cinnamon-winged*  
*C. Tetropium.*

*C. T. (cinnamopterum) atrum, pilosum; antennis, pedibus, pectoris lateribus, elytrisque rufis; femoribus incrassatis; haud clavatis.*  
Cinnamon-winged *C. Tetropium*, very black, hairy; antennæ, legs, sides of the breast, and elytra rufous: thighs incrassated but not clubbed.

PLATE V, FIG. 8.

Length of the body  $3\frac{1}{4}$ —6 lines.

Several specimens taken in Lat. 65°.

DESCRIPTION.

At first sight this species seems the exact counterpart of *Callidium triste*, which it resembles in almost every respect; but upon examination it will be found that the thighs of these two insects are of a very different shape, those of *C. T. triste* being much attenuated at the base, while those of *C. T. cinnamopterum* are not at all. In the latter also the sides of the fore-breast are red, and the elytra are considerably darker, very near the colour of cinnamon.

The American specimens vary much in size, but all agree in the shape of the thighs.

<sup>1</sup> Plate V, Fig. 8, a.

XC. Genus CLYTUS. Fab.

\* *Prothorax* subglobose unarmed.

a. Yellow-banded.

(232) 1. \* CLYTUS UNDATUS. *Wavy Clytus*.

*C. (undatus) niger, holosericeus; prothorace basi et apice interrupte; elytris lineola transversa, fasciis duabus undatis, apiceque, pallide flavis; antennis, pedibusque rufis.*

Wavy Clytus, black velvety; base and apex of the prothorax interruptedly; transverse linelet, two wavy bands, and apex of the elytra, pale-yellow; antennæ and legs rufous.

PLATE VII, FIG. 5.

*Clytus undulatus*. Say. *Am. Ent.* iii, 53. Long. *Second Exp.* ii, 291, var.  $\beta$ , mihi.

Length of the body 8 lines.

Two specimens taken in Lat. 54°. 65°.

DESCRIPTION.

Body black, underneath hoary from decumbent hairs, above velvety. Head anteriorly hairy with whitish hairs, behind the antennæ very thickly punctured; palpi, labrum, tip of the nose and cheeks, eyes, antennæ, and subface rufous; prothorax rough with very minute and numerous granules, the base and apex have an interrupted band of yellow hairs, and a hoary spot on each side produced by hairs: scutellum dark brown: elytra with an oblique linelet adjoining the scutellum, another in the disk near the base, two wavy bands, the extremities of the anterior one pointing towards the base, and of the posterior one towards the apex; the apex and suture, all pale yellow, produced by decumbent hairs: underneath on each side of the breast are three spots of the same colour, as likewise is the tip of the ventral segments of the abdomen; the legs are rufous, sprinkled with hoary hairs.

This species is intermediate between *C. arietis* and *C. arcuatus*, but perfectly distinct from both.

b. White-banded.

(233) 2. \* CLYTUS LUNULATUS. *Lunulated Clytus*.

*C. (lunulatus) niger, capite lævi, occipite punctato: prothoracis margine antico; elytris lunula antica, fasciis duabus, intermedia juxta suturam reflexa, postica interrupta, abdomine segmentis ventralibus apice, albis: antennis pedibusque obscure rufis.*

Lunulated Clytus, black: head smooth, occiput punctured: anterior margin of the prothorax, anterior lunule, two bands, the intermediate one running back along the suture, the posterior one interrupted, and apex of the ventral segments of the abdomen, all white: antennæ and legs obscurely rufous.

Length of the body  $7\frac{1}{4}$  lines.

One specimen taken in Lat. 54°. Taken also in Canada by Dr. Bigsby, and in Nova Scotia by Capt. Hall.

## DESCRIPTION.

This species is extremely similar to the preceding, but its bands and spots are quite white without any tint of yellow: the prothorax has no posterior interrupted band, the anterior spot of the elytra is crescent or kidney-shaped, the thighs are dusky; and the eyes are black; but the most striking distinction is exhibited by the head, which is perfectly smooth and without punctures, but when the occiput is disengaged from the prothorax, as it is when the head is inclined forwards, the front will be found to be separated from it by a bilobed line, behind which the head is thickly and confluent punctured.

(234)

3. CLYTUS FUSCUS. *Brown Clytus.*

*C. (fuscus) nigro-fuscus, prothoracis basi et apice interrupte, elytris sutura, puncto baseos, fasciis duabus interruptis, abdominisque segmentis ventralibus apice, albis: antennis, oculis, pedibusque, rufis.*

Brown Clytus, black-brown, base and apex of the prothorax interruptedly, suture, dot near the base, and two interrupted bands of the elytra, and the apex of the ventral segments of the abdomen, all white: antennæ, eyes, and legs rufous.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

This species resembles the last in having the occiput similarly punctured, and the markings of the elytra are similar, except that instead of the white streak at the base there is only a dot: but it is of a brown colour, with the head and prothorax nearly black: the former is distinctly granulated; the palpi, labrum, eyes, and antennæ are rufous, as in *C. undatus*, and like that the prothorax has both an anterior and posterior interrupted band of white hairs; the elytra and underside of the body are reddish-brown: the legs rufous, posterior ones very long.

\*\* Prothorace magis oblongo, muricato.

(235)

4. CLYTUS LONGIPES. *Long-legged Clytus.*

*C. (longipes) subtus, elytrisque, fuscus: prothorace oblongo disco carinato et muricato; elytris puncto, fasciisque tribus sublunatis piloso albis; pedibus rufis: posticis longissimis.*

Long-legged Clytus, body underneath and elytra brown; prothorax oblong with the disk carinated and muricated; dot and three sublunar bands of the elytra, white from hairs: legs rufous: the posterior pair very long.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken in Lat. 54°.



## DESCRIPTION.

Body reddish brown, underneath hairy, with white decumbent hairs. Head black, minutely and thickly punctured, with a longitudinal slight channel, transversely elevated between the antennæ; vertex elevated; palpi, labrum, antennæ and extremity of the nose, rufous: prothorax black, rather oblong, elevated longitudinally in the disk with an anterior bowed transverse ridge, followed by several minute acute tubercles, next in the middle is another shorter ridge, which is also succeeded by similar tubercles: the sides of the prothorax are granulated; between the granulated portion and elevated disk, it is minutely reticulated, with a pore in the centre of each reticulation: elytra brown, subacute, with three bands formed of decumbent white hairs; the first forming a crescent at the scutellum, which runs along the base and down the suture; the second in the middle first running transversely, then turning upwards towards the base and again turning down so as to form a hook next the suture; the third near the apex, running transversely from the external margin to the suture and then turning upwards so as to form another crescent; there is also a dot between the two first bands near the lateral margin; there is a large hairy white spot on the sides of the breast, and the anterior ventral segments have a white hairy band at the apex: the legs are rufous, the hinder pair remarkably long.

(236) 5. CLYTUS MURICATULUS. *Muricated Clytus.*

*C. (muricatus) subtus elytrisque fuscus; prothorace oblongo muricato; elytris puncto, lunula, fasciisque duabus obliquis, piloso-albis; pedibus rufis.*

Muricated Clytus, body underneath, and elytra, brown; prothorax oblong, muricated: dot, crescent, and two oblique bands of the elytra hairy-white: legs rufous.

Length of the body 5 lines.

Many specimens taken in Lat. 54°.

## DESCRIPTION.

This comes extremely near to the preceding species, but is smaller, the discoidal ridges of the prothorax are nearly obsolete, that part has four white hairy spots, the bands of the elytra are differently shaped, and the posterior legs are considerably shorter: the breast and base of the abdomen underneath are hoary with white hairs, but not always spotted and banded.

Family RHAGIADÆ. *Rhagiadans*.

XCI. Genus HARGIUM. Leach.

(237) 1. HARGIUM LINEATUM. *Stripe-necked Hargium*.Stenochorus lineatus. Oliv. *Ent.* iv, 69, 13, 6, t. iii, f. 22.Rhagium lineatum. Schön. *Syn.* iii, 414, 5.Length of the body  $5\frac{1}{2}$  lines.

Taken more than once in Lat. 54°. and also by Mr. Drake in the province of Massachusetts.

## DESCRIPTION.

Body black, rather glossy, hoary from longish cinereous hairs. Head constricted behind into a neck, punctured with large scattered punctures; antennæ shorter than the prothorax, robust, last joint ovate, pedicel testaceous: prothorax constricted anteriorly and posteriorly, armed on each side by a stout rather sharp spine, punctured like the head, and hairy, but there are three longitudinal stripes without hairs, and the intermediate one without punctures, the lateral ones pass over the spines: elytra mottled with whitish or cinereous hairs, with three longitudinal ridges, the two external ones confluent near the apex, and a little higher up including between them a short abbreviated ridge; the interstices are punctured like the head and prothorax; at the base and lateral margin the elytra are reddish, and on the ridge next the suture there are two yellowish spots: coxæ, trochanters, and base of the thighs reddish: abdomen carinated underneath.

Family LEPTURIDÆ. *Lepturidans*.

XCII. Genus PACHYTA. Meg.

(238) 1. PACHYTA LITURATA. *Blotched Pachyta*.*P. (liturata) atra, villosa-incana; elytris nudis, luridis, lituris tribus nigris, anticis duabus subparallelis.*

Blotched Pachyta, very black, hairy with hoary hairs; elytra naked, lurid, with three black blotches, the two anterior ones nearly parallel.

Length of the body 7—9 lines.

Several specimens taken in Lat. 54°. and 65°.

## DESCRIPTION.

This is the American representative of *P. quadrimaculata*, from which it differs principally in being not so hairy, with hoary instead of yellow-tinted hairs: the punctures of the prothorax and elytra are more minute; the antennæ are rather shorter, and the elytra, instead of two subquadragular black spots, have three less black linear ones, the two anterior ones being partly parallel, and in some specimens confluent.

## XCIII. Genus LEPTURA. Linn.

This genus may be thus subdivided with respect to the species about to be described.

- \* Eyes emarginate, or kidney-shaped.
- † Elytra triangular.
- a ——— truncated ..... } at the apex.
- b ——— premorse, or with a sinus taken out } at the apex.
- 1 ——— prothorax anteriorly constricted without posterior angles.
- 2 ——— not constricted, posterior angles acute.
- c ——— rounded..... at the apex.
- †† Elytra linear.
- a ——— truncated } at the apex.
- b ——— rounded } at the apex.
- \*\* Eyes entire.

\* † a.

(239) 1. \* LEPTURA CHRYSOCOMA. *Goldy-locks Leptura.*

*L. (chrysocoma) holosericea, lanugine aurea; elytris testaceis, apice extus obscurioribus; antennis pedibusque nigris.*  
Goldy-locks Leptura, velvety with golden pile: elytra testaceous, at the apex externally dusky; antennæ and legs black.

## PLATE V, FIG. 1.

Length of the body  $5\frac{1}{2}$ — $6\frac{1}{4}$  lines.

Several specimens taken; the largest, in the Journey from New York; the smaller, near Cumberland-house. Taken likewise by Dr. Mac Culloch and Capt. Hall, in Nova Scotia.

## DESCRIPTION.

This beautiful insect, is related to *L. virens*, but perfectly distinct. The body appears to be black, but that colour is, in most parts, nearly concealed by a thick and mostly long coat of brilliant golden hairs with a very slight tint of green, where the coat is thin the body appears minutely punctured. Head subelongated, the neck exserted, subtriangular; nose with only a few scattered whitish hairs; antennæ black, third, fourth, and fifth joints rather slenderer and longer than the succeeding ones: prothorax between globose and bell-shaped, constricted anteriorly, channelled, grossly punctured: substance of the elytra pale testaceous, towards the apex externally they are dusky; the golden down on them is shorter and decumbent; apex diverging and obliquely truncated: underside of the abdomen particularly brilliant from decumbent hairs: legs less hairy than the rest of the body.

(240) 2. \* LEPTURA SUBPUBESCENS. *Subpubescent Leptura.*

*L. (subpubescens) nigra, flavo-subpubescens: prothorace punctis confluentibus scabro; elytris pallide testaceis, apice divergentibus, fastigiatis, nigris.*

Subpubescent *Leptura*, black, red with thin yellow down: prothorax rough with confluent punctures; elytra pale testaceous, diverging, fastigiated and black at the apex.

Length of the body not noticed.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, thinly coated with yellow hairs. Head and neck grossly punctured; antennæ longer than the prothorax, black, downy, intermediate joints rather slenderer than the others, fourth shorter than the fifth: prothorax shaped as in *C. chrysocoma*, widely but obsoletely channelled; rough and reticulated, as it were, with numerous confluent punctures, sides more hairy than the disk: elytra thickly punctured, pale testaceous, black at the apex, where the suture curves outwards so that they diverge from each other, extremity nearly transversely truncated: abdomen underneath minutely, breast rather grossly, punctured: podex subemarginate.

\* † b l.

(241) 3. \* LEPTURA ERYTHROPTERA. *Red-winged Leptura.*

*L. (erythroptera) atra, subpubescens, punctata; prothorace punctis rugoso, antennis pallido annulatis; elytris grosse punctatis, rubris, apice summo nigro, præmorso.*

Red-winged *Leptura*, very black, subpubescent, punctured; prothorax wrinkled with punctures; antennæ annulated with pale: elytra grossly punctured, deep red, extremity black, premorse.

Length of the body 8 lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body very black, slightly downy, underneath minutely punctured. Head shorter than in the last section, as well as the neck obsoletely channelled; thickly but not minutely punctured; antennæ rather longer than the prothorax; third and fourth joints a little slenderer than the others, and pale red at the base; the sixth is pale with a black spot on each side at the apex; and the whole of the eighth is of the same colour; the last joint is acuminate: the prothorax is constricted anteriorly, and the constricted part is perfectly smooth, the rest is thickly and confluentely punctured and wrinkled; at the base the prothorax is depressed and obsoletely trilobed: scutellum black, representing an isosceles triangle: elytra of a dull red, grossly and deeply punctured; extremity scooped out with the external angle longer than the internal and acuminate: mesosternum emarginate posteriorly.

(242) 4. LEPTURA CANADENSIS. (Olivier.) *Canada Leptura*.

*Leptura canadensis*. Fab. *Syst. Eleuth.* ii, 357, 15. Oliv. *Ent.* iv, 73, 8, 6, t. iii, f. 27. Illig. *Mag.* iv, 122, 15.

Length of the body  $6\frac{3}{4}$ —8 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body very black, slightly downy, minutely punctured. Head as in the last species, but the neck is not channelled; antennæ with base of the fifth joint, the whole of the sixth and eighth, except the black apex of the former, pale or pale rufous: prothorax as in *L. erythroptera*, only deeply and confluentely punctured but not wrinkled: elytra black, sanguineous at the base. In other respects this species resembles that insect; the external angle of the apex of the elytra is however shorter.

\* † b 2.

(243) 5. \* LEPTURA TENUIOR. *Slenderer Leptura*.

*L. (tenuior) nigra, pube flava; elytris flavo quadrifasciatis; pedibus abdomineque testaceis.*

Slenderer *Leptura*, black, with yellow down; elytra with four yellow bands; legs, and abdomen testaceous.

Length of the body  $5\frac{3}{4}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, rather slender, slightly punctured, thinly coated with decumbent yellow hairs. Antennæ shorter than the body, fifth joint scarcely longer than the fourth: prothorax between bell-shaped and a truncated cone, a little constricted in the middle, fringed with yellow hairs anteriorly and posteriorly: scutellum triangular: elytra testaceous, yellow at the base, and with three yellow bands, the first interrupted; oblique sinus at the apex not so deep as in the two preceding species: legs testaceous; abdomen of a deeper colour; and segments scarcely emarginate.

This species differs in habit from the two preceding ones, it is narrower in proportion, and comes nearer to *L. quadrifasciata*, but the posterior angles of the prothorax, though acute, are not so prominent, it belongs however to the same subdivision, with the last mentioned insect.

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\* † c.

(244) 6. \* LEPTURA BREVIS. *Short Leptura.*

*L. (brevis) nigra, brevis, pubescens; antennis articulis ultimis sex basi pallidis; elytris grosse punctatis vitta laterali lutea.*

Short *Leptura*, black, short, pubescent; six last joints of the antennæ pale at the base; elytra grossly punctured with a luteous lateral band.

Length of the body 5 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body shorter than usual in proportion to its width; black, underneath minutely punctured and thinly covered with rather silvery decumbent hairs. Head thickly and confluent punctured, rather downy with erect hoary hairs; antennæ shorter than the body; fourth, fifth, and sixth joints long and slenderer than the rest; six last short and pale at the base: prothorax between bell-shaped and globose, deeply and confluent punctured; downy with some erect hoary hairs; anteriorly constricted, posteriorly depressed: scutellum linear covered with pale decumbent hairs: elytra very grossly and deeply punctured, shorter than the abdomen and rounded at the apex, with a lateral band bent a little inwards towards the base, which it does not reach, of the colour of the yolk of an egg; anus entire: down on the legs yellow.

(245) 7. LEPTURA SEXMACULATA. (Linné.) *Six-spotted Leptura.*

*Leptura sexmaculata.* Linn. *Fn. Suec.* 686; *Syst. Nat.* ii, 638, 11. Fab. *Syst. Ent.* 197, 11; *Ent. Syst.* I, ii, 346, 37. *Syst. Eleuth.* ii, 362, 47. Oliv. *Ent.* iv, 73, 26, 35, t. 4, f. 43. Payk. *Fn. Suec.* iii, 123, 25. Gyll. *Ins. Suec.* iv, 14, 13. Panz. *Fn. Germ.* lxxix, 21? Müll. *Zool. Dan.* Pr. 94, 1058.

— testaceo-fasciata. De Geer *Ins.* v, 133, 9.

*Pachyta sexmaculata.* Steph. *Illustr. Mandib.* iv, 265, 5 †?

Length of the body  $5\frac{1}{2}$  lines.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body rather short, black, downy, minutely punctured. Head very thickly and minutely punctured, obsoletely channelled; antennæ slender, shorter than the body, fifth joint considerably longer than the fourth: prothorax shaped as in the preceding species but less depressed posteriorly; very thickly as well as minutely punctured: scutellum triangular: elytra pale-yellow, with an arched black spot at the base, then follows an interrupted band consisting of three acute black spots placed in a triangle, beyond the middle is a dentated black band which reaches neither the suture nor the lateral margin; the apex also, the suture, and the lateral margin towards the apex, are all black.

VARIETY B. Head not channelled: spot at the base of the elytra coalescing with the intermediate and lateral ones of the anterior band, and reaching the lateral margin; interior spot reaching the suture so as to form the half of a spot common to both elytra; the intermediate band is broader and reaches both the suture and lateral margin.

\* †† a.

(246) 8. \* LEPTURA SEMIVITTATA. *Half-striped Leptura.*

*L. (semivittata) linearis, nigra, supra nitida, subtus argenteo-sericea: elytris vitta dimidiata, flexuosa, lutea, apice truncatis.*  
Half-striped Leptura, linear, black, above glossy, underneath silvery from silky hairs; elytra with a luteous flexuose stripe reaching half their length; truncated at the tip.

Length of the body 6 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body long and narrow, black, underneath slightly and minutely punctured, with the sides of the breast and abdomen brilliant with a silvery lustre from decumbent silky hairs, above glossy and almost naked. Head thickly punctured, but behind each eye there is a levigated space; antennæ longer than the prothorax, intermediate joints not slenderer than the others, the fourth as long as the fifth; neck short and levigated: prothorax bell-shaped, not constricted anteriorly, depressed posteriorly; thinly punctured, especially in the disk: scutellum triangular: elytra punctured but not thickly, punctures almost arranged in rows, towards the apex they are very slight; a reddish-yellow subflexuose stripe runs from the middle of the base of the elytra a little more than half way towards the apex, which is diverging and truncated: the ventral segments of the abdomen terminate in a reddish membrane.

(247) 9. \* LEPTURA GULOSA. *Red-throated Leptura.*

*L. (gulosa) linearis, nigra, supra nitida, subtus sericeo-argentea; gula rufescenti; elytris vitta postice abbreviata lutea; apice truncatis.*

Red-throated Leptura, linear, black above glossy, underneath silvery from silky hairs; throat reddish; elytra with a luteous stripe abbreviated posteriorly; truncated at the apex.

Length of the body 5 lines.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Very nearly related to the preceding species, from which it differs chiefly in being much smaller, in having the underside of the body more thickly covered with hairs glittering like silver; in having the throat pale-red; the fifth joint of the antennæ longer than the fourth; the punctures of the elytra more numerous and scattered; the yellow stripe running nearer to the apex of the elytra, dilated at the base and not flexuose: the fore-breast also in the disk, the after-breast on each side, and the base of the thighs are obscurely red: the tibiæ are piceous.

\* †† b.

(248) 10. \* LEPTURA SUBARGENTATA. *Subargent Leptura.*

*L. (subargentata) linearis, nigra, punctulatissima; corpore subtus, prothoracisque angulis posticis ex pube subargenteis: elytris apice rotundatis.*

Subargent Leptura, linear, black, very minutely and thickly punctured, with the body underneath, and the posterior angles of the prothorax rather silvery from down; elytra rounded at the apex.

Length of the body 4 lines.

Taken in Lat. 65°.

## DESCRIPTION.

Body narrow, entirely black, very minutely and thickly punctured, underneath glittering, but less conspicuously with silver pile: antennæ shorter than the body, nearly filiform, fourth and fifth joints of equal length: prothorax perfectly bell-shaped, anteriorly not constricted, posterior angles acute, diverging and covered with silver pile: elytra rounded at the apex.



(249) 11. \* LEPTURA SIMILIS. *Similar Leptura.*

*L. (similis) linearis, nigra, punctulatissima, corpore subtus ex pube subargenteo; elytris apice rotundatis; antennis scapo femoribusque rufis.*

Similar *Leptura*, linear, black, very minutely and thickly punctured, body underneath, rather silvery from down; elytra rounded at the apex; scape of the antennæ and thighs rufous.

Length of the body  $3\frac{1}{3}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

This may possibly be the other sex of the preceding species which it resembles in every respect, except that the antennæ are rather longer, the scape or first joint, all but the base on the upper side, is rufous, as are likewise the thighs and four anterior tibiæ; the posterior thighs are however black at the apex.

(250) 12. \* LEPTURA LONGICORNIS. *Long-horned Leptura.*

*L. (longicornis) nigra, elongata; elytris grosse punctatis, vitta pedibusque basi, testaceis; antennis mediocribus.*

Long-horned *Leptura*, black, elongated, stripe of the grossly punctured elytra, and base of the legs, testaceous; antennæ as long as the body.

Length of the body 5 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

At first sight this species a good deal resembles *L. semivittata* and *gulosa* of the former section, but its eyes are entire, and its antennæ much slenderer and of a different type, more nearly resembling those of *L. argentata* and *similis*. Body black, minutely punctured, downy, especially underneath, with silvery hairs. Head minutely, thickly, and confluent punctured; labrum and base of the mandibles rufous; last joint of the palpi securiform; antennæ very slender nearly as long as the body; scape incrassated, rufous, black at the base; prothorax a little constricted anteriorly, very thickly punctured with a longitudinal dorsal impunctured line or channel: scutellum longitudinally concave, rounded at the apex; elytra nearly linear, grossly punctured, glossy, nearly black, with a pale stripe extending from the middle of the base to near the apex, and gradually approaching the suture; apex subtruncated: legs rufous at the base.

\* \*

(251) 13. \* LEPTURA PROTEUS. *Proteus Leptura.*

*L. (Proteus) nigra, subpubescens, nitidiuscula; oculis integris subauratis; antennis elytris pedibusque colore variantibus; prothorace canaliculato postice bigibbere.*

*Proteus Leptura*, black, subpubescent, rather glossy; eyes entire, inclining to a golden lustre; antennæ, elytra, and legs varying in colour; prothorax channelled, posteriorly with a gibbosity on each side.

Length of the body  $3\frac{1}{4}$ — $5\frac{1}{2}$  lines.

Taken abundantly in Lat.  $54^{\circ}$ . and  $65^{\circ}$ .

## DESCRIPTION.

Body narrow, black, punctured, somewhat glossy, rather hairy, especially underneath, with decumbent hairs, those on the elytra have somewhat of a golden lustre, the rest are silvery. Nose more grossly punctured than the rest of the head; vertex convex; eyes subovate, pale with a slight golden lustre; antennæ filiform, longer than the prothorax, obscurely rufous, with the four first joints black, fifth joint longer than the fourth: prothorax campanulate, anteriorly constricted, posterior angles a little diverging; thinly punctured; channelled, the channel running between two dorsal gibbosities: scutellum triangular: elytra rather widest at the base, and punctured there more grossly next the suture; diverging and truncated at the apex: tibiæ piceous or rufo-piceous; four posterior thighs rufous at the base.

VARIETY B. In this variety only the base of the six last joints of the antennæ is rufous; all the thighs are rufous at the base, and the tibiæ of a clearer red, but they are dusky at the apex; tarsi rufous at the base. Length of the body  $3\frac{3}{4}$  lines.

C. Elytra with a stripe at the base, tips and lateral margin rufous: antennæ entirely black: legs as in variety B. Length of the body  $4\frac{3}{4}$  lines.

D. Elytra with a longitudinal rufous stripe dilated at the base and apex; bead of the lateral margin also rufous: antennæ and legs nearly as in B, but the whole of the tarsi is obscurely rufous. Length of the body 3—4 lines.

E. Elytra rufous with the suture and a stripe near the margin abbreviated at both ends, dusky: antennæ as in A; legs as in B. Length of the body 4—5 lines.

F. Elytra rufous, with a dusky suture; antennæ as in A; legs as in D.

G. Like F, but elytra luteous; antennæ all black. Length of the body 4 lines.

H. Like F and G, but legs and antennæ black. Length of the body  $3\frac{3}{4}$  lines.

This species is the American representative of *L. femorata* of Paykull and Gyllenhal, which is not clearly synonymous with that of Fabricius and Olivier, it differs, without mentioning colour, in having much shorter antennæ, and in being glossy. Mr. Marsham's *L. femorata* has reniform eyes, and therefore belongs to another section, it may be that of Olivier.

*L. Proteus* seems to vary ad infinitum in the colour of the elytra, antennæ, and legs, but as all the varieties agree in every respect except colour and size, and the elytra advance so gradually from pale rufous to black, or vice versa, there can be little doubt of the identity of the different varieties.

(252) 14. \* LEPTURA LONGICEPS. *Long-headed Leptura.*

*L. (longiceps) nigra, punctulata, ex pube alba subincana; capite elongato; prothorace canaliculato; elytris luridis litura antica, sutura, apiceque, nigris.*

Long-headed *Leptura*, black, minutely punctured, somewhat hoary from white down; head elongated; prothorax channelled; elytra lurid with an anterior blotch, the suture, and apex black.

Length of the body 4 lines.

Several specimens taken in Lat. 54°. and 65°.

## DESCRIPTION.

Like the preceding species but shorter in proportion with a longer head. Body black, punctured, hoary with rather silvery down: head as long or longer than the prothorax; eyes pale, subtriangular; antennæ with the second, third, and fourth joints slenderer than the rest: prothorax shaped as in *L. Proteus*, constricted before, depressed behind, but without diverging angles, channelled but with no gibbosity on each side the channel: elytra nearly linear, very thickly punctured, dirty-yellow, with a dusky lateral blotch extending from the base beyond the middle of the elytrum, suture and subtruncated apex black; down yellowish.

Having now described all the Capricorn beetles and other *Longicornia* of Latreille taken in the Expedition, and being arrived at a spot whence there is a direct path to his *Eupoda*, I shall again retrace my steps, and call back the reader's attention to the last family of Mr. W. S. Mac Leay's *Rectocera*, the *Passalidæ*, from which, as was before observed,<sup>2</sup> we may get an approach, by the *Scolytidæ*, &c. to the great tribe of Rhynchophorous beetles, or those the anterior part of whose head terminates in a rostrum or snout.

A most remarkable insect, taken by Edward Bennett, Esq. in Choco, in Colombia, and a specimen of which may also be seen in the collection of the British Museum, may be here noticed, as supplying the first stage in the route now indicated. Its general figure is that of a *Passalus*, only more convex and cylindrical; it has the same description of mandibles but rather straighter; a similar upper-lip; the vertex is crowned with an incurved horn as in *Passalus cornutus*, &c.; the

<sup>2</sup> See above, p. 163.

furrows of the elytra are similar and crenated; and between the claws, as in the *thalerophagous* Lamellicorn Beetles, and some of the *saprophagous* is a plantula or little spurious joint, but instead of a single pseudonychium or bristle, it is furnished with *two* on each side.<sup>3</sup> All these circumstances prove something more than an analogical relation between this genus and *Passalus*, and that they may be placed near to each other in the scale of affinities, with no very wide interval between them. *Phrenapates* differs from the last-mentioned genus, chiefly in its tongue, the lobe of its maxilla, in its antennæ without a lamellated or pectinated knob; in having all the tibiæ armed with teeth, and in its heteromerous tarsi.

Having thus, as it should seem, discovered a link that may be connected with the *Passalidæ*, by the intervention probably of some intermediate genus,<sup>4</sup> we are next to look for some group, leading towards the Rhynchophorous beetles, that will approach it on the other side. Fabricius placed *Sinodendrum* amongst the *Bostri-*

<sup>3</sup> *Introd. to Ent.* iii, 385, 691. In the genuine *Dynastidæ* the *Plantula* is very conspicuous, but instead of *Pseudonychia* it terminates in a pencil of stiffish hairs.

I shall here give the characters of the genus alluded to in the text.

\* Genus PHRENAPATES. Kirb.

*Labrum* transverse, submembranous, submarginate, hairy, especially at the apex.

*Labium* nearly square, above longitudinally lacunose; at the apex emarginate in the middle with a sinus on each side.

*Tongue* horny, linear; dilated at the base, rounded at the apex, above convex.

*Mandibles* protended, robust, three-sided, widest at the base and excavated, toothed at the apex, and internally.

*Maxillæ* one-lobed; lobe narrow, acute, fringed with hair on the inner side.

*Maxillary palpi* four-jointed, filiform, the three first joints subclavated, the third shorter than the rest, last joint cylindrical.

*Labial palpi* three-jointed, filiform, two first joints subclavated, the third straight internally, curving externally, the first joint longer than the rest.

*Mentum* three-lobed, intermediate lobe much shorter than the lateral ones, truncated.

*Antennæ* robust, eleven-jointed, joints somewhat spherical, the three last larger than the rest, so as to form an oblong knob.

Body subcylindrical, naked. Head transverse, scarcely narrower than the prothorax: eyes small, prominent, subhemispherical: trunk isthmiated: prothorax very slightly channelled, anteriorly and posteriorly subsinuated on each side; prosternum dilated at the base; at the apex recurved between the arms; mesosternum an obtuse mucro; metasternum a rounded lobe: legs, posterior pairs distant; thighs subcompressed linear; tibiæ armed with spiny teeth, with a pair of moveable spurs and a pair of fixed teeth at the apex; four anterior tarsi five-jointed, with the four first joints very short, the last elongated and clavate; posterior four-jointed with the first joint rather long, the two next short, the claw-joint as in the other legs; claws single incurved; between the claws is a spurious joint furnished at the end with two pairs of bristles: scutellum triangular; elytra slightly furrowed, furrows crenate.

There is a Sierra Leone insect taken by Afzelius, and described by Gyllenhal,\* under the name of *Passandra sexstriata*, which comes near *Phrenapates*, but the labium, tongue, and antennæ differ.

P. BENNETTI, *nigra, glabra, nitida*: capite tricorni, cornu intermedio incurvo, apice submarginato, lateralibus obliquis truncatis. Length of the body, mandibles included, 1 inch 2 lines. Two or three specimens taken by Edward Bennett, Esq. in Choco in Colombia.

The mandibles in this species are incurved at the apex, and armed with three sharpish teeth, the intermediate one being the longest; on the innerside are two short obtuse ones, of which the posterior one is the smallest.

<sup>4</sup> *Sinodendrum cylindricum* appears an intermediate insect agreeing in many characters with *Phrenapates*. Its antennæ exhibit the knob of those of the *Lucanidæ*.

\* Schön. *Syn.* iii, append. 146, 200, t. vi, f. 3.

*chidæ*, to which Mr. W. S. Mac Leay acknowledges it exhibits an affinity worthy of further investigation,<sup>5</sup> it exhibits likewise characters that connect it with the Lamellicorns, and *Phrenapates* is similarly circumstanced. There are several such characters that appear occasionally in all these tribes, thus lamellated antennæ are found in *Phloiotribus* and *Sinodendrum*, as well as in the Lamellicorns; the spurious joint between the claws of the tarsi is found in *Bostrichus*, as well as in *Phrenapates* and the tribe just named; all the tibiæ are armed with spiny teeth in *Sinodendrum*, *Phrenapates*, and some *Bostrichi*; the head also is armed with a horn not only in the two first, but in some species, of the last of these genera.

Giving due weight to all these circumstances, I think it may be fairly deduced from them, that the *Passalidæ* by *Phrenapates* and *Sinodendrum* lead off to the *Bostrichidæ*, which are generally acknowledged to lead in their turn to the Rhynchophorous beetles. Having cleared, as I hope, this point, I shall now proceed to the description of the insects of the two latter tribes, taken in the Expedition.

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iv. XYLOTRYPA. Kirb.

Family ANOBIDÆ.

Latreille has placed his *Ptinioides*, including the present family, at a great distance from the other Lignivorous beetles, to which I agree with Mr. Stephens in thinking they properly belong; but I regard them as forming two families at least, *Ptinidæ* and *Anobidæ*. I hesitate, however, as to their place, for they seem to occasion a disruption of affinities, if placed between the *Bostrichidæ* and *Scolytidæ*; I am therefore disposed to consider them as out of the direct line, and forming a branch from the former of these families. As there are only two species in the collection belonging to this family, I shall describe them in this place.

<sup>5</sup> *Hor. Ent.* 33.

## XCIV. Genus ANOBIUM. Fab.

\* *Elytris striatis.*(253) 1. \* ANOBIUM FOVEATUM. *Excavated Anobium.*

*A. (foveatum) rufo-fuscum subtus dilutius, pubescens, subcylindricum; prothorace dorso elevato in medio foveato, utrinque unidentato.*

Excavated Anobium, reddish brown, paler underneath, pubescent, subcylindrical; back of the prothorax elevated with an excavation in the middle; armed on each side with a tooth.

Length of the body 2 lines.

A pair taken in Lat. 65°.

## DESCRIPTION.

This species very closely resembles *A. striatum*, of which it may be regarded as the American representative. It differs principally in having a rather large excavation in the middle of the elevated back of the prothorax, the sides of which are armed with a triangular tooth or prominence.

The male is obscurely rufous, both above and below, the female is browner above.

## XCV. Genus CIS. Lat.

(254) 1. CIS MICANS. (Fabricius.) *Glittering Cis.*

*Cis micans.* Gyll. *Ins. Suec.* iii, 379, 2? De Jean *Cat.* 102. Steph. *Illustr. Mandib.* iii, 345, 4.

*Anobium micans.* Fab. *Ent. Syst.* i, 238, 13; *Syst. Eleuth.* i, 324, 14. Illig. *Kaf. Preuss.* i, 331, 7. Payk. *Fn. Suec.* i, 309, 3. Herbst. *Ins.* v, 64, 10, t. xlvii, f. 11, k.

*Ptinus villosulus.* Marsh. *Ent. Brit.* i, 86, 14.

Length of the body 1 line.

Two specimens taken in the Expedition.

## DESCRIPTION.

Body subcylindrical, black-brown, glossy, with numerous short upright pale rather glittering hairs; minutely but not very visibly punctured. Head rather flat and lacunose; antennæ and legs testaceous. Prothorax anteriorly sinuated on each side with the middle lobe rounded and projecting a little over the head; sides slenderly margined; posterior angles rounded. Punctures of the elytra seem almost, but very indistinctly, arranged in rows.

I am not quite clear that this is Major Gyllenhal's *C. micans*. The clava of the antennæ is of the same colour with the stalk, and the punctures of the elytra appear almost but not evidently arranged in rows, which leads to some suspicion that it may be the *C. hispidus* of that author. It is however the *Ptinus villosulus* of Mr. Marsham: and I think the *Anobium micans* of Fabricius and Paykull.

Family SCOLYTIDÆ.<sup>6</sup>

XCVI. Genus TOMICUS. Lat.

(255) I. TOMICUS PINI. (Say.) *Fir Tomicus*.

Bostrichus pini. Say. *Journ. Acad. Phil.* V. ii, 257, 5.  
 ———— typographus } Melsh. *Cat.*  
 ———— pini . . . . . }

Length of the body  $1\frac{3}{4}$ —2 lines.

Frequently taken in the Journey from New York to Cumberland-house, and also in Lat. 65°. Mr. Say says it is very destructive to many species of the genus *Pinus*.

## DESCRIPTION.

Body cylindrical, deep chestnut, glossy, hairy underneath. Head above with scattered granules; nose fringed with yellowish hairs; antennæ testaceous: prothorax rather oblong, angles rounded, anteriorly granulated with minute elevations, posteriorly punctured with scattered punctures, hairy next the head and on the sides: elytra hairy on the side, with five rows of transverse punctures next the suture, which reach only to the truncated part; punctures of the side and apex scattered; apex truncated obliquely and excavated, with the external edge of the excavation armed with four denticles, of which the second and third are the largest: legs pale chestnut; tarsi testaceous.

In the other sex? the elytra are entire and unarmed, and the dorsal rows of punctures on the disk of the elytra are more numerous.

VARIETY B. Entirely rufous, or pale-chestnut.

XCVII. \* Genus APATE. Fab.

*Antennæ* with a large rather ovate, hairy, solid compressed knob; with an elongate, clubbed scape; subglobose-pedicel; stalk with four or five indistinct joints.<sup>7</sup>

*Eyes* bipartite, immersed, with the lobes connected by a series of lenses.<sup>8</sup>

*Front* in one sex excavated into a concavity, in the other plane.

<sup>6</sup> I consider those *Xylotrypa* as forming this family which have *capitate* antennæ; those in which they terminate in an elongated knob of three joints, as *Bostrichus*, &c. I denominate *Bostrichidæ*.

<sup>7</sup> Plate VIII, Fig. 2, a.

<sup>8</sup> *Ibid.* b.

*Prothorax* short, subglobose, anteriorly elevated and rough with points.

*Elytra* substriated, unarmed at the tip in both sexes.

Geoffroy having long since separated two Xylophagous genera from *Dermestes* Linn. under the names of *Bostrichus* and *Scolytus*,<sup>9</sup> I follow Latreille in adopting his nomenclature in preference to that of Fabricius and Herbst; the first naming the *Bostrichus* of Geoffroy *Apate*, and his *Scolytus*, *Hylesinus*; and the last distinguishing the latter genus by the uncouth appellation of *Ekkoptogaster*.

I have here restricted the name of *Apate* to those *Xylotrypa* which agree in their characters with *Apate limbata* Fab. (*Dermestes domesticus* Linn.) which I regard as the type of the genus.

It appears intermediate between *Bostrichus* Geoff. and *Tomicus* Latr. From the former it borrows its subglobose prothorax, rough anteriorly with sharp points or denticles, and from the latter its antennæ terminating in a solid compressed knob.<sup>1</sup> It differs from both in its bipartite eyes connected only by a few lenses, and by the concave forehead of one sex.

(256) I. \* APATE BIVITTATA. *Two-striped Apate.*

*A. (bivittata) picea*; *prothorace rufescenti, postice rugulis transversis, antice denticulis, scabro*; *elytris vittis duabus apice conniventibus pedibusque luteis.*

Two-striped *Apate*, piceous; prothorax reddish, posteriorly rough with transverse wrinklets, anteriorly with denticles; elytra with two luteous stripes united at the tip; legs luteous.

PLATE VIII, FIG. 5.

Length of the body  $1\frac{3}{4}$  line.

A pair taken in the Expedition.

DESCRIPTION.

Very near *A. domestica* (*A. limbata* F.) but distinct. Body piceous or nigro-piceous, cylindrical; underneath with some scattered pale hairs. Head rough with minute elevations or granules; nose terminating in a transverse ridge; antennæ testaceous with a very large knob: prothorax subglobose, reddish, rough behind with numerous transverse rugosities; before with sharp points or denticles: elytra with several rows of punctures, and two luteous stripes which unite at the apex of the elytrum; or perhaps it might be better to say, luteous, with two piceous stripes, one of the disk and the other of the side, but not reaching the apex: anus and legs testaceous.

In the other sex the front, or rather face, is hollowed out into a concavity; the prothorax is black anteriorly, and less rough from rugosities and points.<sup>2</sup>

<sup>9</sup> Geoff. *Ins.* i, 301, 309, *comp.* Linn. *Fn. Suec.* 416—421.

<sup>1</sup> In *Tomicus typographus*, under a powerful lens, the knob appears annulated, but in the smaller species this character is scarcely to be detected.

<sup>2</sup> Plate VIII, Fig. 5, *a.*



(257) 2. \* APATE RUFITARSIS. *Red-footed Apate.*

*A. (rufitarsis) nigra cylindrica; prothoracis scabri basi, antennis, tarsi, elytrisque rufis: his humeris nigris.*

Red-footed Apate, black, cylindrical; base of the rough prothorax, antennæ, tarsi, and elytra, rufous; the latter with black shoulders.

Length of the body  $1\frac{3}{4}$  line.

Two specimens taken in the Expedition.

## DESCRIPTION.

Body cylindrical, black, hairy underneath. Head hairy; face concave; antennæ pale testaceous: prothorax rufous posteriorly, granulated especially anteriorly; elytra punctured in rows, rufous, with a black humeral blotch: tarsi rufous.

The face of the other sex is probably plane; and the prothorax with more prominent points and asperities.

## xxii. \* Subgenus LEPISOMUS. Kirb.

*Prothorax* anteriorly narrower, subconstricted, not armed with elevated points or denticles.

*Elytra* inflexed at the base, covered with minute depressed hairs, resembling little scales.

This subgenus agrees with a genuine *Apate* in its eyes, antennæ, legs, &c. but the prothorax is of a different shape, never asperated with rugosities, points, or denticles, and like *Cis*, the body, particularly the elytra, is covered with scale-like hairs. This little group, if placed between *Tomicus* and *Apate*, seems rather to interrupt the series of *Xyloptrypa* with an elevated and asperated prothorax; it may perhaps be best regarded as branching off from the latter in another direction?

(258) 1. \* APATE (*Lepisomus*) RUFIPENNIS. *Red-winged A. Lepisomus.*

*A. L. (rufipennis) nigra, punctulata, fronte bituberculata, antice transverse depressa, prothorace carinato; ore, antennis, elytris, pedibusque, rufescentibus.*

Red-winged A. *Lepisomus*, black, minutely punctured; front bituberculate, anteriorly with a transverse depression; prothorax ridged; mouth, antennæ, elytra, and legs, rufescent.

## PLATE VIII, FIG. 2.

Length of the body  $1\frac{1}{4}$  line.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body black, minutely punctured, hairs white, decumbent; those of the prothorax and elytra looking like minute scales. Head with a pair of minute tubercles, not easily discovered, in the space between the eyes, anteriorly transversely impressed; mouth and antennæ pale rufous: prothorax very thickly and minutely punctured, with a rather obsolete longitudinal dorsal ridge: elytra dull-red, with several rows of larger punctures, the interstices of which are very minutely and thickly punctured, at the base rough with minute elevations: legs rufous.

(259) 2. \* APATE (*Lepisomus*) NIGRICEPS. *Black-headed A. Lepisomus.*

*A. L. (nigriceps) rufus, punctulatissimus; capite nigro, unituberculato, naso impresso.*

Black-headed *A. Lepisomus*, rufous, minutely and thickly punctured; head black, with a frontal tubercle; nose impressed.

Length of the body 1 line.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Smaller than the preceding. Body rufous, minutely and thickly punctured. Head black, with a very minute tubercle between the eyes; nose impressed; antennæ and underside of the head pale rufous: elytra sculptured as in the preceding species, but the rows of punctures are less conspicuous.

(260) 3. \* APATE (*Lepisomus*) BREVICORNIS. *Short-horned A. Lepisomus.*

*A. L. (brevicornis) nigra punctulatissima, piloso-incana; antennis brevissimis pedibusque rufis.*

Short-horned *A. Lepisomus*, black, very minutely and thickly punctured, hoary from hairs; antennæ very short, with the legs rufous.

Length of the body 1 line.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body black, covered with hoary hairs, above resembling scales. Antennæ very short with a small knob, rufous: front without a tubercle, nose not impressed; elytra not striated. This species seems to indicate another section of the genus.

## XCVIII. Genus HYLURGUS. Lat.

(261) 1. \* HYLURGUS RUFIPENNIS. *Red-winged Hylurgus.*

*H. (rufipennis) niger, pilosus, subnitidus; prothorace subcarinato; elytris rufis, sulcatis, sulcis punctatis, interstitiis dorsalibus scabris.*

Red-winged Hylurgus, black, hairy, rather glossy; prothorax with an obsolete ridge; elytra rufous, furrowed, furrows punctured, with the dorsal interstices rough.

Length of the body 3 lines.

Many specimens taken in the Journey from New York to Cumberland-house, and in Lat. 65°.

## DESCRIPTION.

Body dusky, hairy, rather glossy, punctured. Head black, confluent punctured; vertex obsolete channelled; antennæ rufous: prothorax constricted anteriorly, and dusky-rufous; base with a double slight sinus, and dorsal ridge terminating in an impression at the angle between the sinuses: elytra rufous, furrowed; furrows punctured; interstices of the furrows rough with minute elevations, especially at the base, which is inflexed: tibiæ and tarsi dull-rufous; the former denticulated on one side.

N. B. In some specimens the elytra and anterior part of the prothorax are piceous or nearly black; in others the elytra are testaceous, and the prothorax piceous and paler anteriorly.

From *Hylurgus* the transit to the Rhynchophorous beetles by the lignivorous genera *Cossonus*, &c. is very obvious, and has been admitted by Latreille and several modern Entomologists. In the present arrangement, indeed, I have reversed that of Latreille, because, for the reasons above stated, the passage is from one branch of the *Rectocera* of Mac Leay by the *Xylophaga* to the *Rhynchophora*, which keeps together the great body of lignivorous *Coleoptera*.

## IX. RHYNCHOPHORA. Lat.

i. GONATOCERA. Schön.  
I. LONGIROSTRES. Linn.

Family CALANDRIDÆ. *Calandridans.*

XCIX. Genus CALANDRA. Clair.

(262) I. CALANDRA PERTINAX. (Olivier.) *Pertinaceous Calandra.*

*Calandra pertinax.* Oliv. *Ent.* v, No. 83, 90, 24, t. xxviii, f. 417.

Length of the body 7 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body obversely pear-shaped, black, naked. Head immersed in the prothorax, smooth; rostrum rather shorter than the prothorax, compressed, impunctured, channelled above at the base and tumid; antennæ a little longer than the rostrum, scape as long as the rest of the antennæ, knob pear-shaped; eyes immersed, lateral, subovate, not meeting below: prothorax oblong, rather narrowest anteriorly, tricostate, the two lateral costæ sending a branch towards the base; four depressed broad punctured dull-red stripes occupy the intervals between the elevated parts; sides a little elevated and punctured; the punctures of the stripes and sides are whitish; scutellum an isosceles triangle, excavated at the base: elytra oblong, very slightly furrowed with whitish punctures in the furrows; suture, and alternate interstices, elevated; the others or depressed ones dull-red: body underneath with scattered whitish punctures varying in size: postpectus and tarsi chestnut.

Family HYLOBIDÆ. *Hylobidans.*

C. Genus HYLOBIUS. Germ.

(263) I. \* HYLOBIUS CONFUSUS. *Confused Hylobius.*

*H. (confusus) nigro-piceus, piloso-incanus, rostro crassiasculo sub-breviori; prothorace confluentur punctato; dorso rugoso; elytris puncto-striatis, pilis albidis confuse maculatis.*

Confused Hylobius, nigro-piceous, hoary from hairs; rostrum rather thick and short: prothorax confluently punctured, wrinkled in the back: elytra with punctures in rows, confusedly mottled with whitish hairs.

Length of the body  $4\frac{1}{4}$  lines.

Taken in Canada by Dr. Bigsby, also in Massachusetts by Mr. Drake.

## DESCRIPTION.

Body oblong, of a dark pitch-colour, hoary from decumbent hairs, confluent more or less punctured. Rostrum thickish and rather shorter than the prothorax; thickly and confluent punctured: prothorax with a dorsal levigated line not reaching the base; disk with numerous confluent irregular excavations or wrinkles; sides confluent punctured: elytra with ten rows of oblong deep punctures, the interstices of which are confluent punctured, mottled confusedly, except at the base, with whitish hairs: thighs armed with a short tooth; tibiæ, as in the other species of the genus, armed at the apex with an inflexed stout spine or claw: tarsal claws reddish.

N. B. In a natural arrangement *Pissodes* ought to be near *Hylobius*.

Family LEPYRIDÆ. *Lepyridans*.

CI. Genus LEPYRUS. Germ.

(264) I. LEPYRUS COLON. (Linné, *Germar.*) *Colon Lepyrus*.

*Lepyrus* Colon. Germ. *Mag.* ii, 340, 29. Schön. *Curc.* 168.  
*Curculio* Colon. Linn. *Mant.* ii, 531. Herbst. *Ins.* vi, 89, 50, t. lxxv, f. 6. Payk. *Fn. Suec.* iii, 223, 42. Panz. *Fn. Germ.* xlii, 2; *Encycl. Ins.* v, 478, 28. Fuess. *Arch.* 68, t. xxiv, f. 1.  
*Rhynchænus* Colon. Fab. *Syst. Eleuth.* ii, 441, 15. Gyll. *Ins. Suec.* iii, 164, 84.  
*Liparus* Colon. Oliv. *Ins.* v, 83, 291, 317, t. vii, f. 76.  
*Curculio* oblongus, fuscus, &c. Geoff. *Ins.* i, 280, 6.

Length of the body 6 lines.

Several specimens taken in Lat. 65°. Taken also by Dr. Bigsby in Canada.

This species approaches very near to *L. arcticus*, which it is singular that Entomologists have placed in a different genus, some considering it as a *Cleonis*,<sup>3</sup> others as a *Hylobius*,<sup>4</sup> it exhibits however precisely the same characters as *L. Colon*, even to the markings of the prothorax, elytra, and abdomen.

## DESCRIPTION.

Body black covered with decumbent gray hairs. Rostrum arched, thickish, a little longer than the prothorax, confluent punctured, having also a dorsal longitudinal ridge, terminating between the eyes in a little narrow excavation: prothorax narrowest anteriorly, covered with minute elevations producing wrinkles, and having also a dorsal longitudinal ridge and two oblique, rather curved stripes formed of dense white hairs: the elytra have several rows of punctures, with the interstices minutely granulated; each elytrum has a discoidal white dot a little below the middle, and, in several specimens, there is also an indistinct one between it and the apex: on each side of the abdomen underneath, as in *L. arcticus*, are four yellowish round spots formed of hairs. In some specimens the pubescence has a tawny hue, in others the indistinct spot is obliterated.

<sup>3</sup> De Jean and Sturm.

<sup>4</sup> Schönherr. The characters in which it differs from *Hylobius* are principally the carinated rostrum, the unarmed thighs, and the straight tibiæ, so that it is scarcely more than a *subgenus*!

(265) 2. \* **LEPYRUS GEMELLUS.** *Twin-streaked Lepyrus.*

*L. (gemellus) ater albido-pilosus; rostro, prothoraceque albido bivittato, carinatis; elytris striis gemellis pluribus piloso-albis.*  
Twin-streaked *L. gemellus*, very black, covered with white hairs, rostrum, and prothorax two-striped with white, ridged: elytra with several pairs of hairy white longitudinal streaks.

PLATE V, FIG. 7.

Length of the body  $7\frac{1}{4}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body very black, covered more or less with decumbent white hairs, and also with minute tubercles. Rostrum as in *L. Colon*: prothorax ridged, confluent tuberculated, minutely punctured between the tubercles, marked on each side with an oblique stripe composed of white hairs: elytra confluent tuberculated, with five pairs of longitudinal streaks, composed of white hairs, converging towards the apex: the first and fifth including the rest.

2. BREVIROSTRES. Linn.

Family **CLEONIDÆ.** *Cleonidans.*

CII. Genus **CLEONIS.** Meg.

In the *Introduction to Entomology*, willing to retain the ancient name *Curculio*, to indicate one of the modern genera into which the immense tribe of *Rhynchophora* is divisible, we had considered Linné's *Curculio nebulosus*, belonging to the present genus, as the type of it, but viewing the matter more attentively, it strikes me that the only group entitled to be distinguished by that ancient name, is the *Curculio* of Pliny and the Romans, called by us the weevil, and by the French *Calendre*, which Clairville, latinizing the word, has made *Calendra*.<sup>5</sup> The species above described as a *Calandra* belongs to a different group from *Curculio granarius*, *Oryzæ*, *Zææ*, &c. distinguished by its superior size and its triangular and very distinct scutellum. I would therefore propose calling this and its congeners, *Calandra*, and the granivorous ones, above noticed, *Curculio*.

<sup>5</sup> In his plate it is written *Calandra*, which Fabricius has adopted. Clair. *Ent. Helvet.* i, 62, t. ii.

(266) 1. \* *CLEONIS VITTATUS*. *Striped Cleonis*.

*C. (vittatus) linearis, piloso-incanus; rostro subcarinato; prothorace elytrisque vittis tribus nigricantibus.*

Striped *Cleonis*, linear, hoary from pile; rostrum obsoletely ridged; prothorax and elytra with three blackish stripes.

Length of the body  $3\frac{1}{2}$ —5 lines.

Several specimens taken in the Expedition.

## DESCRIPTION.

Body narrow, black, clothed with decumbent hoary pile. Head thickly covered with hairs, but on each side from the eye to the insertion of the antennæ, the hairs are less dense, which gives the appearance of a blackish stripe; rostrum thick, shorter than the prothorax, obsoletely ridged, punctured: prothorax obsoletely ridged, punctured with rather large scattered punctures, often concealed by the hairs, with three blackish stripes, produced as in the head by the hairs being thinner: the elytra also have three similar stripes, and are punctured in rows: the abdomen underneath appears as if dotted with black from the same cause.

Family PHYLLOBIDÆ. *Phyllobidans*.

## CIII. Genus MACROPS. Kirb.

Body oblong, winged. Rostrum shorter than the prothorax, subcylindrical, somewhat arched, having a dorsal longitudinal ridge; bed of the scape of the antennæ oblique reaching from near the apex of the nostrum to the middle of the eye; antennæ apical, longer than the head, eleven-jointed; scape as long as the remainder of the antennæ, incrassated at the apex, reaching the eye; two next joints longer than the subsequent ones, obconical; the following four very short, top-shaped; the four last forming a subovate knob; eyes lateral, subimmersed, long, forming, in some measure, an isosceles triangle with the base rounded, and the vertex downwards:<sup>6</sup> prothorax subglobose; antepectus emarginate, sides obsoletely lobed: scutellum very minute, triangular; coleoptera oblong: thighs unarmed; tibiæ armed with a very minute incurved spine or spur; tarsi not dilated, penultimate joint bipartite.

At first sight the species of this little group would be set aside as belonging to *Sitona* Germer, with which they possess many characters in common; a closer inspection, however, will satisfactorily prove that they belong to different genera. In the genus just named, the rostrum is shorter, thicker, and channelled; the knob of the antennæ consists only of three joints, the bed of the scape turns below the eye; the eye itself is round: the antepectus is not emarginate, or lobed; the tibiæ have no incurved spine.

I cannot find this genus in Schönherr.

<sup>6</sup> Plate VIII, Fig. 4, a.

(267) 1. \* *MACROPS MACULICOLLIS*. *Spotted-necked Macrops*.

*M. (maculicollis) niger piloso-subincanus; prothorace obsolete carinato postice utrinque macula baseos alba; antennis caule, femoribus basi, tibiis tarsisque obscure rufis.*

Spotted-necked Macrops, black, rather hoary from pile; prothorax obsoletely ridged, having on each side posteriorly a white spot; stalk of the antennæ, base of the thighs, and the tibiæ and tarsi obscurely rufous.

PLATE VIII, FIG. 4.

Length of the body 2 lines.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body black, rather hoary from decumbent hairs and scales. Rostrum very minutely punctured; ridge reaching from the base to the apex; stalk of the antennæ a dull-red: prothorax minutely and thickly punctured, obsoletely ridged, having the sides, especially at the base, covered with little white scales: elytra furrowed, furrows punctured: tibiæ, tarsi, and base of the thighs of a dull obscure red, posterior thighs on the inside more distinctly rufous.

(268) 2. \* *MACROPS VITICOLLIS*. *Stripe-necked Macrops*.

*M. (viticollis) nigricans, squamulosus; rostro apice carinato; prothorace vittis tribus cinereis, lateralibus subundulatis; elytris cinereo-marmoratis: antennis caule, tibiis tarsisque, rufescentibus.*

Stripe-necked Macrops, blackish, covered with minute scales; rostrum ridged at the apex; prothorax with three cinereous stripes, the lateral ones rather wavy; elytra mottled with cinereous: stalk of the antennæ, and the tibiæ and tarsi rufescent.

Length of the body  $2\frac{1}{4}$  lines.

A single specimen taken.

## DESCRIPTION.

Body covered with brownish-black scales. Rostrum ridged at the tip, the rest covered with scales, which perhaps conceal the remainder of the ridge; stalk of the antennæ rufous: prothorax with three narrow pale stripes, the lateral ones a little waved: scutellum pale; elytra slightly furrowed; furrows minutely punctured; mottled with pale: tibiæ and tarsi, the former obscurely, rufous.



## CIV. \* Genus LEPIDOPHORUS. Kirb.

Body covered with scales. Antennæ longer than the head, eleven-jointed; scape as long as the remainder of the antennæ, reaching to the eye, growing gradually thicker towards the apex; pedicel as long as the two following joints, obconical; the remaining joints of the stalk rather top-shaped; knob three-jointed, ovate, acute; rostrum shorter than the prothorax, thick, subcylindrical, straight; bed of the scape of the antennæ very short, not reaching the eye; eyes subobtusangular, with the vertex downwards: prothorax rather longer than wide, barrel-shaped: elytra taken together oblong-oval: scutellum punctiform: thighs clubbed, unarmed; tibiæ armed at the apex with a short incurved spine; penultimate joint of the tarsi bilobed.

This genus is extremely near to *Barytomus* Germar; in that, however, the third joint of the antennæ is nearly as long as the second, the bed of the scape is less strongly marked, the eyes are nearly round, and the elytra at the apex form a ridge with each other. These genera appear leading towards the Orthocerous *Rhynchophora*, the bed of the scape in them becoming shorter and almost evanescent.

(269) I. \* LEPIDOPHORUS LINEATICOLLIS. *Streak-necked Lepidophorus.*

*L. (lineato-collis) niger albido squamulosus et pilosus: prothorace vittis tribus angustis albis; antennis pedibusque rufescentibus; elytris apice seriatim setulosus.*

Streak-necked Lepidophorus, black with whitish scales and pile: prothorax with three narrow white stripes; antennæ and legs reddish-brown: elytra at the apex with little bristles in rows.

Length of the body  $2\frac{1}{2}$  lines.

Several specimens taken in Lat. 65°.

## DESCRIPTION.

Body black, underneath hairy with little whitish round scales and hairs of the same colour intermixed. Head and rostrum behind the antennæ covered with similar scales; antennæ dusky-red: prothorax dusky, confluent punctured with three whitish longitudinal narrow indistinct stripes formed of minute scales: elytra mottled with whitish and dusky round scales; slightly furrowed with punctures in the furrows; at the apex, in the deflexed part, there is a series of white rigid minute bristles between each furrow: legs hairy, reddish brown; thighs darker.

Family THYLACITIDÆ. *Thylacitidans*.

CV. Genus TRACHYPHLŒUS. Germ.

(270) 1. \* TRACHYPHLŒUS MELANOTHRIX. *Black-haired Trachyphlœus*.

*T. (melanothrix) lutosus*,<sup>7</sup> *fuscus*, *supra atro-setosus*; *prothorace subcanaliculato*; *elytris subsulcatis, sulcis punctatis*; *antennis tarsisque rufis*.

Black-haired Trachyphlœus, lutose, brown, above bristled with black bristles: prothorax slightly channelled; elytra with shallow punctured furrows; antennæ and tarsi rufous.

Length of the body  $2\frac{3}{4}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body really black, but quite covered with a brown powdery substance, resembling mud or dirt. Head impressed between the eyes; rostrum longer than the head, and nearly as wide, emarginate and hairy at the end; antennæ rufous, scape covered with brown powder: prothorax transverse, obsoletely channelled, with several short rigid black bristles on each side of the channel arranged nearly in rows: elytra obsoletely furrowed with slight punctures in the furrows, and between each furrow is a row of longer rigid black truncated bristles; a few white ones are discernible at the apex: legs bristly, with white bristles, rufous, but the thighs are covered with powdery scales.

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We may leave the *Gonatoceros* group, or circle, by an insect which exhibiting all the other characters of Schönherr's legion of *Brachyrhynchi*, belongs to the *Orthoceros* division of that author, or *Rhynchophora* with straight unbroken antennæ, but there seem to be several links wanting between it and the *Brachyceridæ*. *Rhinaria*,<sup>8</sup> in which the antennæ, though the scape is very short, may be termed *subfractæ*, since that joint forms a very obtuse angle with the rest of the antennæ, would intervene between the other *Gonatocera*, and the insect here alluded to.

<sup>7</sup> See *Introd. to Ent.* iv, 275, 6.

<sup>8</sup> *Linn. Trans.* xii, 430, t. xxii, f. 9.

## Family PACHYRHINCHIDÆ.

CVI. \* Genus PACHYRHYNCHUS. Kirb.

*Labrum* subemarginate, subdistinct.*Mandibles* armed with two teeth at the apex.*Labium* nearly square.*Palpi* conical.

*Antennæ* short, inserted in a roundish lateral cavity near the apex of the rostrum, eleven-jointed : scape short, as long as the third joint, somewhat incrassated at the apex ; pedicel obconical, as long as the fourth joint ; third joint obconical elongated ; the following five joints growing gradually shorter and wider ; knob ovate acute.

Body oblong pear-shaped. Rostrum almost as wide as the head, subcylindrical, a little wider at the tip, ridged between the eyes and antennæ, an angular impression between the former ; eyes round, prominent : prothorax subcylindrical, rather narrowest anteriorly : antepectus not emarginate nor lobed : coleoptera oblong, depressed at the apex : thighs clubbed, unarmed ; tibiæ unarmed ; penultimate joint of the tarsi bipartite.

(271) 1. \* PACHYRHYNCHUS SCHÖNHERRI. *Schönherr's Pachyrhynchus.*

*P. (Schönherrii) piloso-incanus* : prothorace obsolete albido trivittato, scutello albo : elytris seriebus quatuor punctorum nigrorum. Schönherr's Pachyrhynchus, hoary from pile : prothorax with three faint whitish stripes ; scutellum white : elytra with four rows of black dots.

Length of the body 5—7 lines.

Taken in Canada by Dr. Bigsby. Also in Georgia ? by Mr. Abbott.

## DESCRIPTION.

Body thickly covered, especially underneath, with hoary pile. Antennæ shorter than the head ; eyes brown : prothorax with three faint whiter stripes : scutellum white : elytra with nine rows of punctures, and at the base of the lateral margin is a portion of a tenth row, between the second and third ; in the sixth, seventh, eighth, and ninth rows the pile is thicker than in other parts of the elytrum, so as to form three white stripes, on these stripes there are also four rows of distant black dots on each elytrum.

ii. ORTHOCERA. Schön.

Family ATTELABIDÆ. *Attelabidans*.

CVII. Genus ATTELABUS. Linn.

(272) 1. \* ATTELABUS SIMILIS. *Similar Attelabus*.

*A. (similis) ater, nitidus; occipite, prothorace, scutello, elytrisque rubris; his puncto-striatis; striarum interstitiis levibus; capite postice transversim, et inter oculos longitudinaliter, impressum.*

Similar *Attelabus*, very black, glossy: occiput, prothorax, scutellum, and elytra red: the latter punctured in rows with impunctured interstices; head behind transversely, and between the eyes longitudinally, impressed.

Length of the body  $2\frac{1}{2}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

This species is nearly the transcript of *A. curculionoides*, for which I at first mistook it, but a closer inspection convinced me it was distinct. They agree in being black, glossy, and naked; in having a red prothorax and elytra, the latter with several rows of punctures; in having the head and rostrum more or less punctured, with curved impressed lines on each side just above the eyes, in the disk of the front; the prothorax also in both is minutely punctured, and the cubit arched and internally serrulated. They differ, however, in several respects. In *A. curculionoides* the head is wider in proportion, the occiput black, levigated, with a central impression; the curved lines of the front not distinctly punctured; the stalk of the antennæ rufous; the prothorax at the base is streaked with transverse linear impressions; the scutellum is nearly black, and the interstices of the rows of punctures of the elytra are irregularly punctured. In *A. similis* the hinder part of the head which is punctured and wrinkled, and scutellum are rufous, a transverse impression divides the occiput from the front; the curved lines are distinctly punctured; in the front between the eyes is a wide channel; the antennæ are piceous; the prothorax is not streaked at the base: and the elytra between the rows of punctures are levigated.

(273) 2. ATTELABUS BIPUSTULATUS. (Fabricius.) *Two-pustled Attelabus*.

*Attelabus bipustulatus*. Fab. *Ent. Syst.* ii, 385, 3; *Syst. Eleuth.* ii, 418, 5. *Herbst. Ins.* vii, t. 105, f. 7. Oliv. *Ent.* v, 81, 10, 11, t. i, f. 11.

\_\_\_\_\_ *ater, elytris macula baseos rufa. Encycl. Ins.* iv, 278, 3.

Length of the body 2 lines.

Taken in Canada, near Lake St. Clair, by Dr. Bigsby.

## DESCRIPTION.

In sculpture this species for the most part agrees with *A. curculionoides*, except that there is an impression between the eyes, and a pair on the disk of the prothorax. The whole of the body is very black, except the shoulders of the elytra, which are covered by a large oblong red spot, the anterior thighs are armed with a minute tooth: the disk of the coleoptera, or elytra taken together, towards the base is depressed; and the scutellum is obversely triangular, the vertex of the triangle pointing towards the head.

## CVIII. \* Genus APOTOMUS. Kirb.

*Antennæ* inserted in the side of the rostrum near its base, eleven-jointed; short scape and pedicel nearly equal in length, incrassated; six following joints very minute, increasing gradually in width; the three last joints large, distinct, forming an oblong knob: rostrum about the length of the head: prothorax obsolete lobed behind: scutellum punctiform: elytra furrowed, abbreviated: podex uncovered: four posterior legs distant; anterior tibiæ straight not serrulated.

This genus, the type of which is *Attelabus ovatus* Fabr. and Oliv. seems intermediate between *Attelabus* and *Rhynchites*. It differs from the former principally in the articulation of the stalk of the antennæ, the joints of which, in *Apotomus*, are comparatively much more minute and shorter; in the anterior tibiæ which are shorter, straighter, and not serrulated; in its shorter head, and less dilated tarsi. From *Rhynchites* it differs in the shortness of its rostrum with the antennæ inserted at the base instead of the middle, and having the breast of the male unarmed: from both it differs in the lobed prothorax; in the elytra being obliquely abbreviated internally both at the base and apex; in their furrowed surface; in its naked podex; and, which is a strong character, in having the four posterior legs distant from each other.

In its lobed prothorax, it agrees with *Rhinobatus*, *Rhynocyllus*, *Eurhinus*, Illiger, &c.: it is worthy of observation, that in this latter genus and *Centrinus*, the four posterior legs are likewise distant; and that the males in *Centrinus* have an armed prothorax like *Attelabus*.

(274) 1. APOTOMUS OVATUS. (Fabricius.) *Ovate Apotomus*.

*Attelabus ovatus*. Fabr. *Syst. Eleuth.* ii, 426, 55. Oliv. *Ent.* v, 81, 11, 13, t. i, f. 13.

Length of the body  $1\frac{1}{4}$  line.

Variety B taken by Dr. Bigsby near Lake St. Clair.

## DESCRIPTION.

Body very short, between pear-shaped and ovate, deep violet, naked, minutely punctured. Head black, rostrum levigated: prothorax somewhat lozenge-shaped, emarginate anteriorly, very thickly and confluent punctured, with a levigated discoidal longitudinal line: elytra furrowed, furrows punctured.

VARIETY B. Blue-green.

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Family ANTHRIBIDÆ. *Anthribidans*.

CIX. Genus ANTHRIBUS. Fab.

(275) 1. ANTHRIBUS FASCIATUS. *Banded Anthribus*.

*Macrocephalus fasciatus*. Oliv. *Ent.* iv, 80, 9, 9, t. i, f. 9.

Length of the body 4 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, covered more or less with brown decumbent short hairs. Rostrum angular, thickish, dilated at the tip, below the antennæ covered thickly with snow-white decumbent pile; antennæ almost as long as the thorax, rufous, knob dusky-brown; front marked with two whitish dots, one adjoining each eye on their upper side: prothorax wrinkled with a transverse discoidal impression, and near the base with an elevated transverse ridge: elytra wrinkled with a discoidal tubercle near the base, near the apex adorned with an irregular angular band composed of snow-white decumbent pile: abdomen whitish with a double indistinct series of black dots: tibiæ with a white ring.

VARIETY B. With the tubercles of the elytra less conspicuous; the abdomen snowy-white; thighs variegated with white.

I have no memorandum whence I received this variety. It is smaller, and probably American.

There seems some approach in this genus to the Capricorn tribe, see *Macrocephalus cinereus* Oliv. *Ent.* t. i, f. 2.

This species does not appear well to arrange under any of Schönherr's subgenera of *Anthribus*.

Family CLYTHRIDÆ. *Clythridans.*

CX. Genus CHLAMYS. Knoch.

(276) 1. CHLAMYS PLICATA. *Plicate Chlamys.*Chlamys plicata. Oliv. *Ent.* vi, 96, 876, 3, t. i, f. 3. Klug. *Monogr.* 114, 22.——— tuberosa. Knoch. *Nene. Beytr.* i, 128, 1, t. iv, f. 42?Clythra plicata. Fab. *Suppl.* iii, 10; *Syst. Eleuth.* ii, 33, 20. Coq. *Illustr. Ic.* iii, 129, t. xxix, f. 8.Bruchus gibbosus. Fab. *Ent. Syst.* ii, 370, 8; *Syst. Eleuth.* ii, 397, 10. Linn. *Syst. Nat.* Gmel. iv, 1735, 10.

Length of the body 2 lines.

Taken in Canada by Dr. Bigsby. I have also received a specimen probably taken in New England by Professor Peck, from my friend the Rev. T. Brown, rector of Hemingston, Suffolk; and another from Massachusetts from Dr. T. Harris, Jun.

## DESCRIPTION.

Body obscure, bronzed. Head impressed posteriorly between the eyes; rhinarium, antennæ, and an elevated space adjoining the eyes anteriorly, rufous; nose indistinctly punctured: prothorax very finely and concentrically scored, with some scattered indistinct punctures; posteriorly considerably elevated: elevation bifid; behind this elevation the prothorax is produced and emarginate: scutellum obtriangular: elytra tuberculated with several acute, compressed tubercles, the anterior ones carinated; interstices with some scattered deep punctures: space between the four posterior legs punctured with large shallow punctures.

## X. PHYLLOPHAGA. Kirb.

i. CYCLICA. Latr.

It appears to me that no *very* wide interval separates the *Anthribidæ* from the *Cyclica* of Latreille, the former tribe have lost the conical palpi, thus receding from one great character of the Rhynchophorous beetles; their maxilla is also different and distinctly bilobed, approaching more nearly to that of the *Cyclica*—many forms however still intervene between them. On the above account, I have transposed Latreille's two sections of *Eupoda* and *Cyclica*.

Family CRYPTOCEPHALIDÆ. *Cryptocephalidans*.

CXI. Genus CRYPTOCEPHALUS. Fab.

(277) 1 CRYPTOCEPHALUS PUBESCENS. (Fabricius.) *Pubescent Cryptocephalus*.

*Cryptocephalus pubescens*. Fab. *Gen. Ins.* 220, 11, 12; *Syst. Eleuth.* ii, 43, 15. Oliv. *Ent.* vi, 96, 61, t. vi, f. 91.  
 ----- *hirsutus*. Linn. *Syst. Nat.* Gmel. iv, 1703, 22.

Length of the body  $2\frac{1}{4}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black with a *very* slight brassy tint, a little glossy, grossly and thickly punctured; downy more or less with cinerascens down: prothorax with a longitudinal levigated line, posteriorly with a double sinus: scutellum elevated towards the apex, perfectly smooth: elytra with a lateral lobe towards the base, shoulders with a tubercle.

(278) 2. CRYPTOCEPHALUS NOTATUS. (Fabricius.) *Marked Cryptocephalus*.

*Cryptocephalus notatus*. Fab. *Mant.* i, 83, 56; *Syst. Eleuth.* ii, 33, 76? Lin. *Syst. Nat.* Gmel. iv, 1708, 56?

Length of the body  $2\frac{3}{4}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, naked, glossy. Nose with a bilobed reddish-yellow spot at the apex; front with a yellow curvilinear spot adjoining the eyes on their inner side; between the eyes behind is a pair of round impressions, and a longitudinal intermediate abbreviated channel; antennæ mutilated in the specimen, but what remains of them is reddish-yellow: prothorax levigated, but sprinkled with very minute and slight punctures, visible only under a powerful magnifier; behind with a slight sinus on each side: scutellum levigated and elevated posteriorly: elytra deeply punctured with the punctures arranged in rows, the sixth row from the suture is interrupted, and in the interstices on each side of it are some irregular punctures, the intermediate rows do not reach the apex; a luteous band, abbreviated next the suture and growing gradually wider till it reaches the lateral margin, and an irregular spot at the apex of the same colour, distinguish the elytra.

Fabricius describes his *C. notatus* in so few words that it admits of some doubt whether his insect is synonymous with Dr. Bigsby's here characterized. The spots at the apex can scarcely be denominated *puncta*, but as he occasionally designates a large spot by this term, and both insects are from North America, for the present it may be allowed to stand under the above name.



## CXII. Genus EUMOLPUS. Klug.

This genus may be further resolved into two subgenera distinguished by the absence or presence of a lateral prothoracic margin. The former hairy, without much gloss, and approaching nearest to *Cryptocephalus*, and the latter naked, extremely brilliant, and receding from that genus towards the *Chrysomelidæ*.

The first I shall denominate *Adoxus* (Inglorious), the last *Endoxus* (Glorious). *E. Vitis* may be regarded as the type of the former, and *E. ignitus* of the latter subgenus.

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xxiii. \* Subgenus ADOXUS. Kirb.

*Labrum* subtransverse, entire.

*Palpi* (maxillary) with the two last joints much incrassated, the penultimate obconical, and last conical or subovate.

*Antennæ* with the pedicel as long as the third joint, the last joint apparently consisting of two joints.

Body not glossy, hairy. Nose with a sinus taken out: prothorax very convex and almost hemispherical, with the sides produced and emarginate.

In *Endoxus* the labrum is emarginate, the prothorax transverse, not so convex, sides margined and not produced; and the antennæ have the pedicel, or second joint much shorter than the third, and the last joint wears less the appearance of articulation.

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(279) 1. EUMOLPUS (*Adoxus*) VITIS. (Fabricius.) *E. Adoxus* of the Vine.

*Eumolpus Vitis*. Fab. *Syst. Eleuth.* i, 422, 20. Panz. *Fn. Germ.* lxxxix, 12. Latr. *Crust. Arach. et Ins.* ii, 147. Oliv. *Ent.* vi, 96, 911, 28, t, i, f. 9.

*Cryptocephalus Vitis*. Fab. *Syst. Ent.* 108, 15; *Ent. Syst.* ii, 60, 36. Linn. *Syst. Nat.* Gmel. iv, 1704, 27. Oliv. *Encycl. Method.* vi, 612. Ross. *Fn. Etrusc.* i, 105, 252. Panz. *Ent. Germ.* i, 195, 13. Goeze. *Eur. Fn.* viii, 403, 3.

————— Le Gribouri de la Vigne. Geoff. *Ins.* i, 233, 2.

————— villosus. Schneid. *Mag.* 219, 33.

*Chrysomela villosula*. Schrank. *Enum.* 95, 181.

Length of the body  $2\frac{3}{4}$  lines.

Several taken in the Journey from New York, in Lat. 54°. and 65°.

## DESCRIPTION.

Body black, a little glossy, hairy with cinerascens hairs, minutely punctured. Palpi rufous, last joint black; five first joints of the antennæ rufous, the rest black: elytra and tibiæ rufous.

Both Geoffroy and Fabricius complain of the ravages committed by this little species upon the vine in Europe, and probably it is equally destructive to those of America.

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Family CHRYSOMELIDÆ. *Chrysomelidans.*

This family, even as it stands in Latreille's last work, (*Crustace's, Arachnides, et Insectes*) will admit of further subdivision, assuming for characters, the antennæ, palpi, eyes, and prosternum. If we take *Chrysomela goettingensis* for the type of the genuine *Chrysomelæ*, we may arrange under it all those of Latreille in which the punctures of the elytra are scattered or not arranged in rows.

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CXIII. Genus CHRYSOMELA. Linn.

(280) 1. CHRYSOMELA PHILADELPHICA. (Linné.) *Philadelphian Chrysomela.*

*Chrysomela Philadelphica.* Linn. *Syst. Nat.* ii, 592, 44. De Geer *Ins.* v, 353, 6, t. xvi, f. 13. Fab. *Syst. Ent.* 103, 49; *Syst. Eleuth.* i, 444, 135. Oliv. *Ent.* v, 91, 525, 33, t. ii, f. 22. Petiv. *Gazoph.* t. xxvi, f. 11.  
 ----- *decipiens.* Web. *Obs. Ent.* i, 52, 1?

Length of the body  $3\frac{1}{2}$ —4— $4\frac{3}{4}$  lines.

The type and variety C taken in Canada by Dr. Bigsby. Variety B in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body oblong, black-green, naked, glossy, convex, punctured with scattered punctures. Palpi, antennæ, rhinarium, and legs rufous; labrum hairy: prothorax with the punctures at the sides more numerous than those on the disk: elytra pallid, with a longitudinal stripe at the suture with three diverging obsolete branches, and several irregular spots; one at the shoulders larger than the rest and as it were broken, or obtusangular, all of a dark green: the elytra are grossly punctured with scattered punctures, but next the suture the punctures are disposed in two rows, the sutural one

extending from the base to near the apex, where it becomes confluent with the second, both diverging towards the base and surrounding the upper branch of the sutural stripe; there is a fourth series of punctures at a little distance from the lateral margin, and the interstice between them is impunctured; epipleura dark-green.

N. B. The two lower branches of the above stripe are surrounded by a common series of punctures.

VARIETY B. Smaller, green-bronzed, green spots of the elytra more numerous, epipleura pallid.

C. Sutural stripe with only one branch, the two lower ones forming separate spots; epipleura pallid.

This varying species may be known from the succeeding ones by the green colour of its body; all the varieties are distinguished by the obtusangular spot at the shoulders of the elytra: the varying number of green spots on these organs is produced by the separation of some of the irregular ones into distinct ones, and the lower branches of the sutural stripe doing the same. Variety C comes nearest to that figured by De Geer and Olivier.

(281) 2. \* CHRYSOMELA CONFINIS. *Neighbouring Chrysomela.*

*C. (confinis) æneo-viridis, punctata; antennis, palpis, pedibusque ferrugineis; elytris rufescentibus, margine laterali, villaque flexuosa discoidali pallidis, lineis insuper flexuosis, maculisque irregularibus, æneo-vividibus, elevatisque.*

Neighbouring Chrysomela, bronzed-green, punctured; antennæ, palpi, and legs ferruginous; elytra rufescent with the lateral margin and a flexuose stripe of the disk pallid; sides with flexuose lines and irregular spots of bronzed-green and elevated.

Length of the body  $4\frac{1}{2}$  lines.

A single specimen taken in Nova Scotia by Capt. Hall.

DESCRIPTION.

Nearly related to the preceding species. Body oblong, obscurely bronzed-green, grossly punctured. Palpi, antennæ, legs, and rhinarium ferruginous: punctures of the prothorax scattered in masses, with the interstices very minutely punctured: scutellum bronzed: elytra reddish with a discoidal flexuose irregular pale stripe dilated at the base and towards the apex; there are also two flexuose dark-green discoidal stripes in the disk, the exterior one nearly reaching the base and the interior approaching nearer to the apex, between these towards the base is a single oblong green spot, and outside them are many irregular ones of the same colour; all these spots and stripes are convex and mostly circumscribed by punctures; there is a double series of punctures diverging towards the base; and an oblique abbreviated one between these and the scutellum, as in many *Harpalidæ*, &c.; the interstice between the double series is green at the base. There is a lateral series of punctures also as in *C. Philadelphica*.

(282) 3. \* CHRYSOMELA BIGSBYANA. *Bigsby's Chrysomela*.

*C. (Bigsbyana) viridis, palpis, pedibus, antennisque rufis; prothorace antice et lateribus rufescentibus; elytris pallide rufescentibus, vitta suturali, macula magna fracta biloba humerali, punctisque pluribus, nigris aut nigro-viridibus.*

Bigsby's *Chrysomela*, green, palpi, antennæ, and legs rufous; anterior margin and sides of the prothorax, reddish; elytra pale-red, with a sutural stripe, a humeral broken bilobed spot, and several dots black or dark-green.

Length of the body 4 lines.

A single female specimen taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Colour and sculpture of the body like those of the preceding species, from which *C. Bigsbyana* differs principally in having the sides and anterior margin of the prothorax reddish-yellow: the elytra are of the same colour, but the suture itself, especially at the base, a stripe parallel to it, a large humeral bilobed spot, the interior lobe of which is obtusangular or broken, and several irregular dots and spots on the elytra are black-green.

(283) 4. CHRYSOMELA MULTIPUNCTATA. (Say.) *Many-dotted Chrysomela*.

*Chrysomela multipunctata*. Say. *Journ. Nat. S. Philad.* III, ii, 450, 2.

Length of the body  $4\frac{1}{2}$  lines.

Taken frequently in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body, head, antennæ, and legs ferruginous. Prothorax pale-yellow, with two posterior triangular ferruginous spots with a dot of the same colour between them; the punctures of the prothorax are more numerous and smaller than in *C. Philadelphica*, &c.; elytra yellowish-white; suture and a confluent stripe circumscribed with the double series of punctures, diverging towards the base of the elytra, ferruginous; surface covered with irregular greenish dots and short lines, as in the preceding species, a row of punctures marks the exterior side of the elytra, the interstice between it and the margin is immaculate and impunctured, the rest of the elytrum being thickly covered with scattered minute punctures.

(284) 5. \* CHRYSOMELA CLIVICOLLIS. *Hill-necked Chrysomela.*

*C. (clivicollis) violacea; elytris rufis maculis tribus difformibus suturaque violaceis; femoribus anticis bidentatis; prothoracis disco valde elevato.*

Hill-necked Chrysomela, violaceous; elytra red with three differently shaped spots, and the suture violaceous; anterior thighs bidentate; disk of the prothorax very much elevated.

Length of the body  $4\frac{2}{3}$  lines.

A single specimen taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body between oblong and hemispherical, violet. Head punctured; labrum without punctures: prothorax elevated in the centre to an obtuse peak, from the summit of which descend several concentric channels which run nearly to the margin, the interstices of which are punctured: scutellum violet with a green tint: elytra reddish, punctured, punctures scattered with some tendency to arrange into rows; three large dark violet spots distinguish the elytra, the first upon the shoulders subtriangular with the vertex truncated, the second near the apex bilobed, the third at the base forming with that on the other elytrum a large cruciform spot; suture violet: anterior thighs armed with two stout teeth.

This singular species in its form and the markings of its elytra seems to make some approach to the *Coccinellidæ*, but it exhibits all the characters of a genuine *Chrysomela*; should more species be found agreeing with it in the remarkable peak of the prothorax and teeth of the fore thighs, it might be regarded as forming a subgenus.

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xxiv. \* Subgenus PHYTODECTA. Kirb.

*Tibiæ* armed near the apex with an external tooth.

*Elytra* punctured with the punctures arranged in rows.

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(285) 6. CHRYSOMELA (*Phytodecta*) RUFIPES. *Red-legged C. Phytodecta.*

*Chrysomela rufipes.* De Geer *Ins.* v, 295, 4, t. viii, f. 25. Payk. *Fn. Suec.* ii, 69, 22. Gyll. *Ins. Suec.* iii, 486, 29.

———— 10-notata. Marsh. *Ent. Brit.* i, 175, 13.

———— 10-punctata. Scrib. *Journ.* 289, 182. Mart. *Col. t.* xvi, f. 40. Steph. *Cat.* 222, 2276, 17; *Illustr. Mandib.* iv, 338, 3.

———— La Chrysomele rouge à points noirs. Geoffr. *Ins.* i, 258.

Length of the body  $2\frac{3}{4}$  lines.

A single specimen taken in the Expedition.

*Chrysomela 10-punctata*  $\beta$ . (Linn. *Syst. Nat.* ii, 590, 32) is by many authors referred to as synonymous with *C. rufipes* De Geer, but it appears from the description of that variety in the first edition of the *Fauna Suecica* (p. 1354) that it had black legs, and therefore belongs to *C. nigripes* De Geer. By Linné's considering the *black-legged* species as his variety  $\beta$ , it seems not improbable that  $\alpha$  had *red* legs.

## DESCRIPTION.

The American differs a little from the British specimens. In the first place it is scarcely half the size, not only the mouth but the space before and between the eyes is rufous, only the vertex and occiput being black: the black spot of the prothorax, instead of consisting of two distinct spots connected only at their base, is only divided at its apex into two lobes, and the spots of the elytra, though similarly arranged, are less distinct: they agree in having the body underneath, except the rufous anus, black; and the legs rufous.

## CXIV. \* Genus PHÆDON. Meg.

*Labrum* transverse, scarcely notched.

*Palpi* (maxillary) four-jointed; first joint minute; second longer than the rest incrassated at the apex; third as large, or larger than the fourth, triangular; fourth rather conical, truncated.

*Antennæ* scape incrassated; pedicel shorter than the following joints; third, fourth, and fifth longer and obconical; five next triangular, larger than the antecedent ones and terminated by an ovate acute joint.

Body oblong; eyes transverse, oblong; prothorax transverse; scutellum rounded at the apex; elytra rather soft, oblong, with punctures not arranged in rows.

N. B. This genus is principally distinguished from *Chrysomela* by the last joint of the palpi being smaller than the preceding one and of a different shape.<sup>9</sup>

(286) I. PHÆDON ADONIDIS. *Adonis-eating Phædon.*

*Chrysomela Adonidis*. Pall. *It.* 463, 29. Fab. *Spec. Ins.* i, 117, 10; *Syst. Eleuth.* i, 431, 52. Herbst. *Arch.* 56, 29, t. xxiii, f. 17. Panz. *Ent. Germ.* i, 158, 10; *Fn. Germ.* c, t. iv. Oliv. *Ent.* v, 91, 560, 90. Hoppe. *Taschen.* 1796, 175, 24. Scrib. *Journ.* 22, 2, and 27, 12. Schrank. *Naturf.* xxiv, 65, 12. Hübn. *Naturf.* xxiv, 38, 2. Linn. *Syst. Nat.* Gmel. iv, 1683, 140. Cartis. *Brit. Ins.* iii, t. cxi. Steph. *Illustr. Mandib.* iv, 338, 1.

————— trilineata. Fab. *Gen. Ins. Mant.* 219, 6—7.

————— dorsalis. Fab. *Gen. Ins. Mant.* 220, 6—7. Shrank. *Naturf.* xxiv, 66, 13. Hübn. *Naturf.* xxiv, 39, 3, t. ii, f. 2. Linn. *Syst. Nat.* Gmel. iv, 1683, 141.

Length of the body 3—4 lines.

Several specimens taken in Lat. 54°.

<sup>9</sup> In Mr. Curtis's figure the palpi and maxillæ are those of the genuine *Chrysomelæ*, which, as he could not dissect the specimen in the British Museum, he has evidently given instead of those of *P. Adonidis*.

## DESCRIPTION.

Body black, punctured, sprinkled underneath with cinereous hairs. Vertex rufous with an occipital black spot: prothorax reddish-yellow, with a large discoidal black spot reaching from base to apex and constricted anteriorly; on each side also there is a round black dot: scutellum black, impunctured: elytra reddish-yellow, thickly punctured with scattered punctures; suture black except at the base; a black discoidal stripe or blotch reaching neither to the base nor the apex, anteriorly obliquely truncated and posteriorly acute, also distinguishes these organs.

VARIETY B. With the discoidal stripe acute at each extremity and smaller.

C. With the discoidal stripe evanescent.

Mr. Stephens, in his Catalogue of British Insects, has placed this insect in his section of *Chrysomela* with securiform palpi, and elytra with punctures in rows. He was probably led to this by Mr. Curtis's figure, in which the palpi, for the reasons lately assigned, are securiform, and the punctures dispersed in rows, though Mr. Curtis describes the elytra as "somewhat irregularly punctured." In the American specimens, and Panzer's figure, there is not the least appearance of rows.

(287) 2. PHÆDON RAPHANI. *Radish-eating Phædon.*

Phædon Raphani. Steph. *Illustr. Mandib.* iv, 336, 33.

Chrysomela Raphani. Fab. *Syst. Eleuth.* i, 430, 47. Payk. *Fn. Suec.* ii, 62, 15. Herbst. *Arch.* 59, 42, t. xiii, f. 42.  
Linn. *Syst. Nat.* Gmel. iv, 1690, 201. Brahm. *Ins. Kal.* i, 68, 221. Gyll. *Ins. Suec.* iii, 472, 19. Steph. *Cat.* 221, 2271, 12.

\_\_\_\_\_ ænea. Fab. *Mant.* i, 75, 106.

\_\_\_\_\_ viridula. De Geer *Ins.* v, 311, 19. Linn. *Syst. Nat.* Gmel. iv, 1688, 179.

\_\_\_\_\_ Polygoni, variety  $\beta$ . Linn. *Fn. Suec.* 520.

\_\_\_\_\_ Hypochæridis. Marsh. *Ent. Brit.* i, 184, 35.

Galleruca Raphani. Fab. *Ent. Syst.* ii, 19, 26. Panz. *Ent. Germ.* i, 172, 11.

Length of the body  $2\frac{1}{8}$ — $2\frac{3}{4}$  lines.

Several taken in Lat. 54°.

## DESCRIPTION.

Body oblong, punctured, glossy; underneath black with the disk a little bronzed, above green or green-gold. Head and prothorax minutely punctured; five first joints of the antennæ bronzed and glossy; the remainder cinereous and obscure: scutellum impunctured, violet: elytra very thickly punctured, punctures not arranged in rows: parapleura confluently punctured: disk of the postpectus bronzed and transversely striated with very slightly impressed striolæ.

In the female the abdomen, as in *Ph. Polygoni*, is often so distended with eggs as to make the elytra appear abbreviated.

VARIETY B. With the whole of the upper surface green, without any golden lustre.

(288) 3. PHÆDON POLYGONI. *Knot-grass-eating Phædon.*

Phædon Polygoni. Steph. *Illustr. Mandib.* iv, 336, 12.

Chrysomela Polygoni. Linn. *Fn. Suec.* 520; *Syst. Nat.* ii, 589, 24. Fab. *Syst. Ent.* 100, 32; *Syst. Eleuth.* i, 439, 102. Marsh. *Ent. Brit.* i, 178, 19. Payk. *Fn. Suec.* ii, 61, 14. Gyll. *Ins. Suec.* iii, 474, 20. De Geer *Ins.* v, 322, 26. Thunb. *Mus. Ups.* v, 108, 38. Ross. *Fn. Etrusc.* Hellw. i, 87, 209. Ced. *Fn. Ingr.* 188. Goeze *Eur. Fn.* viii, 372, 11. Müll. *Zool. Dan. Pr.* 82, 894. Panz. *Ent. Germ.* i, 161, 29. Oliv. *Ent.* v, 91, 576, 114, t. iii, f. 36. Lai. *Tyr. Ins.* ii, 154, 13. Schrank. *Enum.* 77, 142. Vill. *Ent.* i, 125, 20; *Fn. Frid.* 8, 69. Schæff. *IC. t.* 161, f. 4. H—r. *Ins.* 241, 118. Mart. *Col. t.* xiv, f. 2. Don. *Brit. Ins. t.* xvi, f. 1. Moll. *Ent. Mag.* ii, 41, 92. Steph. *Cat.* 221, 2270, 11.

Buprestis salicina. Scop. *Carn.* 199?

Le Criocere bleu a corcelet rouge. Geoffr. *Ins.* i, 242, 4.

Length of the body 2 lines.

Taken in Nova Scotia by Dr. Mac Culloch and Capt. Hall.

## DESCRIPTION.

Body oblong-ovate, punctured, glossy, underneath black. Head deep blue, with an abbreviated channel in the vertex between the eyes; antennæ piceous, with the five first joints rufous: prothorax convex, rufous: elytra deep blue, thickly punctured: legs rufous with piceous tarsi; anus rufous.

N. B. *Ph. Raphani* and *Polygoni* may perhaps form a subgenus.

## CXV. \* Genus PHYLLODECTA. Kirb.

*Labrum* transverse.

*Palpi* (maxillary) like those of *Chrysomela*.

*Antennæ* growing gradually thicker to the apex, with the second and third joints equal in length and longer than all the others except the last, which is ovate.

*Body* oblong; eyes nearly round; elytra with rows of punctures.

This genus is distinguished from the other *Chrysomelidæ* by having the second and third joints of the antennæ of equal length.

(289) 1. PHYLLODECTA VITELLINÆ. (Linné.) *Willow-eating Phyllodecta.*

Chrysomela Vitellinæ. Linn. *Fn. Suec.* 519; *Syst. Nat.* ii, 589, 23. Fab. *Syst. Ent.* 104, 55. Gyll. *Ins. Suec.* iii, 497, 35. De Geer *Ins.* v, 323, 27. Ross. *Fn. Etrusc.* Hellw. i, 83, 200. Marsh. *Ent. Brit.* i, 180, 23. Steph. *Cat.* i, 221, 2268, 9. Bechst. and Scarf. *Nat. Ins.* i, 133, 8. Goeze *Eur. Fn.* viii, 367, 10. Müll. *Zool. Dan. Pr.* 888. Brahm. *Ins. Kal.* i, 49, 163. Lai. *Tyr. Ins.* i, 164, 20. Schrank. *Enum.* 73, 135. Gled. *Einkl.* i, 452, 9, ii, 61, 86. Müll. *Linn. Nat.* v, i, 171, 23. Bar. *Nat.* vi, 93, 6. Mart. *Col. t.* xiv, f. 1. Vill. *Ent.* i, 124, 19. Müll. *Fn. Frid.* 9, 84. Rös. *Ins.* ii, 3, t. i, f. i, 5. Stew. *Elem.* ii, 47. Sam. *Nom.* i, 10.

La Chrysomèle briquetée. Geoffr. *Ins.* i, 263, 15.

Galleruca Vitellinæ. Fab. *Syst. Eleuth.* i, 487, 49. Payk. *Fn. Suec.* ii, 94, 12. Ced. *Fn. Ingr.* 198. Panz. *Fn. Germ.* xlv, t. xvi; *Ent. G.* i, 171, 7. Illig. *Mag.* i, 424, 49.

——— Salicis. Sch. *Nomen.* i, 55, 23.

Coccinella Vitellinæ. Scop. *Carn.* 224.

Phædon Vitellinæ. Steph. *Illustr. Mandib.* iv, 335, 10.

Length of the body  $2\frac{1}{3}$  lines.



## DESCRIPTION.

Body oblong, a little inclining to ovate, glossy; underneath black-bronzed, scarcely punctured; above bronzed with a copper tint, minutely punctured. First and second joints of the antennæ rufous: scutellum impunctured: elytra punctured in rows, with the interstices indistinctly punctured: tarsi piceous with the first joint rufous.

Family HALTICIDÆ. *Halticidans.*

CXVI. Genus HALTICA. Geoff.

xxv. \* Subgenus ORCHESTRIS. Kirb.

*Antennæ* simple.

*Body* oblong.

*Prothorax* with no transverse impression.

*Elytra* punctured but not in rows.

*Posterior tarsi* short, inserted in the apex of the tibia.

This subgenus corresponds with Stephens's family—b. 1, \*††, of which *H. Nemorum* is the type.

(290) 1. \* HALTICA (*Orchestris*) VICINA. *Neighbouring H. Orchestris.*

*H. O. (vicina) pallida*, pectore, capite punctis tribus; prothorace quatuor lineolaque, coleoptris vittis quinque, tarsisque, nigris. Neighbouring *H. Orchestris*, pale, with the breast, three dots of the head, four and a streak of the prothorax, five stripes common to both elytra, and tarsi black.

Length of the body  $3\frac{1}{2}$  lines.

A single specimen taken.

## DESCRIPTION.

Body underneath pale rufous with the disk of the postpectus black. Head punctured in the vertex, dirty-white, with a pair of contiguous black dots between the eyes and a subtriangular one on the nose; antennæ black with the underside of the scape and the two next joints dusky-rufous: prothorax very minutely and lightly punctured, white with two irregular black spots placed obliquely on each side, and a black longitudinal streak between them: scutellum black: elytra very minutely and thickly punctured, with a sutural stripe common to both, a discoidal one rather nearer the lateral margin, and another just above it all black; the intermediate stripe falls short of the apex of the elytra: the upper side of the tibiæ is dusky, and the tarsi are black.

This species is nearly related to *Galleruca caroliniana* of Fabricius and to *Haltica alternata* of Illiger, but the markings of the head and thorax are different.

(291) 2. \* *HALTICA (Orchestris) PUNCTICOLLIS.* *Dotted-neck H. Orchestris.**H. O. (puncticollis) aterrima, prothorace cum antepectore pallide flavis; illo punctis duobus lineolaque impressa atris.*Dotted-neck *H. Orchestris*, very black, with the prothorax and antepectus pale-yellow, the former with two dots and an impressed linelet also black.

PLATE VII, FIG. 9.

Length of the body  $2\frac{3}{4}$ —3 lines.

A single specimen taken in Lat. 65°. Taken also by Professor Peck in New England?

## DESCRIPTION.

Body subovate, very black, underneath glossy. Head irregularly punctured behind: antennæ underneath piceous at the base: prothorax very minutely and lightly punctured, pale-yellow with two black round dots in the disk between which above the scutellum is a less black triangular impression: elytra very minutely and lightly punctured: forebreast pale-yellow.

VARIETY B. Elytra with a blue tint.

Family GALLERUCIDÆ. *Gallerucidans.*

CXVII. Genus GALLERUCA. Geoff.

\* *Elongatæ.*(292) 1. GALLERUCA OLIVIERI. *Olivier's Galleruca.**Altica quadrimaculata.* Oliv. *Ent.* v, 93, 673, 6, t. i, f. 6.Length of the body  $3\frac{1}{4}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Very near related to *Galleruca quadrimaculata* F. Body long, glossy, reddish-yellow: posterior part of the head black, a cross impressed between the eyes; antennæ dusky with the four first joints rufescent: prothorax impunctured, transversely subimpressed behind, sides margined: elytra very minutely and lightly punctured with punctures just visible under a good lens; at the base of each elytrum nearest the suture is a roundish black spot, and another large oblong one extends from above the middle towards the apex: posterior thighs a little incrassated; tarsi dusky especially at the apex; medipectus and postpectus black.

This species forms a link between the *Halticidæ* and *Gallerucidæ*: it is clearly the *Altica quadrimaculata* of Olivier, and may be regarded as the American representative of *Galleruca quadrimaculata* F. from which it differs principally in the colour of its antennæ and its incrassated posterior thighs.

(293) 2. \* GALLERUCA CANADENSIS. *Canadian Galleruca.*

*G. (Canadensis) sordide rufa, pubescens; antennis nigris basi rufescentibus; capite puncto postico, prothorace tribus transverse positus, elytris vitta laterali suturaque, nigris.*

Canadian Galleruca, dirty-rufous, downy; antennæ black, rufescent at the base, head with a dot behind, prothorax with three placed transversely, elytra with a lateral stripe and the suture, all black.

Length of the body 4 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body elongate, hairy with short decumbent cinereous hairs or down, dirty-rufous, underneath black. Head with a black vertical spot; six last joints of the antennæ black, the others, except the scape, rufous black at the tip; scape rufous, black above: prothorax transversely impressed, sides posteriorly oblique with a slight sinus; three equidistant irregular black spots or dots placed transversely on the disk: the two elytra taken together have three black stripes, the intermediate or sutural one being common to both, and converging with the lateral ones at the tip: anus obscurely rufous.

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\*\* Breviores.

(294) 3. GALLERUCA SAGITTARIÆ. (Gyllenhal.) *Arrow-head Galleruca.*

*Galleruca Sagittariæ.* Gyll. *Ins. Succ.* iii, 511, 8.

Length of the body  $2\frac{3}{4}$  lines.

Several specimens taken in Lat. 54°. Taken also by Dr. Bigsby in Canada.

## DESCRIPTION.

Body brown, a little downy, not glossy. Mouth dirty-yellow: prothorax transverse, impressed, reddish-yellow, with three black nearly confluent spots: scutellum subquadrangular, truncated at the apex: elytra grossly but not thickly punctured; suture and lateral margin paler than the rest of the elytrum: anus and legs reddish-yellow; tarsi darker.

VARIETY B. With the base of the antennæ yellowish underneath, the black spots on the prothorax distinct, and the elytra entirely of a brownish-yellow.

(295) 4. \* GALLERUCA BILINEATA. *Bilineate Galleruca.*

*G. (bilineata) subpubescens, subtus nigra, supra cum pedibus fusco-rufa: prothorace nigro indistincte maculoso: elytris lineis duabus subelevatis approximatis nigricantibus.*

Bilineate Galleruca, subpubescent, black underneath, above, with the legs, brownish-red: prothorax indistinctly spotted with black: elytra with two somewhat elevated approximated blackish lines.

Length of the body 2 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Nearly related to the preceding species, but smaller, the whole of the head is rufous, the joints of the antennæ are shorter: the prothorax is longer in proportion to its width: and the elytra, nearer the suture than the lateral margin, have two somewhat elevated approximated blackish ridges, the interior one being the shortest and extending from near the middle to the base, and the other reaching neither base nor apex.

(296) 5. \* GALLERUCA MARGINELLA. *Bordered Galleruca.*

*G. (marginella) atra, prothorace canaliculato, subtestaceo, nigro maculato; elytris margine laterali pallide testaceo.*

Bordered Galleruca, very black, prothorax channelled, subtestaceous spotted with black; elytra with the lateral margin pale testaceous.

Length of the body 3 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body very black, a little downy. Mouth and base of the first joint of the antennæ subtestaceous or reddish-yellow: prothorax wider than long, impressed and confluent punctured on each side, with a longitudinal dorsal channel; behind the margin has a slight sinus; reddish-yellow with three black spots, the intermediate one being the smallest; elytra grossly and thickly punctured; lateral margin and apex reddish-yellow: legs dusky-yellow; last ventral segment of the abdomen yellow and deeply emarginate.

Having described the British American insects, as far as collected by Dr. Richardson, Dr. Bigsby, &c. belonging to the second tribe of Latreille's *Cyclica*, to which we gained an approach from the *Rhynchophora*, we must now retrace our steps, and going back to the *Lepturidæ*, enter from them to his *Eupoda*, and so proceed to his first tribe of *Cyclica*.

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ii. EUPODA. Lat.

Family SAGRIDÆ. *Sagridans*.

CXVIII. Genus ORSODACNA. Lat.

(297) 1. \* ORSODACNA TIBIALIS. *Yellow-shanked Orsodacna*.

*O. (tibialis) picea, subtus piloso-incana, supra punctatissima, femoribus basi tibiisque flavis.*

Yellow-shanked Orsodacna, piceous, underneath covered with hoary pile, thighs at the base and tibiæ yellow.

Length of the body  $2\frac{2}{3}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house.

DESCRIPTION.

Body piceous; underneath hoary with decumbent hairs; above naked, glossy, thickly punctured. Palpi and two last joints of the antennæ obscurely rufous; front between the eyes with a transverse levigated elevation: prothorax longer than wide, constricted at the base: lateral margin and epipleuræ or side-covers of the elytra, except at the base, yellowish-red: thighs, at the base, and tibiæ reddish-yellow, the four posterior tibiæ darker at the apex.

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(298) 2. \* ORSODACNA CHILDRENI. *Children's Orsodacna*.

*O. (Childreni) flavescens, occipite postpectore abdomineque, nigris; elytris pallidis sutura, vitta laterali, fascia angulata basi que nigris.*

Children's Orsodacna, yellowish, occiput, postpectus, and abdomen black; elytra pallid with the suture, a marginal stripe, an angular band, and the base black.

PLATE VII, FIG. 6.

Length of the body  $2\frac{3}{4}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body above punctured, naked. Head and its organs yellow, with the eyes, occiput, and apex of the mandibles black; a levigated transverse elevation of the front, as in the preceding species: prothorax longer than wide, constricted at the base, with an impression in the middle, pale-yellow, disk embrowned: scutellum rufous: elytra rather paler than the prothorax, with a stripe adjoining the lateral margin, an angular band beyond the middle and the base, black: antepectus, anus, and legs, yellow, rest of the underside of the body is black, and hoary with decumbent white hairs.

Family DONACIADÆ. *Donaciadans.*

CXIX. Genus HÆMONIA. Meg.

(299) 1. \* HÆMONIA NIGRICORNIS. *Black-horned Hæmonia.*

*H. (nigricornis) lutea*; antennis, pectore, abdominisque basi, nigris; prothorace canaliculato, subquadrato, medio constricto; elytris puncto-striatis, apice bispinosis, interiori brevi.

Black-horned Hæmonia, luteous: antennæ, breast, and base of the abdomen black; prothorax channelled, subquadrangular, constricted in the middle; elytra punctured in rows, armed at the extremity with two spines, the innermost one short.

Length of the body  $3\frac{2}{3}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

This species is considerably larger than *H. Equiseti* and *Zosteræ*, from which it is perfectly distinct. Body luteous above and glossy; underneath it is covered with a thick coat of pale, decumbent, rather silky, hairs with somewhat of a golden splendor, if these are rubbed off, the colour of the breast and basal abdominal segment is black. Head hairy, dusky, with a levigated naked testaceous longitudinal elevation between the eyes; antennæ black, robust, very little longer than the prothorax; prothorax subquadrangular with prominent anterior and posterior angles making it appear constricted in the middle, it is channelled with an irregular discoidal impression on each side; a few large dusky punctures are observable where the channel terminates: elytra with ten equidistant rows of large punctures which converge at the apex; besides these there is an abbreviated row at the base next the suture, as in many *Harpalidæ*, &c. the apex of the elytra terminates in two teeth or spines; the inner one short and dentiform, the outer one long and spiniform: legs and anal portion of the abdomen yellow, the former with all their articulations dusky at the extremity.

The sculpture of the elytra in this species much resembles that of another aquatic genus *Halipus*, Lat.

CXX. Genus DONACIA. Fab. Hoppe.

- \* Elytra rounded at the apex.
  - a Posterior thighs unarmed.
  - b \_\_\_\_\_ armed with one tooth.
  - c \_\_\_\_\_ two teeth.
  - \*\* Elytra truncated at the apex.
- 

\* a.

(300) 1. \* DONACIA FEMORALIS. *Femoral Donacia.*

*D. (femoralis) viridi-ænea, aurata; antennis, tibiis, tarsis, femoribusque basi, testaceis; prothorace punctulatissimo, postice impresso, antice prominentius tuberculato.*

Femoral Donacia, green-bronzed, gilded; antennæ, tibiæ, tarsi, and base of the thighs testaceous, very minutely and thickly punctured, impressed posteriorly, anteriorly more prominently tuberculated.

Length of the body  $3\frac{1}{4}$  lines.

Taken in Nova Scotia by Dr. Mac Culloch.

DESCRIPTION.

Body bronzed, gilded, with a greenish tint, very minutely and thickly punctured, not conspicuously hairy underneath. Frontal channel slight; antennæ, except the scape which is bronzed, and mouth rufous; prothorax with an impression above the scutellum; anterior tubercles more than usually prominent: scutellum rather large: elytra with single slight anterior impression adjoining the suture: legs rufous, but the thighs, which are much incrassated, except the base and summit, are green-bronzed; posterior thigh without any tooth: abdomen as in the preceding species.

This species seems nearly related to *Donacia pusilla* Say.<sup>1</sup>

b.

(301) 2. \* DONACIA FLAVIPES. *Yellow-legged Donacia.*

*D. (flavipes) cupreo-aurata; antennis pedibusque testaceis; prothorace subelongato, subtuberculato, lutiis canaliculato, varie et confertim ruguloso.*

Yellow-legged Donacia, copper-gilded: antennæ and legs testaceous; prothorax subelongated, subtuberculated, rather widely channelled; variously, thickly, and minutely wrinkled.

Length of the body 4 lines.

A single specimen taken in Lat. 65.

<sup>1</sup> *Journ. Acad. Nat. Sc. Philad.* v, 293, 4.

## DESCRIPTION.

Body bronzed-copper with a golden lustre; clothed below with very short, somewhat silvery, decumbent hairs, the metallic splendor of the body being visible through them. Head thickly, minutely, and confluent punctured or wrinkled, channelled between the eyes: antennæ testaceous, longer than the prothorax: prothorax subquadrangular, longer than usual in the genus, widely channelled, very minutely, thickly, and confluent punctured and wrinkled; anterior tubercles large and not prominent: elytra with two impressions adjoining the suture, elevated at the base: legs testaceous.

Very nearly related to *D. discolor* Hoppe, Marsh, &c. but quite distinct.

(302) 3. \* DONACIA AFFINIS. *Kindred Donacia.*

*D. (affinis) cuprea, valde aurata: antennis, ore, pedibus, abdomine segmentis apice, anoque, testaceis: prothoracc punctato; elytris apud suturam semel leviter impressis.*

Kindred Donacia, copper, much gilded: antennæ, mouth, legs, segments of the abdomen at the apex, and anus. testaceous; elytra with a single light impression at the suture.

Length of the body  $3\frac{3}{4}$  lines.

Taken by Dr. Mac Culloch in Nova Scotia.

## DESCRIPTION.

Body minutely punctured, copper-coloured brilliant with the splendor of gold; underneath very slightly hairy. Head channelled between the eyes; antennæ and mouth testaceous: prothorax widest anteriorly, channelled, punctured but not thickly, lateral anterior tubercles levigated: scutellum small: elytra with a single impression, not far from the base, adjoining the suture; base elevated: margin of the ventral segments of the abdomen of a fine bright, the anus of a deeper, orange: legs testaceous.

Very near *D. flavipes*, but the sculpture of the prothorax, the impressions of the elytra, and the colour of the underside of the abdomen are different. It differs from *D. discolor* in having the prothorax much more thinly punctured, the anterior tubercles, which in that species are near obsolete, more prominent, and the scutellum much smaller.

(303) 4. \* DONACIA EMARGINATA. *Emarginate Donacia.*

*D. (emarginata) atro-cærulea, subtus argenteo-sericea: elytris impressis; podice emarginato.*

Emarginate Donacia, black-blue, underneath with silver pile: elytra impressed: podex notched.

Length of the body  $3\frac{3}{8}$  lines.

Taken with the preceding.



## DESCRIPTION.

Body black-blue, clothed underneath with pile, in certain lights, glittering like silver. Antennæ black: tubercles of the prothorax prominent: elytra with an impression near the suture: last dorsal segment of the abdomen emarginate: thighs very thick, bronzed, posterior one with a stout tooth.

This species comes very near *D. sericea*, but it is sufficiently distinguished by its deeply notched podex, and the silver pile that cloaths its body underneath, which in that species has a golden lustre.

c.

(304) 5. \* DONACIA PROXIMA. *Proximate Donacia.*

*D. (proxima) femoribus bidentatis, dente altero minuto; supra atro-violacea nitida, capite subæneo; elytris punctis viridi-inauratis; subtus holosericeo-argentea.*

Proximate Donacia, thighs bidentate with one tooth minute, above dark violet, glossy; head rather bronzed: punctures of the elytra green-gilt: body underneath covered with a satin silver pile.

Length of the body 5 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body a little flattened, covered underneath with a dense coat of glittering silver pile resembling satin. Head a little bronzed, channelled between the eyes, minutely punctured; palpi testaceous; antennæ entirely black: prothorax in the disk dark violet and channelled, sides bronzed and impressed; anterior tubercles not prominent: scutellum bronzed: elytra nearly black with a slight tint of violet, punctures green-gilt, interstices of the rows not wrinkled; an anterior impression near the suture; rounded at the apex: posterior legs long, with thighs somewhat curved, attenuated at the base, armed at the apex with two teeth placed consecutively, the first long, slender, and acute; the last wide, short, and denticulated posteriorly.

This species is nearly related to *D. crassipes* Fab. but the antennæ and the legs are entirely black, the teeth on the posterior thighs are not equal.

\*\*.

(305) 6. \* DONACIA CUPREA. *Copper-coloured Donacia.*

*D. (cuprea) supra cuprea, nitida; subtus ex pube densa cinerea; antennis nigris; pedibus obscure rufis, femoribus posticis unidentatis; prothorace subtransverso.*

Copper-coloured Donacia, above copper-coloured, glossy; underneath with a thick coat of cinereous pile; antennæ black; legs obscurely rufous, posterior thighs unidentate; prothorax subtransverse.

Length of the body  $4\frac{1}{2}$  lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body above copper-coloured, glossy; underneath covered with a thick coat of decumbent pile of a cinerous colour, glittering in certain lights. Head downy, channelled; mouth and palpi rufous; mandibles and antennæ black: prothorax rather wider than long, very minutely, thickly and confluent punctured and wrinkled; channelled, with a pair of impressions on each side, anterior tubercles not prominent: scutellum downy: elytra very grossly punctured in rows; a single anterior impression near the suture; truncated at the apex: three intermediate ventral segments of the abdomen have a yellow margin: legs obscurely rufous; thighs bronzed in the middle; posterior thighs with a minute tooth near the apex.

(306) 7. \* DONACIA HIRTICOLLIS. *Hairy-necked Donacia.*

*D. (hirticollis) pubescens, subtus holosericeo-argentea; elytris glabris, atris; striarum punctis viridi-inauratis; femoribus posticis unidentatis.*

Hairy-necked *Donacia*, downy, satiny, underneath and silvery; elytra naked, black, with the punctures of the rows green gilt; posterior thighs unidentate.

Length of the body  $3\frac{1}{2}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body underneath covered with a thick coat of decumbent pile resembling satin and shining like silver. Head hoary from inconspicuous hairs, most minutely and confluent punctured with a slight interocular channel with an obtuse ridge on each side; antennæ with the second and third joints equal in length; labrum glittering with silver pile: prothorax longer than wide, hoary from inconspicuous down, most minutely and confluent punctured, channelled, sides subimpressed, anterior tubercles flat: scutellum large, levigated: elytra black, punctured in rows, whose interstices are wrinkled; posterior thighs with a single short obtusangular tooth.

This pretty species comes near *D. bidens* Oliv. which I always find on *Potamogeton natans*, but it is sufficiently distinguished by its black thorax hoary from down, and legs without any red.

(307) 8. DONACIA ÆQUALIS. *Equal Donacia.*

*Donacia æqualis.* Say. *Journ. Nat. Sc. Philad.* vi, 428?

Length of the body 4— $4\frac{1}{2}$  lines.

Many taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body underneath covered with a thick coat of silver pile as in the preceding species. Head bronzed, hoary from cinereous down, minutely and confluent punctured, channelled between the eyes with a longitudinal obtuse ridge on each side the channel; antennæ black, bronzed at the base, second and third joints equal in length; mouth piceous: prothorax bronzed and gilded, rather longer than wide, thickly and confluent punctured and wrinkled; channelled; sides longitudinally sub-impressed; anterior tubercles obsolete: scutellum hoary from down: elytra bronzed, gilded, punctured in rows except at the apex where the punctures are confluent, two impressions adjoining the suture, and one in the middle of the base; apex truncated: ventral segments of the abdomen, the last excepted, with a bright orange margin: posterior thighs with a stout short tooth.

N. B. In the male the ventral segments are without the orange margin.

VARIETY B. Prothorax bright copper, elytra black-bronzed.

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Family HISPIDÆ. *Hispidans*.

CXXI. Genus HISPÆ. Linn.

xxvi. \* Subgenus ANOPLITIS. Kirb.

*Body* without spines; third joint of the *antennæ* not much longer than the second: *scape* unarmed.

In the genuine *Hispa*, of which *H. atra* may be regarded as the type, the structure of the antennæ is very different from that both of the other spinose ones, and of those that are without spines; the four first joints terminating externally in a spine, that of the scape being longer than the rest and not being a prolongation of the external angle. In *H. erinacea*, and several other American species, the third joint is very long, in *Anoplitis* it is scarcely longer than the second, as in *Hispa atra*, but the four first joints are without the spine. We have therefore here types of three subdivisions, viz. *Hispa* proper, *Anoplitis*, and *Lobacantha*, as I would denominate *H. erinacea* and affinities, from the lobes crowned with spines which project from the elytra.

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(308) 1. HISPÆ (*Anoplitis*) BICOLOR. (Olivier.) *Two-coloured H. Anoplitis*.

*Hispa bicolor*. Oliv. *Ent.* vi, 95, 774, 27, t. ii, f. 27; *Encyclop. Ins.* vii, 96, 5.

Length of the body  $3\frac{3}{4}$  lines.

Taken in Canada by Dr. Bigsby. Mr. Francillon had specimens from Georgia.  
Oliv.

## DESCRIPTION.

Body linear, naked. Head black, smooth, channelled between the eyes; antennæ robust, scarcely longer than the prothorax, black; eyes large, dark-brown: prothorax transverse, narrowest anteriorly, red, with four dusky spots placed transversely, grossly punctured, posterior angles produced, behind with a slight sinus on each side; space above the scutellum truncate: scutellum dull-red: elytra linear, black, three-ridged, with an abbreviated ridge towards the apex between the second and third; ridges elevated; interstices with a double series of large and very close punctures; between the second and third at the base and apex the series is quadruple, in the middle triple; lateral margin and apex serrulate: underside of the body blood-red: legs black, base of the thighs red.

We now come to a tribe of beetles which though generally regarded as nearly related to the *Cassidiadæ*, *Chrysomelidæ*, and other phytiphagous tribes are of predaceous habits, subsisting altogether upon *Aphides*. In some respects they appear related to the *Anisotomidæ* and some *Nitidulidæ*,<sup>2</sup> and their natural place is not yet satisfactorily ascertained.

## XI. APHIDIPHAGA. Lat.

Family COCCINELLIDÆ. *Coccinellidans*.

CXXII. Genus COCCINELLA. Linn.

\* Body oblong, subdepressed.

1 Spotted with black.

(309) 1. \* COCCINELLA EPISCOPALIS. *Episcopal Coccinella*.

*C. (episcopalis) atra, angusta; pedibus testaceis: fronte lineolis tribus pallidis signata; prothorace coleoptris que pallide luteis; vittis duabus communibus atris hamatis, pedum episcopale referentibus.*

Episcopal Coccinella, black, narrow; legs testaceous: forehead marked with three pale lines: prothorax and elytra, taken together, pale-yellow, with two black, hooked stripes, common to both, resembling a bishop's crosier.

PLATE V, FIG. 4.

Length of the body 2 lines.

Taken in the Journey from New York to Cumberland-house.

<sup>2</sup> *Nitidula hemiphærica* Lin. *Trans.* xii, 395, 28, *Hemitoma* K. MS.

## DESCRIPTION.

Body narrow, nearly linear, having at first sight the aspect of a *Haltica*, underneath black. Head black with three oblong pale yellow spots, two adjoining the eyes on their inner side, and one placed backwards in the vertex; mouth, antennæ, and palpi rufous: prothorax and both elytra taken together, pale yellow with two black stripes, common to both, resembling a bishop's crosier, the crook being on the thorax and the stalk on the elytra; suture of the latter black except at the tip: legs pale testaceous: anus, sides of the abdomen, and tips of the ventral segment, except the basal one, pale.

(310) 2. COCCINELLA TREDECIM-PUNCTATA. *Thirteen-dotted Coccinella.*

*Coccinella tredecim-punctata.* Linn. *Fn. Suec.* 481; *Syst. Nat.* ii, 582, 20. Fab. *Syst. Ent.* 83, 25; *Syst. Eleuth.* i, 369, 76. Payk. *Fn. Suec.* ii, 42, 44. Gyll. *Ent. Suec.* iv, 207, 26. Marsh. *Ent. Brit.* i, 156, 19. Illig. *Kaf. Preuss.* i, 425, 14,  $\gamma$ . Herbst. *Ins.* v, 323, 79, t. 57, 11; *Arch.* 43, 8. Panz. *Ent. Germ.* i, 139, 27. Scop. *Ent. Car.* 76, 238. Ross. *Fn. Etrusc.* i, 63, 157. De Geer *Ins.* v, 375, 9. Ced. *Fn. Ingr.* 160. Thunb. *Nov. Act. Ups.* v, 104, 29. Müll. *Zool. Dan. Pr.* 66, 629. Schrank. *Enum.* 55, 102. Vill. *Ent.* i, 101, 18. Oliv. *Ins.* vi, 98, 1023, 53, t. vi, f. 79. Brahm. *Ins. Kal.* 78, 251. Geoff. *Ins.* i, 324, 7. Schæff. *Icon. t.* xlviii, f. 6. H—r. *Ins.* 161, 80. Reaum. *Ins.* iii, t. xxxi, f. 19; *Acta. Nidr.* iv, 7. Müll. *Fn. Frid.* 6, 53. Stew. *Elem.* ii, 43. Don. *Brit. Ins.* xi, t. 362, f. 2. Hav. *Ent. Trans.* i, 276. Step. *Illustr. Mandib.* iv, 388, 28.

Length of the body 3 lines.

Several specimens taken in Lat. 54°.

## DESCRIPTION.

Body oblong, black, lightly and minutely punctured; underneath slightly downy. Mouth and its organs pale rufous; nose white, whiteness with a posterior central lobe; antennæ rufous: prothorax white with a large discoidal spot falling short of the anterior margin, where it is truncated; sides lobed, besides which there is a black dot on each side connected with the above spot: elytra reddish-yellow with six largish black dots, namely 1, 2, 2, 1, and one at the scutellum common to both elytra; the first marginal dot is ovate, the rest approaching to round: the tibiæ and tarsi are testaceous: there are two transverse white spots on each side the breast, between the four posterior legs; and four triangular pale ones on each side the abdomen.

VARIETY B. Nose rufous, with a parallegrammiscal white spot between the antennæ.

(311) 3. COCCINELLA TRIDENS. *Trident Coccinella.*

*C. (tridens) atra, fronte antice tridente, prothorace margine antica et laterali, maculaque quadrata postica, albis; coleoptris luteis, maculis septem difformibus atris.*

Trident *Coccinella*, very black, anterior trident of the front; anterior and lateral margin and square posterior spot of the prothorax, white; elytra taken together luteous, with seven diversely shaped black spots.

Length of the body  $2\frac{1}{4}$  lines.

Two specimens taken in the Expedition.

## DESCRIPTION.

Body rather oblong, very minutely punctured; black underneath, with two distant white spots on the breast, and three contiguous ones on each side of the abdomen. Head black with a transverse white band or trident between the eyes, tricuspidate both anteriorly and posteriorly; the intermediate posterior lobe the longest: prothorax white with a large bipartite black spot, each lobe being trilobed with rounded lobes resembling a trefoil leaf and connected with the other by a transverse band: elytra pale reddish-yellow; with three black spots and one at the scutellum common to both elytra, placed 2, 1, 1; the scutellar spot somewhat bell-shaped, the humeral one roundish, the intermediate one nearly kidney-shaped, and that nearest the apex rather crescent-shaped.

VARIETY B. Frontal band replaced by three white spots, the intermediate the longest and linear. This species seems to come near *C. Parenthesis* Say, but still appears distinct.

\*\* Body hemispherical.

(312) 4. \* *COCCINELLA QUINQUE-SIGNATA*. *Five-signed Coccinella*.

*C. (quinque-signata) atra, oblongo-hemisphærica: coleoptris fulvis: fascia communi baseos, duabus abbreviatis disci, punctisque duobus apicis, nigris; frontis macula, angulisque thoracis anticis, albis.*

Five-signed Coccinella, black, between oblong and hemispherical; elytra taken together tawny, with a basilar band common to both, two abbreviated ones and two dots near the apex, black; spot of the front and anterior angles of the prothorax white.

PLATE VII, FIG. 1.

Length of the body 3 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body oblong-hemispherical, very minutely and thickly punctured; underneath black and a little downy. Head black with an acute white spot in the forehead between the eyes; antennæ obscurely rufous, dusky at the base and tip: prothorax black, anterior angles and intermediate streak, white: elytra tawny-yellow with an abbreviated band common to both at the base, an oblique discoidal abbreviated band and apical dot, black; four distant lateral triangular white spots mark the breast.

(313) 5. \* *COCCINELLA QUINQUE-NOTATA*. *Five-marked Coccinella*.

*C. (quinque-notata) atra hemisphærica, coleoptris rufo-fulvis, fascia communi baseos, et quatuor discoidalibus, abbreviatis, nigris; fronte maculis duabus, prothoraceque angulis anticis pallide luteis.*

Five-marked Coccinella, black, hemispherical; elytra tawny-rufous, with a basilar band common to both, and four discoidal ones, abbreviated, black; front with two spots, and prothorax with the anterior angles, pale-yellow.

Length of the body  $3\frac{1}{2}$  lines.

A single specimen taken in Lat. 54°. Taken also by Dr. Bigsby in Canada.

## DESCRIPTION.

Very like the last, but shorter and more hemispherical. Two subtriangular transverse spots between the eyes, apex of the nose, dot at the sinus of the eyes, and anterior angles of the prothorax whitish-yellow; basal band of the elytra broadest at the suture, the two other black spots are of equal size and placed transversely, and each forms an abbreviated band, falling far short of the suture and the lateral margin, so as to be scarcely more than two transverse spots; scutellar angle of the elytra paler than the rest: the breast has no white spots. In other respects it is exactly like *C. 5-signata*.

(314) 6. \* COCCINELLA TRICUSPIS. *Tricuspidate Coccinella*.

*C. (tricuspis) atra, coleoptris fulvis, fascia communi baseos antice tricuspidi, et duabus apicis abbreviatis, atris; capite punctis duobus, prothoraceque margine antico, angulisque, flavis.*

Tricuspidate Coccinella, black; elytra taken together tawny, with a basilar tricuspidate band common to both, and two abbreviated ones at their apex: prothorax with the anterior margin and angles yellow.

Length of the body  $2\frac{1}{4}$  lines.

Several specimens taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black, punctured. Head with two irregular transverse yellow spots between the eyes; antennæ pale rufous, black at the tip: prothorax with the anterior angles and a slender portion of the anterior margin yellow, the black part forming a large three-lobed spot; the middle lobe being the longest and truncated, the lateral ones shorter and rounded; elytra tawny-rufous, paler and almost yellow at the base and sides, where there is a black band common to both elytra not reaching the lateral margin, which anteriorly has a double sinus so as to form three triangular lobes or points in the band; towards the apex of each elytrum is another irregular black band, which reaches neither the suture nor the margin.

(315) 7. \* COCCINELLA INCARNATA. *Flesh-coloured Coccinella*.

*C. (incarnata) supra incarnata; prothorace maculis duabus magnis transversis nigris; coleoptris maculis undecim, tribus communibus, nigris; tarsis abdominisque margine rufescentibus.*

Flesh-coloured Coccinella, above flesh-coloured; prothorax with two large transverse black spots: elytra taken together with eleven black spots, three of which are common to both.

PLATE VII, FIG. 7.

Length of the body 2 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body black. Mouth and its organs and antennæ reddish : prothorax flesh-coloured with two large subquadrangular black spots, separated by a narrow flesh-coloured stripe, which occupy almost all the disk : elytra flesh-coloured, taken together with eleven roundish rather large black spots, three of which are common to both elytra, viz. 3, 4, 3, 1, the common spot at the apex is transverse : legs black with the base of the thighs and tibiæ, tarsi, sides of the abdomen, and anus testaceous.

This species seems to come near *C. borealis* of Thunberg, but it differs in colour and the number and disposition of the spots.

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## XII. HETEROMERA. Geoff. Lat.

I have deferred the description of the *Heteromera* till now, because one of that subdivision, *Meloe*, appears evidently to be one of the links that connect the *Coleoptera* with the *Orthoptera*; yet, as was long since observed,<sup>3</sup> the predaceous genus *Manticora* seems to present some signs of a leading off towards, to the first tribe of the *Heteromera* the *Melasoma* of Latreille.

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### i. MELASOMA. Lat.

#### Family PIMELIADÆ. *Pimeliadans*.

#### CXXIII. Genus PIMELIA. Fab.

#### (316) 1. \* PIMELIA ALTERNATA. *Alternating Pimelia*.

*P. (alternata) atra, obscura; prothorace punctato lacunoso; elytris tricostratis: costis subtuberculatis: interstitiis serie punctorum elevatorum.*

Alternating *Pimelia*, black, obscure; prothorax punctured, with some shallow impressions: elytra three-ribbed, ribs subtuberculate; interstices with a series of granular elevations.

PLATE V, FIG. 9.

Length of the body 6½ lines.

A single specimen taken at Carlton-house, Lat. 53°. in April.

<sup>3</sup> See above, p. 4.



## DESCRIPTION.

Body dull-black, oblong, naked. Head minutely punctured; antennæ shorter than the prothorax: prothorax widest in the middle, subquadrangular with the sides rounded, minutely but not very thickly punctured, with some slight impressions in the disk: scutellum short, wide, rounded at the apex: elytra with six elevated granulated lines alternately more pronounced, besides the suture and marginal one separating the epipleura, which meet just above the apex: epipleura granulated: posterior legs much longer than the four anterior.

Mr. Say says of his *P. rotunda*, that it was the first of that genus found on the New Continent; that above described furnishes therefore a valuable addition to the American insect Fauna. Africa appears to be the metropolis of the genus, though several species have been found in Russian Tartary.

Family TENEBRIONIDÆ. *Tenebrionidans*.

CXXIV. Genus UPIS. Fab.

(317) I. UPIS CERAMBOIDES. *Ceramboïd Upis*.

*Upis ceramboides*. Fab. *Ent. Syst.* ii, 515, 1; *Syst. Eleuth.* ii, 584, 1. Payk. *Fn. Suec.* iii, 356, 1. Gyll. *Ins. Suec.* ii, 594, 1. Herbst. *Ins.* vii, 237, 5, t. cx, f. 5. Lat. *Hist. Nat.* x, 296, t. viii, f. 7.  
*Attelabus ceramboides*. Linn. *Fn. Suec.* 643; *Syst. Nat.* ii, 621, 12. Oliv. *Ent.* i, 220, 9.  
*Tenebrio ceramboides*. Oliv. *Ent.* iii, 57, 9, 8, t. i, f. 7. Lat. *Gen.* ii, 171, 3.  
 ——— *variolosus*. De Geer. *Ins.* v, 32, 2, t. 2, f. 1—3.  
*Spondylis ceramboides*. Fab. *Mant.* i, 127, 2.  
*Curculio maximus*. Udd. *N. Ins. Sp.* 26, t. i, f. 1.

Length of the body 8—8½ lines.

A pair taken, in the month of April, in Lat. 65°. Taken also in Canada by Dr. Bigsby.

## DESCRIPTION.

Body dull-black, narrow, naked, minutely punctured. Head nearly round, depressed, porrected; eyes lateral, kidney-shaped; nose circumscribed by the segment of a circle; antennæ a little shorter than the prothorax, joints obconical, four last lentile-shaped: prothorax a little wider than the head, oblong with rounded sides: scutellum rounded at the apex: elytra taken together wider than the prothorax, a little dilated beyond the middle, and then sloping to the apex, which is acute; very unequal with numerous irregular deep impressions and rugosities, variously separated by a number of elevated lines or obtuse ridges running confusedly in various directions: legs long; thighs incrassated; tibiæ and tarsi slender.

This insect is stated by Fabricius to inhabit a particular kind of *Boletus* (*B. fomentarius* L.): Gyllenhal says that it inhabits perennial fungi growing upon trees, particularly of the genus *Betula*. It has not yet been discovered in Britain; but if attention be directed to these fungi it may very likely at length make its appearance in the list of British insects.

## CXXV. Genus TENEBRIO. Linn.

(318) 1. TENEBRIO MOLITOR. *Meal-worm Tenebrio.*

*Tenebrio Molitor.* Linn. *Fn. Suec.* 815; *Syst. Nat.* ii, 672, 2. Fab. *Syst. Ent.* 255, 2; *Syst. Eleuth.* i, 145, 8. Payk. *Fn. Suec.* i, 89, 3. Gyll. *Ins. Suec.* ii, 590, 1. Marsh. *Ent. Brit.* i, 474, 1. Vill. *Ent.* i, 385, 1. Müll. *Fn. Frid.* 21, 213; *Zool. Dan.* 74, 794. Mart. *Col. t.* xxxix, f. 2. Berk. *Syn.* i, 108. Stew. *Elem.* ii, 83. Shaw. *Gen. Zool.* vi, 102, t. xxx. Leach. *Ed. Enc.* ix, 102. Sam. *Comp.* 59, t. iv, f. 1. Illig. *Kaf. Preuss.* i, 113, 1. Oliv. *Ent.* iii, 57, 12, 13, t. i, f. 12. Herbst. *Ins.* vii, 240, 1, t. cxi, f. 1. Panz. *Fn. Germ.* xliii, t. 12; *Ent. Germ.* i, 40, 3. Ross. *Fn. Etrusc.* i, 231, 577. Petagn. *Ins. Cal.* 26, 128. Scop. *Carn.* 259. De Geer *Ins.* v, 34, 3, t. ii, f. 4. Ced. *Fn. Ingr.* 36. Poss. *Ins. Beytr.* i, 25, t. iii, f. 1—14. Blum. *Hand. Ed.* 7, 335, 1. Fisch. *Nat.* v, i, 138, 290; *Act. Ups.* iv, 1736, 19, 1. Roem. *Ins. t.* xxxiv, f. 31. Frisch. *Ins.* viii, t. 1. Sulz. *Gesch. t.* vii, f. 52. Geoff. *Ins.* i, 342, 6. Schæff. *Icon. t.* lxvi, f. 1. H—r. Schmett 187. Lat. *Gen.* ii, 179, 2; *N. Dict. D'H. N.* xxxiii, 44, t. r. 1, f. 10; *Crust. Arachn. et Ins.* ii, 25. Steph. *Illustr. Mandib.* v, 8, 1.

Length of the body  $7\frac{1}{2}$  lines.

Taken in Nova Scotia by Captain Hall.

## DESCRIPTION.

Body oblong-linear, minutely and numerously punctured, a little glossy, naked, above piceous, underneath rufo-piceous. Head uneven, nearly orbicular; anteriorly rufo-piceous; antennæ and palpi rufo-piceous: prothorax transverse, sides rounded with a reflexed margin; posterior margin wavy, just above which, on each side, is a roundish impression; posterior angles acuminate: scutellum transverse, subacuminate: elytra scarcely wider than the prothorax, slightly furrowed, furrows punctured with the interstices transversely somewhat wrinkled, and most numerously and minutely punctured: shoulders short, compressed and incrassated; cubit curved.

The grub of this common beetle may very possibly have been originally imported into North America from Europe in flour.

(319) 2. TENEBRIO PENNSYLVANICUS. *Pennsylvanian Tenebrio.*

*Tenebrio pennsylvanicus.* Knoch. *Neue. Beytr.* 167, 2.

Length of the body 8—9 lines.

Several specimens taken in the Expedition in Lat. 54°.; it was also sent me by Dr. Harris.

Knoch says that it is found under bark.

## DESCRIPTION.

Body long, rather widest towards the anus, black, minutely punctured, naked, not glossy. Head somewhat quadrangular, longer than in the preceding species, uneven: prothorax nearly square with a minute impression above the scutellum; posterior margin wavy; lateral very slender and a little rounded: scutellum subtriangular: elytra with nine rows, including the marginal one, of punctures, and an abbreviated one at the base next the suture; under a powerful lens the interstices are minutely but not thickly punctured: the shoulders are scarcely thicker than the thighs.

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ii. TAXICORNIA. Lat.

Family DIAPERIDÆ. *Diaperidans*.

CXXVI. Genus DIAPERIS. Geoff.

xxvii. \* Subgenus ARRHENOPLITA. Kirb.

*Head of the male armed with horns.*

*Diaperis hæmorrhoidalis* Payk. may be considered as the type of this subgenus, which differs from the legitimate *Diaperides* in being less convex and having the head of the male armed with two or more horns.

(320) 1. \* DIAPERIS (*Arrhenoplita*) BICORNIS. *Two-horned D. Arrhenoplita*.

*Diaperis bicornis*. Oliv. *Ent.* iii, 55, 6, 4, t. i, f. 4.

*Hispa bicornis*. Fab. *Gen. Ins. Mant.* 215, 3, 4; *Mant. Ins.* i, 47, 4. Linn. *Syst. Nat.* Gmel. 1734, 18.

Length of the body  $\left\{ \begin{array}{l} \text{Male } 1\frac{1}{3} \\ \text{Female } 2 \end{array} \right\}$  lines.

Several taken in the Route from New York to Cumberland-house.

## DESCRIPTION.

Body punctured, glossy; underneath black, above black-bronzed or green-bronzed. Head of the female transversely impressed between the eyes, unarmed; in the male just behind the eyes is a pair of long cylindrical vertical piceous horns rather paler at the apex, between which is a deep excavation; the nose also at the apex is armed with a pair of minute triangular teeth; mouth, in both sexes, rufous; antennæ black with the three first joints attenuated and rufous: prothorax transverse with the sides rounded, posteriorly obtusangular but not lobed: scutellum triangular: elytra slightly furrowed with the furrows punctured; interstices minutely punctured: anus underneath with two transverse obtuse ridges: legs rufous.

Family BOLITOPHAGIDÆ. *Bolitophagidans.*

CXXVII. Genus BOLITOPHAGUS. Illig.

(321) 1. \* BOLITOPHAGUS CORNUTUS. *Horned Bolitophagus.**Bolitophagus cornutus.* Fab. *Syst. Eleuth.* i, 112, 1.*Opatrum bifurcum.* Fab. *Ent. Syst. Suppl.* 40, 1.———— *cornutum.* Panz. *Fn. Am. Boreal. Prad. t. i, f. 5, 6.* Say, *Am. Ent.* iii, t. li.*Eledona cornuta.* Lat. *Hist. Nat.* x, 312.

Length of the body 5 lines.

Taken in Canada by Dr. Bigsby, in a *Boletus* of the birch, near Lake Huron.

## DESCRIPTION.

♀

Body oblong, black without the least gloss. Head transverse, nutant, flat, uneven; cheeks angular; antennæ with the three last joints thicker than the rest, the last being the largest: prothorax crescent-shaped; sides anteriorly expanded, toothed; posteriorly constricted with acute lateral angles; disk anteriorly elevated into a crest terminating in two rounded subtuberculated lobes; behind the crest are four obsolete subtuberculated ridges: scutellum rounded: elytra tuberculated with the tubercles arranged in rows; those next the suture and towards the apex being the largest: some irregular rows of punctures are also discernible in the interstices; upper margin of the epipleura obtusely dentated.

(322) 2. \* BOLITOPHAGUS OBCORDATUS. *Obcordate Bolitophagus.**B. (obcordatus) nigricans, prothorace obcordato, plano, inæquali: elytris fusciscentibus; antice obtuse tricarينات, postice bituberculatis; seriatim foveatis.*Obcordate *Bolitophagus*, prothorax obcordate, flat, unequal: elytra embrowned, anteriorly obtusely tricarinate, posteriorly bituberculate; deeply impressed in rows.Length of the body  $6\frac{1}{4}$  lines.

Taken in Nova Scotia by Capt. Hall.

## DESCRIPTION.

Body linear-oblong, pollinose. Head brown-black, subtriangular; labrum ciliated with yellow hairs; antennæ black-piceous, last joint smaller than the two antecedent ones, which are bigger than the rest: prothorax brown-black, obcordate with a larger anterior sinus for the head; surface flat, uneven behind from five obtuse ridges, the lateral ones abbreviated, and before from several rounded tubercles: scutellum minute: elytra embrowned with a yellowish tint from lutose scales; anteriorly

with three obtuse ridges; the interior one very short; the intermediate one discoidal, abbreviated at each end; and the exterior one reaching from the base to the apical tubercles, of which there are two much elevated, the interior one being the largest and highest; in the interstices there are four rows of deep impressions: the sides of the antepectus are verrucose: the abdomen is black-brown with luteous sides; the disk is longitudinally, densely, and thickly wrinkled, and the sides are verrucose: legs black-brown.

This species differs from the preceding one in the form of the thorax and the clava of the antennæ, and ought perhaps to form a subgenus.

iii. STENELYTRA.

Family HELOPIDÆ. *Helopidans*.

CXXVIII. Genus MERACANTHA. Kirb.

*Labrum* transverse, scarcely emarginate.

*Labium* subtriangular, longitudinally and obtusely ridged in the middle with a deep impression on each side.

*Mandibles* bidentate? at the apex.

*Maxillæ* mutilated.

*Maxillary palpi* first joint minute; second longer than the rest, clavate; third obconical; fourth very large, securiform.

*Labial palpi* broken off.

*Mentum* trapazoidal.

*Antennæ* filiform, scape incrassated; pedicel obconical; third joint longer than the rest, subcylindrical, a little incrassated at the apex; fourth shorter than the fifth, subobconical; fifth longer than the subsequent ones, elongate, obconical; 6—10 obconical, gradually decreasing in length, and the 9th and 10th in thickness; 11th ovate acute.

*Body* ovate, convex, apterous. *Head* triangular; front elevated on each side at the eyes protecting the base of the antennæ; eyes large, lateral, internally emarginate. *Prothorax* rather wider than long, narrowest anteriorly, subquadrangular; margined on the sides and anteriorly, margin very slender. *Scutellum* an obtusangled triangle. *Elytra* with the epipleura narrow, falciform; shoulders incrassated armed with a tooth; calcaria very short and scarcely visible.

This genus appears related to *Acanthopus* Megerle,<sup>3</sup> but differs in its general form and several of its characters.

<sup>3</sup> *Crustac. Arachn. et Ins.* ii, 16.

(323) 1. \* MERACANTHA CANADENSIS. *Canada Meracantha.**M. (canadensis) nigro-ænea, glabra, nitida, punctata: elytris striatis: striis punctatis; interstitiis punctulatis.*

Canada Meracantha, black-bronzed, naked, glossy, punctured; elytra furrowed, furrows punctured; interstices minutely punctured.

Length of the body 6 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black-bronzed, naked, glossy, punctured: on the upper side of the body the colour is more metallic. Head and prothorax confluent punctured, two last joints of the antennæ pale from hairs: elytra slightly furrowed, the sutural and the marginal furrows meeting at the apex and including the rest; furrows punctured; interstices very minutely and thinly punctured: sides of the abdomen longitudinally wrinkled: tooth of the shoulder short and wide, placed a little above the middle.

Family STENOCHIADÆ. *Stenochiadans.*

CXXIX. \* Genus ARTHROMACRA.

*Labrum* transverse.*Labium* dilated above the insertion of the palpi, submarginate.*Mandibles* bidentate at the apex.*Maxillæ* bilobed; lobes thick, obtuse.*Maxillary palpi* incurved, four-jointed; first joint minute; second longer than the rest, clavate; third shorter than the fourth, triangular; fourth very large, securiform, with the truncature oblique.*Labial palpi* three-jointed, last joint securiform.*Mentum* obtriangular.*Antennæ* filiform, eleven-jointed: scape short, incrassated; pedicel short, incrassated at the apex; joints 3—8 obconical, nearly twice the length of the pedicel; last joint cylindrical, downy, as long as the five antecedent ones taken together.*Body* long and slender. *Head* triangular; eyes kidney-shaped. *Prothorax* cylindrical not wider than the head. *Scutellum* rounded. *Elytra* wider than the thorax, linear. *Legs* slender; tarsi very long.This genus is sufficiently distinguished from *Stenochia*, which it a good deal resembles, by the remarkable length of the last joint of the antennæ, which occupies more than a fourth part of the whole length.

(324) I. \* ARTHROMACRA DONACIOIDES. *Donacia-like Arthromacra.*

*A. (donacioides) nigro-anea, nitida, supra punctatissima*: *antennis tarsisque fulvis, illis basi et apice, his apice, nigricantibus.*  
 Donacia-like Arthromacra, black-bronzed, glossy; above thickly punctured: antennæ and tarsi tawny; the former dusky at the base and apex, and the latter at the apex.

Length of the body 5 lines.

Taken in Canada, near lake St. Clair, by Dr. Bigsby. I received specimens also from Massachusetts from Mr. Drake.

## DESCRIPTION.

Body black-bronzed with a greenish tint, glossy, with the whole upper surface thickly and irregularly punctured; underneath, except the sides of the trunk, impunctured. Antennæ much longer than the head and prothorax, scape and pedicel dusky, 3—8 joints tawny-yellow; last joint black, downy: prothorax nearly cylindrical; elytra wider than the prothorax, obtuse at the apex: thighs a little incrassated; apex of the cubit and tarsi tawny-yellow; two last joints of the latter dusky.

This singular insect, at first sight, looks very like a *Donacia*, a resemblance merely given by its colour.

Family CISTELIDÆ. *Cistelidans.*

CXXX. Genus CISTELA. Fab.

(325) I. \* CISTELA ERYTHROPA. *Red-legged Cistela.*

*C. (erythrope) elliptica, nigra, antennis infuscatis basi, pedibusque, rufis*: *prothorace postice subtrilobo*: *elytris striatis.*  
 Red-legged Cistela, elliptical, black, base of the embrowned antennæ and legs, rufous: prothorax posteriorly obsoletely three-lobed: elytra slightly furrowed.

Length of the body 5 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body elliptical, gloss obscured, especially on the elytra, by very short decumbent hairs. Head longitudinally and slightly impressed between the eyes; antennæ longer than the prothorax, reddish brown, with the three first joints rufous: prothorax transverse, anteriorly not wider than the head, posteriorly obsoletely trilobed, and nearly as wide as the elytra; lateral angles acute: elytra slightly furrowed; furrows scarcely punctured: legs pale rufous; posterior tarsi long, embrowned.

iv. SERRIPALPIA. Lat.

Family DIRCÆIDÆ. *Dircæidans*.

CXXXI. Genus XYLITA. Payk.

(226) 1. XYLITA BUPRESTOIDES. *Buprestidan Xylita*.

*Xylita buprestoides*. Payk. *Fn. Suec.* i, 249, 1. Mc L. *Hor. Entomolog.* 1, 464, Note \*. Steph. *Illustr. Mandib.* v, 36, 1.  
*Dircæa discolor*. Fab. *Suppl.* 121, 2; *Syst. Eleuth.* ii, 89, 2. Panz. *Fn. Germ.* xvii, t. 6; *Crit. Revis.* i, 96. Dufts.  
*Fn. Austr.* ii, 264, 3. Illig. *Mag.* v, 234, 2. Lat. *Crust. Arachn. et Ins.* ii, 44.  
 ——— *lævigata*. Gyll. *Ins. Suec.* ii, 517, 1.  
*Serropalpus lævigatus*. Hell. *Act. Holm.* 1786, 318, 2. Illig. *Kaf. Preuss.* i, 131, 8.  
*Lymexylon lævigatum*. Panz. *Ent. Germ.* 206, 8; *Fn. Germ.* xxiv, t. 16.

Length of the body 3 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body narrow, black-brown, very minutely and thickly punctured, sprinkled with short decumbent pale hairs, not glossy. Head inserted; eyes hemispherical; palpi rufous; antennæ nearly as long as the prothorax, ferruginous, a little embrowned at the apex: prothorax not wider than long, anteriorly narrowest, posteriorly obsolete trilobed; sides rounded: scutellum transverse: elytra very little wider than the prothorax: tarsi ferruginous.

As Paykull was the original describer of this insect, with Mr. Mac Leay and Mr. Stephens, I have retained his name in lieu of that of Fabricius, adopted by most continental Entomologists.

v. TRACHELIDA. Lat.

Family ANTHICIDÆ. *Anthicidans*.

CXXXII. Genus NOTOXUS. Geoff.

(327) 1. NOTOXUS MONODON. *Unicorn Notoxus*.

*Notoxus Monodon*. Say, *Amer. Ent.* i, t. iv, f. inf.  
*Anthicus Monodon*. Fab. *Syst. Eleuth.* i, 289, 4.

Length of the body  $1\frac{2}{3}$  line.

A single specimen taken in Lat. 65°.



## DESCRIPTION.

Body hairy with pale hairs. Head blackish; mouth, palpi, and antennæ testaceous: prothorax testaceous; horn convex above, margin denticulated: elytra testaceous with a blackish band near the apex which rises upwards at the suture, and three blackish spots; two at the base, and one between the band and the apex, the last very faint: legs testaceous: postpectus and base of the abdomen embrowned; the remainder of the prone part of the body is testaceous.

vi. VESICANTIA. Lat.

Family CANTHARIDÆ. *Cantharidans.*

CXXXIII. Genus CANTHARIS. Geoff.

(328) 1. CANTHARIS UNICOLOR. *One-coloured Cantharis.*

*C. (unicolor) tota nigra, piloso-incana; prothorace canaliculato; antennis articulis duobus primis valde elongatis.*  
One-coloured Cantharis, all black, hoary from pile; prothorax channelled: antennæ with the two first joints very long.

Length of the body 7 lines.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, hoary from numerous decumbent white hairs: antennæ subtestaceous, a little longer than the prothorax; two first joints very long, the first curved and nearly twice the length of the second; and the second as long as the three following ones together: prothorax rather bell-shaped, channelled: wings embrowned.

This species seems to come near to the *Lytta immaculata* of Say,<sup>4</sup> but the relative lengths of the joints of the antennæ differ, the palpi of our insect are black, and it is much smaller.

CXXXIV. Genus MELOE. Linn.

This genus appears to be one of the stepping stones to the *Orthoptera*, which is proved not only by its galeate maxillæ, but, by its elytra lapping over each other, and its vertical and often inflexed head, in this respect resembling the *Blattina*.

<sup>4</sup> *Journ.* III, i, 10, 304, 8.

(329) 1. \* MELOE IMPRESSA. *Impressed Meloe.**M. (impressa) violacea; antennis irregularibus, prothorace postice longitudinaliter impresso.*

Impressed Meloe, violet-coloured: antennæ irregular: prothorax with a longitudinal posterior impression.

Length of the body  $5\frac{1}{4}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Nearly related to *Meloe violacea*, but very much smaller. Body violet-coloured. Head with scattered but not large punctures; front between the antennæ transversely and obtusely elevated; antennæ irregular: prothorax not much narrower than the head, anteriorly rounded, posteriorly narrower and emarginate, towards the base with a deepish impression, with several scattered but not large punctures, and two little transverse oblique crescents formed of punctures: elytra wrinkled: outer claws and spurs rufo-piceous, inner claws paler.

(330) 2. \* MELOE NIGRA. *Black Meloe.**M. (nigra) nigra, punctulata; antennis irregularibus, basi, tibiis, tarsisque violaceis; prothorace postice impresso.*

Black Meloe, black, minutely punctured; antennæ irregular, at the base violet-coloured, as is also the whole of the tibiæ and tarsi; prothorax impressed behind.

Length of the body 6 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Extremely similar to the preceding species, but the body is all black with no tint of violet, except the base of the antennæ below the band and the tibiæ and tarsi: the head and prothorax are more thickly punctured, and the claws and spurs are ferruginous.

## XIII. MALACODERMA. Lat.

The *Malacoderma* of Latreille by the soft substance of their elytra, and their reticulations in some species of *Lycus*, seem to make an approach to the *Orthoptera*. They appear to branch off from the Elateridans by *Campylus* to *Cebrio*, and therefore we must now be regarded as retracing our steps to take a fresh route from that family in a new direction towards the *Orthoptera*.

Family MELYRIDÆ. *Melyridans.*

CXXXV. Genus DASYTES. Payk.

(331) 1. \* DASYTES FOVEICOLLIS. *Pit-necked Dasytes.**D. (foveicollis) atro-cæruleus, subhirtus, capite prothoraceque punctatis, hoc antice bifoveato.*

Pit-necked Dasytes, black-blue, somewhat hairy: head and prothorax punctured; the latter with two anterior impressions.

Length of the body  $2\frac{3}{4}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body somewhat hairy, underneath black and glossy; above with a blue tint. Head glossy, punctured with largish scattered punctures; front with two impressions: prothorax nearly square, with the sides a little curved, punctured at the head, with a pair of transverse anterior impressions; sides and base margined, margin reflexed: elytra less glossy than the rest of the body, minutely, but not conspicuously, punctured.

This species answers in almost every respect to Major Gyllenhal's description of *Dasytes cæruleus*, but as he does not notice the impressions in the prothorax, which so minute a describer would scarcely have overlooked, I apprehend it as a distinct species. What we have in England under the name of *D. cæruleus* is the *Lagria viridis* of Rossi, a fine green insect, first taken I believe on the Sussex coast by Sir W. T. Hooker. It differs from *D. cæruleus* not only in its colour, but also by having the prothorax much more thickly punctured.

Family CLERIDÆ. *Cleridans.*

CXXXVI. Genus NECROBIA. Oliv.

(332) 1. NECROBIA VIOLACEA. *Violet-coloured Necrobia.*

*Necrobia violacea.* Lat. *Hist. Nat.* ix, 156, t. lxxvii, f. 5; *Gen.* i, 274, 1; *Crust. Arachn. et Ins.* i, 479. Oliv. *Ent.* iv, 76, bis. 5, 1. Steph. *Illustr. Mandib.* iii, 327, 1.

*Dermestes violaceus.* Linn. *Fn. Suec.* 422; *Syst. Nat.* ii, 563, 13. Fab. *Syst. Ent.* 57, 10; *Ent. Syst.* i, 230, 16. Panz. *Fn. Germ.* v, t. 6; *Ent. Germ.* i, 98, 18. Ced. *Fn. Ingr.* 129. Schrank *Enum.* 26, 45; *Fn. Boic.* i, 516, 595.

*Clerus Quadra.* Marsh. *Ent. Brit.* i, 323, 4.

—— *nigro-cæruleus.* Geoff. *Ins.* i, 304, 2.

*Corynetes violaceus.* Payk. *Fn. Suec.* i, 275, 1. Fab. *Syst. Eleuth.* i, 285, 1.

Length of the body  $2\frac{1}{2}$  lines.

Taken abundantly on the Journey.

## DESCRIPTION.

Body dark blue, glossy, minutely punctured, rather hairy. Punctures on the head and prothorax nearly confluent and larger than those of the underside of the body; antennæ black, last joint sub-quadrangular: sides of the prothorax obtusangular: scutellum black: longer punctures of the anterior half of the elytra arranged in rows with the interstices minutely punctured, the rows then disappear, and the whole of the apex is indiscriminately and minutely punctured: legs black with a tint of brown.

On the continent this insect has been universally confounded with the *Clerus violaceus* of Mr. Marsham, which Mr. Stephens considers as a distinct genus and as synonymous with *Corynetes violaceus* of Paykull: but as the latter has evidently in his description of the palpi had in view those of *Necrobia*, and assigns the habitat of that genus to his *Corynetes*, it seems clear that it is synonymous with Olivier's genus. The latter author has evidently confounded the two as well as Latreille. Thinking those found in carrion synonymous with those creeping about the windows of our houses early in the year, he took his figure from one of the latter, as is evident from his sketch of the palpi and antennæ which are not those of *Necrobia*, but belong to *Corynetes*. Linné himself appears to have confounded these two insects; for his short description belongs rather to *Corynetes violaceus* than to *Necrobia violacea*; the character, *thorax villosus*, belonging more to the former than to the latter, the prothorax of which is much less hairy; but the terms in which he describes its habitat in the *Systema Natura, cadaveribus inhians*, indicates the latter. I believe I was the first who pointed out the difference between the two to the late Mr. Marsham, and the trivial name he adopted, *Clerus Quadra*, was suggested by me.

There seems to be some tendency in this genus to *Cryptophagus*, &c.

## CXXXVII. Genus THANASIMUS. Lat.

(333) 1. \* THANASIMUS ABDOMINALIS. *Abdominal Thanasimus*.

*T. (abdominalis) niger, pubescens: abdomine testaceo; antennis pedibusque rufis; elytris fasciis duabus undulato-angulatis piloso-albis.*

Abdominal Thanasimus, black, downy; abdomen testaceous; antennæ and legs rufous; elytra with two undulato-angulated hairy white bands.

## PLATE II, FIG. 5.

Length of the body  $4\frac{1}{2}$  lines.

Several specimens taken in Lat. 65°.

## DESCRIPTION.

Body black, hairy, with longish white and some black hairs. Head punctured with two posteriorly converging impressed lines between the eyes; palpi and antennæ dull rufous, last joint of the labial palpi, which are more than twice the length of the maxillary, very large and semicordate; last joint of the antennæ, which are shorter than the prothorax, ovate and subacuminate; eyes kidney-

shaped, rufous, with a golden lustre: prothorax thickly punctured, not wider and not much longer than the head, constricted behind, and anteriorly with a pair of oblique impressions, one on each side: elytra minutely punctured, with larger punctures arranged in five rows, the two exterior ones reaching from the shoulder to the middle, and the interior ones not so far; the elytra are traversed by a pair of white undulato-angular bands formed of decumbent hairs; the first begins at the base below the scutellum, and running down along the suture for a little way then diverges and forms the band which is broadest at the lateral margin; the other band is near the apex, broad, and projects anteriorly into an angle: the legs are dull-rufous: the abdomen is between testaceous and orange with the tips of the segments paler.

Family CYPHONIDÆ. *Cyphonidans.*

CXXXVIII. Genus CYPHON. Fab.

(334) 1. \* CYPHON FUSCICEPS. *Brown-headed Cyphon.*

*C. (fusciceps) luridus, pubescens: capite, antennis, abdomine, femoribusque fuscis.*  
Brown-headed Cyphon, lurid, pubescent: head, antennæ, abdomen, and thighs brown.

Length of the body  $1\frac{3}{4}$  line.

A single specimen taken.

DESCRIPTION.

Body lurid, downy. Head brown, mouth lurid; antennæ mutilated in the specimen, but what remains is brown: prothorax very short, transverse, slightly bisinuate both anteriorly and posteriorly; disk embrowned: elytra very minutely and thickly punctured: breast and belly brown: thighs embrowned.

Family TELEPHORIDÆ. *Telephoridans.*

CXXXIX. Genus TELEPHORUS. Schæff.

(335) 1. TELEPHORUS ATER. *Black Telephorus.*

*Telephorus ater.* Oliv. *Ent.* ii, 26, 13, 12, t. i, f. 3. Steph. *Illustr. Mandib.* iii, 294, 5.  
*Cantharis atra.* Linn. *Syst. Nat.* ii, 649, 16. Fab. *Syst. Ent.* 206, 5; *Syst. Eleuth.* i, 297, 18. Gyll. *Ins. Suec.* i, 336, 10. Fall. *Canth.* 12, 9. Illig. *Kaf. Preuss.* i, 301, 10. Panz. *Ent. Germ.* i, 90, 7.

Length of the body  $2\frac{3}{4}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black, rather hairy. Head suborbicular, obsoletely channelled: mouth, palpi, and base of the antennæ, rufous: prothorax rather wider than long, very glossy; disk obsoletely channelled and a little elevated on each side the channel; anterior angles rounded: elytra minutely and confluently punctured, when elevated from the body they appear embrowned: tip of the thighs, tibiæ, and tarsi, rufous.

(336) 2. \* TELEPHORUS WESTWOODII. *Westwood's Telephorus.*

*T. (Westwoodii) niger, capite rufo fascia nigra tridentata, antennis basi, therace, anoque rufis.*

Westwood's Telephorus, black, head rufous with a black tridentated band; antennæ at the base, thorax, and anus, rufous.

Length of the body  $5\frac{1}{4}$  lines.

A single specimen taken in Lat. 65.

## DESCRIPTION.

Body black, downy. Head suborbicular, rufous with a black anteriorly tridentate band between the eyes; mandibles and palpi dusky at the tip; antennæ shorter than the body with the scape and the base of the pedicel, or second joint, rufous: prothorax rufous, rather wider than long, anteriorly rounded, posteriorly transverse with the margin much reflexed; disk slightly channelled: elytra obsoletely punctured, or wrinkled, with three obsolete longitudinal elevated lines, the outer one abbreviated at both ends; legs dusky, base and apex of the four anterior thighs rufous; posterior thighs rufous, dusky at the tip.

(337) 3. \* TELEPHORUS SAMOUELLII. *Samouelle's Telephorus.*

*T. (Samouellii) niger: capite, prothorace, scutello, pedibus, ventreque segmentis apice lateribusque pallide, testaceis.*

Samouelle's Telephorus, black; head, prothorax, scutellum, and legs testaceous: apex and sides of the ventral segments pale testaceous.

Length of the body  $5\frac{1}{4}$  lines.

Taken in the Route from New York, in Lat. 65°. and in the Rocky Mountains.

## DESCRIPTION.

Very like *T. Westwoodii*, but the antennæ are dusky, pale at the base; between the eyes is a faint dusky cloud; the scutellum and the legs are testaceous, as are the sides and tips of the ventral segments of the abdomen as well as the anus.

(338) 4. \* TELEPHORUS CURTISII. *Curtis's Telephorus.*

*T. (Curtisii) niger; capite rufo fascia interoculari nigra; prothorace elongato, scutello, pedibus, ventreque segmentis apice et lateribus, testaceis.*

Curtis's Telephorus, black; head rufous with an interocular black band; elongated prothorax, scutellum, legs, apex, and sides of the ventral segments, testaceous.

Length of the body  $4\frac{1}{4}$  lines.

Taken in Lat. 65°.

## DESCRIPTION.

Very like the preceding species, but it is smaller, there is a black band between the eyes; the prothorax is considerably longer and narrower in proportion, the posterior angles are more acute, and the tarsi are black.

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xxviii. \* Subgenus MALTHACUS. Kirb.

*Palpi* with the terminal joint narrow and subtriangular.

*Prothorax* nearly square.

This subgenus differs from the genuine *Telephori* in the different shape of the terminal joint of its palpi.

(339) 1. \* TELEPHORUS (*Malthacus*) PUNCTICOLLIS.

*Puncture-necked T. Malthacus.*

*T. M. (puncticollis) nigra capite rhomboidali; prothorace punctulato bigibbero, canaliculato, utrinque luteo; ore, elytrisque latere antice, pallidis; antennis basi subtus, cubitisque obscure rufis.*

Puncture-necked T. Malthacus, black; head rhomboidal; prothorax minutely punctured, two-hunched, channelled, reddish-yellow on each side, mouth and elytra anteriorly on the side, pallid; antennæ at the base underneath and cubits, obscurely rufous.

PLATE VII, FIG. 4.

Length of the body  $2\frac{1}{3}$  lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

Body black, rather hairy, with short decumbent white hairs. Head rhomboidal, lightly and minutely punctured; posteriorly obsolete channelled; impressed between the eyes; pale-yellow below the antennæ; antennæ longer than the prothorax, three first joints underneath of a dull-red, second and third, taken together, scarcely longer than the fourth: prothorax nearly square, lightly and very minutely punctured; anterior angles rounded, posterior rectangular; disk channelled, and on each side the channel longitudinally elevated; sides luteous; posterior margin reflexed: elytra very minutely and thickly punctured; lateral margin anteriorly rather pale: legs black; trochanters and cubits dull-rufous.

(340) 2. \* TELEPHORUS (*Malthacus*) LÆVICOLLIS. *Smooth-necked T. Malthacus*.

*T. M. (lævicollis) niger, capite rhomboidali; antice, antennis basi, pedibusque luteis; prothorace lævissimo disco canaliculato utrinque subelevato, angulis anticis obtusissimis luteis, posticis subrecurvis.*

Smooth-necked *T. Malthacus*, black, head rhomboidal, anteriorly, antennæ at the base, and legs, luteous: prothorax impunctured; disk channelled, somewhat elevated on each side; anterior angles very obtuse, luteous; posterior subrecurved.

Length of the body  $3\frac{1}{2}$  lines.

A single specimen taken in the Rocky Mountains.

## DESCRIPTION.

Body black, somewhat hoary with decumbent hairs. Head impunctured, impressed transversely between the eyes; mouth and three first joints of the antennæ luteous; prothorax nearly square very glossy, impunctured; elytra less visibly punctured than in the preceding species; legs luteous, thighs brown at the base.

(341) 3. \* TELEPHORUS (*Malthacus*) MANDIBULARIS. *Mandibular T. Malthacus*.

*T. M. (mandibularis) totus ater, mandibulis solis rufis.*

Mandibular *T. Malthacus*, entirely black, mandibles only rufous.

Length of the body  $2\frac{3}{4}$  lines.

Several specimens taken in Lat. 65°.

## DESCRIPTION.

Body all black, except the red mandibles, somewhat hoary with decumbent hairs. Hind-head received by the prothorax; eyes very prominent; antennæ longer than the prothorax; third joint nearly twice the length of the second: prothorax impunctured, scarcely wider than long, all the angles rounded; disk channelled, less elevated on each side; posterior lateral margins somewhat reflexed: elytra black, minutely and confluent punctured.

This species, as to the insertion of its head, varies from the others, and comes nearer to the typical *Telephori*.



xxix. \* Subgenus BRACHYNOTUS. Kirb.

*Prothorax* transverse, short, anteriorly and posteriorly subemarginate.

This subgenus has the palpi of *Malthacus*, but the prothorax is of a very different shape; it comes near to *Pygolampis*, or *Lampyrus italica* L.

(342) 1. \* TELEPHORUS (*Brachynotus*) BENNETII. *Bennet's T. Brachynotus*.

*T. B. (Bennetii) niger, naso prothoraceque pallidis; hoc macula discoidali nigro.*

Bennet's T. Brachynotus, black; nose and prothorax pale, the latter with a black discoidal spot.

Length of the body 6 lines.

Taken in Canada by Dr. Bigsby, and in Massachusetts by Mr. Drake.

DESCRIPTION.

Body black, hoary with decumbent hairs. Head suborbicular, punctured behind the antennæ; neck rufous; front, before the antennæ, pale yellow; exterior margin of the nose black; mandibles yellow at the base; antennæ longer than the prothorax: prothorax pale yellow, disk elevated with a black irregular punctured spot: elytra minutely and confluent punctured, somewhat dilated externally; obsolete tricarinate: legs black; knees rufous.

Family LAMPYRIDÆ. *Lampyridans*.

CXL. Genus LAMPYRIS. Linn.

(343) 1. LAMPYRIS CORUSCA. *Glittering Lampyrus*.

*Lampyrus corusca*. Linn. *Syst. Nat.* ii, 644, 2. Uddm. *N. Sp. Ins.* 47. Fab. *Spec. Ins.* i. 251, 3; *Syst. Eleuth.* ii, 100, 3. Oliv. *Ent.* ii, 28, 19, 14, t. ii, f. 14. Sturm. *Ins. Cab.* ii, t. xxii.

Length of the body  $4\frac{3}{4}$  lines.

Taken at New York and Cumberland-house Lat. 54°. In Canada by Dr. Bigsby.

DESCRIPTION.

Body oblong, pubescent, brown-black. Nose and mouth elongated: prothorax nearly semicircular, disk elevated; a rose-coloured arched streak dilated and yellower anteriorly adjoins the elevated part on each side: elytra obsolete carinated, most numerous and minutely punctured.

Linné gives this as a native of Finland and Russia, on the authority of Uddmann, but it has not since been found there. Perhaps Uddmann might have mistaken American specimens for European.

The *Lampyridae* seem to lead towards the *Blattina*, I have therefore placed them last in the series of insects with soft elytra, as connected with the *Orthoptera* in a different point from *Meloe*. Mr. Stephens has placed the *Brachelytra* next to the *Dermaptera*, and not without some appearance of reason, but their connection with *Necrophorus* and consequently with the *Necrophaga*,<sup>5</sup> is so much more striking that I do not see how they can be displaced without violating nature.

<sup>5</sup> See above, p. 82—86.

## ORDER ORTHOPTERA. Oliv.

## I. SALTATORIA. Lat.

Family LOCUSTIDÆ. *Locustidans*.CXLI. Genus LOCUSTA. Leach.<sup>6</sup>(344) 1. LOCUSTA LEUCOSTOMA. *White-mouthed Locusta*.

*L. (leucostoma) rufescenti-nigricans*; prothorace postice subcarinato; labro, palpis apice, mandibularumque macula magna, albis; antennis pedibusque rufescentibus.

White-mouthed Locust, blackish with a reddish tint; prothorax subcarinated posteriorly; upper lip, apex of the palpi, and large spot of the mandibles, white; antennæ and legs reddish.

Length of the body 13½ lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body obscurely rufous, clouded with darker shades. Upper lip, and large spot of the mandibles, white; palpi reddish with the two last joints whiter, summit black; antennæ as long as the trunk, which on the upper side is subpubescent: last segment of the prothorax carinated: tegmina cinereous, with piceous and rufo-piceous nervures; and at the base is a longitudinal mesal series of black spots: the legs are rufo-testaceous, with the summit of the thighs and the spines black; the posterior thighs above are clouded with the same colour.

(345) 2. LOCUSTA VERRUCULATA. *Warty Locust*.

*L. (verruculata) cinerea, nigro obscure irrorata*; prothorace toto rugoso, carinato, dorso verruculato; antennis pallidis apice nigris, thorace brevioribus.

Warty Locust, cinereous obscurely powdered and spotted with black; the whole of the prothorax is wrinkled and carinated; and its upper surface warty: antennæ pale, black at the tip, shorter than the thorax.

Length of the body 12¾ lines.

A single specimen taken in Lat. 57°.

<sup>6</sup> *Gryllus Locusta* L. See *Zool. Journ.* ii, 431.

## DESCRIPTION.

Body cinereous sprinkled with black dots or punctures, and indistinct spots. Head punctured; palpi white at the tip; mandibles piceous; antennæ shorter than the trunk, pale, black at the tip and longitudinally concavo-convex: prothorax with an entire longitudinal dorsal ridge, wrinkled, and warty from the wrinkles: tegmina with a reddish tint, irregularly reticulated; wings with a black mesal band, and reddish-yellow nervures: abdomen pale underneath.

The species of this genus, which admits of numerous subdivisions from the structure and characters of the thorax, are very numerous in most countries, though very little known. Probably they may amount to hundreds.

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Family ACRYDIADÆ. *Acrydiadans.*

## CXLII. Genus ACRYDIUM. Fab.

(346) 1. ACRYDIUM GRANULATUM. *Granulated Acrydium.*

*A. (granulatum) cinereum nigro obscure nebulosum; corpore toto punctulis elevatis albidis granulatum; prothorace abdomine longiori tricarinato; tibiis rufo-testaceis, albido obscure fasciatis.*

Granulated Acrydium, cinereous, obscurely clouded with black, with the whole body granulated with very minute elevated whitish points: prothorax longer than the abdomen, three-ridged; shanks reddish obscurely banded with white.

Length of the body 5 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body black, sprinkled with numberless very minute elevated points or granules. Prothorax cinereous, clouded obscurely with black, three-ridged; with middle ridge straight, and the lateral ones curved at the base: rudiments of the tegmina cinereous, ridged, punctured with excavated punctures: nervures of the wings black, those of the costal area white: the four anterior tibiæ are reddish obscurely banded or rather annulated with white.

N. B. The hind legs are wanting in the specimen.

This species belongs to Mr. Stephens's family A.

## ORDER NEUROPTERA. Linn.

## I. LIBELLULINA. Mac L.

Family AGRIONIDÆ. *Agrionidans*.

## CXLIII. Genus AGRION. Fab.

(347) 1. AGRION PUELLA. *Common Agrion*.

*Agrion Puella*. Fab. *Ent. Syst.* ii, 387, 2. *Ced. Fn. Ingr.* 186, 571. Steph. *Illustr. Mandib.* vi, 73, 5. Lam. *An. sans Vertèbr.* iv, 229, 2. Lat. *Crust. Arachn. et Ins.* ii, 241. Ramd. *Verdaung. Ins.* 147, 5, t. xv, f. 4.  
*Libellula Puella*. Linn. *Syst. Nat.* ii, 905, 21; *Fn. Suec.* 1471. Scop. *Carn.* 682. Schrank. *Enum.* 601. Vill. *Ent.* iii, 13, 26.  
 Mouff. *Ins.* 68, *fig. infer.* Rai. *Hist. Ins.* 51, 15. Rös. *Ins.* ii, *quat.* 2, t. x, f. 3, 4. Reaum. *Ins.* vi, t. xl. Sulz. *Ins. t.* xvii, f. 102. Geoff. *Ins.* ii, 224, 5. De Geer *Ins.* ii, 2, 60. H—s. *Exp. t.* xxix, f. 5, 6?

VARIETY B. Trunk sea-green, above black with two sea-green longitudinal stripes: abdomen black, sea-green at the base, inscribed with black: legs black above, underneath sea-green or white; the stigma of the wings is blackish with a transparent margin.

C. Trunk black and white with two dorsal white longitudinal stripes; legs black; stigma of the wings black: abdomen mutilated.

Both taken in Lat. 65°.

## II. PERLINA. Kirb.

## Family PERLIDÆ.

## CXLIV. Genus PERLA. Geoff.

(348) 1. PERLA BICAUDATA. *Two-tailed Perla*.

*Perla bicaudata*. Lat. *Hist. Nat.* xiii, 49; *Crust. Arachn. et Ins.* ii, 258. Lam. *An. sans Vertèbr.* iv, 191, 2. Steph. *Illustr. Mandib.* vi, 136, 3.  
*Perla fusca*. Geoff. *Ins.* ii, 231, 1.  
*Phryganea bicaudata*. Linn. *Syst. Nat.* ii, 908, 1; *Fn. Suec.* 1489. Schrank. *Enum.* 607.  
 ——— *maxima*. Scop. *Carn.* 705.  
*Semblis bicaudata*. Fabr. *Ent. Syst.* ii, 73, 8. *Ced. Fn. Ingr.* 414.  
 Reaumar. *Ins.* iii, t. xiii, f. 12? iv, t. xi, f. 9, 10. Wagn. *Helvet.* 227—229. Sulz. *Ins. t.* xvii, f. 6.

Length of the body about  $7\frac{1}{2}$  lines.

Several specimens taken in Lat. 68°.

## DESCRIPTION.

Body black, hairy. Antennæ, tibiæ, tarsi, caudal setæ, and wings dull testaceous; the vertex consists of a yellowish membranous spot: the joints of the caudal antenniform organs are dark at the tip.

The larva is white underneath, fusco-cinereous above; head and thorax spotted with white, with a pale longitudinal line. More than one species seems to have passed under the name of *Phryganea bicaudata*. I will not affirm that the present species is not distinct: but as the specimens were not perfect, I thought it best to consider them as belonging to that type.

## ORDER TRICHOPTERA. Kirb.

## Family PHRYGANIDÆ.

CXLV. Genus LIMNEPHILUS. Leach.

(349) 1. \* LIMNEPHILUS NEBULOSUS. *Clouded Limnephilus.*

*L. (nebulosus) niger; alis superioribus testaceis, albido maculatis irroratisque, area costali immaculata; inferioribus albidis: neuris testaceis.*

Clouded *Limnephilus*, black with the upper wings dusky-testaceous spotted and dotted with white, the costal area being without spots; under wings whitish with testaceous nervures.

Length of the body 7 lines.

A single specimen taken in Lat. 65.

## DESCRIPTION.

Body black, hairy with whitish hairs. Antennæ are mutilated in the specimen, but the base is black: scutellum testaceous: upper wings testaceous spotted and dotted with white except the costal area, which is without any of that colour; under wings white with testaceous nervures: legs testaceous.

(350) 2. \* LIMNEPHILUS FEMORALIS. *Femoral Limnephilus.*

*L. (femoralis) niger, alis superioribus dilute testaceis albo maculatis irroratisque; inferioribus albis neuris testaceis: pedibus testaceis femoribus nigris.*

Femoral *Limnephilus*, black, with the upper wings pale testaceous, spotted and dotted with white; under wings white with testaceous nervures; legs testaceous with black thighs.

Length of the body  $6\frac{1}{2}$  lines.

Taken with the preceding.

## DESCRIPTION.

Very like the preceding species, but paler, with black scutellum and thighs.

## ORDER HYMENOPTERA. Linn.

## I. TEREBRANTIA.

## i. SECURIFERA. Lat.

Family CIMBICIDÆ. *Cimbicidans*.

## CXLVI. Genus CIMBEX. Oliv.

(351) I. CIMBEX FEMORATA. *Large-thighed Cimbex*.

- Cimbex femorata. Fab. *Syst. Piezat.* 15, 1. Steph. *Illustr. Mandib.* vii, 6, 1. Lat. *Crust. Arach. et Ins.* ii, 272. St. Farg. *Tenthred.* 31, 83. Lam. *An. sans Vertèbr.* iv, 176, 1. Walck. *Fn. Paris* 2, 32, 1.  
 ———— Europea. Sam. *Compend.* 262, 1.  
 Tenthredo femorata. Linn. *Syst. Nat.* ii, 120, 1; *Fn. Suec.* 1533. Fab. *Ent. Syst.* ii, 104, 1. Ced. *Fn. Ingr.* 455. Vill. *Ent.* iii, 78, 1. Panz. *Fn. Germ.* xxvi, t. 20. De Geer *Ins.* ii, 944, 2, t. xxxiv, f. 1—6. Jur. *Hymen.* 47.  
 Crabro femorata. Geoff. *Ins.* ii, 263, 3, t. xiv, f. 4. Scop. *Ann. Hist. Nat.* v, 120, 142. Sulz. *Ins. t.* xxvi, f. 4. Schæff. *Icon. t. civ.* f. 1, 2. Alb. *Ins.* 69.

Length of the body 10 } lines.  
 Expansion of the wings 21 }

A single specimen taken in Lat. 65°.

## DESCRIPTION.

♀

Body very black, hairy. Antennæ yellow, brown at the base: legs blue-black; tarsi yellow: wings hyaline with yellow nervures, brown at the tip, with a brown cloud in the middle areolet adjoining the costa.

## CXLVII. Genus TRICHIOSOMA. Leach.

(352) I. \* TRICHIOSOMA TRIANGULUM. *Triangle Trichiosoma*.

*T. (Triangulum) nigrum, cinereo-lanuginosum; antennis articulis tribus clavo proximis, alis, tibiis tarsisque, testaceis; femoribus atro-ceruleis; abdomine ferrugineo, dorso triangulo isosceli nigro insigni.*

Triangular Trichiosoma black, hairy, with cinereous lanuginous hairs; antennæ with the three joints next the knob, the wings, and the tibiæ and tarsi, testaceous; thighs black-blue; abdomen ferruginous, with a dorsal black isosceles triangle.

Length of the body 9 lines.

A single specimen taken in Lat. 65°. Another was also sent me from Canada by Dr. Bigsby.

## DESCRIPTION.

Body black, shining, covered with soft and woolly whitish hairs, punctured more or less. Head, excluding the mandibles, depressed, orbicular, as wide as the trunk; mandibles crossed, very sharp, black; upper lip subpentagonal, flat with a longitudinal elevation in the middle, hairs on this part black; anterior margin of the nose wavy, emarginate in the middle; antennæ with the fourth, fifth, and sixth joints testaceous; three eyelets behind the antennæ arranged in a triangle; eyes oval, prominent; vertex square, marked out by a ridge on each side: trunk subglobose: prothorax with a longitudinal furrow: thighs and coxæ black-blue; under a strong magnifier beautifully and most minutely reticulated which gives them a silky lustre; the rest of the leg is testaceous; the two posterior pair of thighs are thicker than the others and armed at the apex with a short tooth on each side, between which is a cavity to receive the shank when folded; tarsi with a sucker underneath at the apex of the four first joints: wings testaceous with piceous nervures, and a cloud at the tip; abdomen ferruginous with a dorsal triangular black spot, extending from the base towards the apex, but not entering the last segment; the basilar ventral segments are spotted with brown.

I at first regarded this insect as a variety of *Cimbex Vitellina*, but the colour of the antennæ and legs differs; and what Linné meant by the words *labio caret*, is not clear—but as the upper lip is very conspicuous, though entirely black, it cannot be supposed to agree in that respect; unless we interpret his words as meaning that it had not a white lip like *C. Amerina*, the next species, which seems not very probable. St. Fargeau, in his Monograph on the Saw-flies (*Tenthredinetæ*.) has a *Cimbex Vitellina*, but his description does not agree with that of Linné.

(353) 2. TRICHIOSOMA LUCORUM. (Leach.) *Trichiosoma of the groves.*

*Trichiosoma Lucorum.* Leach. *Zool. Misc.* iii, xxviii, 110, 5. Steph. *Illustr. Mandib.* vii, 10, 4

*Cimbex Lucorum.* Fab. *Syst. Piezat.* 16, 2. St. Farg. *Tenthred.* 33, 89.

*Tenthredo Lucorum.* Linn. *Syst. Nat.* ii, 921, 6; *Fn. Suec.* 1537. Fab. *Ent. Syst.* ii, 105, 2. Vill. *Ent.* iii, 81, 6.

Length of the body 7 } lines.  
Expansion of the wings 15 }

A single specimen taken in Lat°. 65.

## DESCRIPTION.

Body black with a very slight æneous tint; glossy, hairy with cinerascens hairs, those of the trunk long. Head orbicular, scarcely so wide as the trunk; upper lip small, convex, orbicular, punctured; antennæ black: wings subhyaline with a cloud at the tip; nervures some piceous and others rufous: thighs black with a very slight tint of blue; posterior pair armed with a tooth: abdomen short, subovate, black, covered more or less with short decumbent down; black above, underneath reddish at the tail.

Family TENTHREDINIDÆ. *Tenthredinidans.*

CXLVIII. Genus ALLANTUS. Panz.

(354) 1. \* ALLANTUS LEUCOSTOMA. *White-mouthed Allantus.*

*A. (leucostoma) atra, nitida, glabra; antennis thorace subbrevioribus; naso emarginato; labro, palpis, mandibulisque basi, albis; pedibus flavis; tarsis posticis tibiaramque apice nigris.*

White-mouthed Allantus, very black, glossy, naked; antennæ somewhat shorter than the thorax, with the notched nose, upper lip, feelers, and base of the mandibles, white; legs yellow; with the posterior tarsi, and apex of the posterior tibiæ, black.

Length of the body 6 lines.

One specimen taken in Lat. 65°.

## DESCRIPTION.

Body narrow, black, glossy, without hairs. Head scarcely so wide as the trunk, wedge-shaped; palpi, suborbicular upper lip, emarginate nose, and base of the mandibles, white; apex of the latter rufous; antennæ a little shorter than the trunk, nine-jointed, with the third joint longer than any of the others; neck constricted: tegulæ testaceous: wings subhyaline with piceous nervures: legs yellow, with the apex of the tibiæ, and the whole of the tarsi of the posterior legs, black: abdomen linear, acute at the anus.

This species comes near *Allantus ater*, but the mandibles are rufous at the apex; the palpi are whiter; and the legs of a different colour.

## II. UROCERATA. Lat.

Family SIRICIDÆ. *Siricidans.*

CXLIX. Genus SIREX. Linn.

(355) 1. SIREX BIZONATUS. (Stephens.) *Two-zoned Sirex.*

*Sirex bizonatus.* Steph. *Cat.* 342, 3998; *Illustr. Mandib.* vii, 114, 2, t. xxxvi, f. 1.

Length of the body 18 } lines.  
Expansion of the wings 27 }

Taken in Lat. 65°. and in the Journey from New York.



## DESCRIPTION.

Body very black, covered with innumerable punctures from each of which proceeds a black upright hair. Head narrower than the trunk; mandibles incumbent; palpi rufo-piceous: antennæ as long as the trunk, yellow; behind each eye is a large oval yellow eye-like spot perfectly naked and smooth: legs and tip of the thighs yellow: wings yellowish with dark nervures: abdomen with the second, seventh, and eighth segments luteous: anal mucro linear, yellow, terminating in a point: ovipositor black.

The specimens of this species, which Mr. Stephens found near London, might probably have been imported in fir timber from Canada.

(356) 2 SIREX JUVENCUS. (Linné.) *Steer Sirex*.

*Sirex Juvencus*. Linn. *Syst. Nat.* ii, 929, 4; *Fn. Suec.* 1575. Fab. *Ent. Syst.* ii, 126, 9; *Syst. Piez.* 50, 9. Klug. *Sirc.* 36, 4, t. iii, f. 4, 5. Panz. *Fn. Germ.* lii, t. 17. Sulz. *Ins.* t. xxvi, f. 9, 10. Schæff. *Icon.* t. ccv, f. 3. Walck. *Fn. Paris.* ii, 45, 3. Vill. *Ent.* iii, 128, 3. Ced. *Fn. Ingr.* 474. Steph. *Illustr. Mandib.* vii, 114, 4. Spin. *Ins. Ligur.* i, 60, 2. Curtis *Brit. Ins.* vi, t. ccliii.  
*Urocerus Juvencus*. Lat. *Gen.* iii, 244, 3.  
*Ichneumon*. De Geer *Ins.* i, 568, t. xxxvi, f. 7.  
*Ichneumon Juvencus*. Scop. *Carn.* 741.  
*Torvus*. H—s *Exp.* t. xxviii. *Sirex* f. 1.

Length of the body, mucro included 11 } lines.  
 Expansion of the wings . . . . 20 }

One specimen taken in Lat. 65°.

## DESCRIPTION.

Body black-blue, glossy, punctured very thickly on the head and trunk, in which from each puncture proceeds a black hair. Head between globose and triangular, very hairy with a naked spot behind the eyes; cheek terminating in a tooth or point as in the other species of the genus; vertex blue-green: antennæ black, shorter than the thorax; palpi piceous: trunk subglobose, with the central part of the thorax, and the part between the four anterior legs tinted with green: legs rufous with the coxæ and trochanters black: wings hyaline with piceous nervures: abdomen naked, terminated by a subtriangular acuminate mucro or horn; ovipositor piceous.

In this specimen the ovipositor is longer and goes further beyond the anal horn than in the European ones, and the horn itself is more dilated at the base.

## III. PARASITA. Kirb.

i. PUPIVORA. Lat.

Family FŒNIDÆ. *Fœnidans*.

CL. Genus FŒNUS. Fab.

(357) 1. FŒNUS JACULATOR. *Archer Fœnus*.

Fœnus Jaculator. Panz. *Fn. Germ.* xcvi, t. 16. Fab. *Ent. Syst. Suppl.* 241; *Syst. Piez.* 141, 1. Walck. *Fn. Paris.* ii, 75, 1. Lat. *Hist. Ins.* iii, 329; *Gen.* 253, 1. *N. D. D. H. N.* xi, 581. Lam. *An. sans Vertèb.* iv, 148, 1. Sam. *Compend.* 268, 1. Steph. *Illustr. Mandib.* vii, 120, 1. Jur. *Hymenopt.* 58, 1.

Ichneumon Jaculator. Linn. *Syst. Nat.* ii, 937, 52; *Fn. Suec.* 1626. Fab. *Ent. Syst. Em.* ii, 177, 183. Vill. *Ent.* iii, 173, 117. Ced. *Fn. Ingr.* 505.

Reaum. *Ins.* iv, 157, t. x, f. 14, 15. De Geer *Ins.* i, 560, t. xxxvi, f. 10.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

The American specimens differ from those of Europe, which also vary, in having the red segments of the abdomen marked with a large black basilar dorsal spot, the former having mostly only a darker cloud. Panzer's figure, however, comes very near the American.

ii. LARVIVORA. Kirb.

## Family ICHNEUMONIDÆ

CLI. Genus ICHNEUMON. Linn.

§ ix. *Scutello nigro, abdomine vel toto rufo, vel rufo et nigro.* Grav.(358) 1. \* ICHNEUMON FERRUGATOR. *Rusty Ichneumon*.

*I. (Ferrigator) ater, punctulatissimus, palpis, tibiis anticis, tarsisque omnibus, abdomine segmentis, excepto antico nigro, rufescentibus.*

Rusty Ichneumon, thickly and minutely punctured, with the palpi, anterior tibiæ, all the tarsi, the wings, the abdominal segments except the first which is black, more or less red.

Length of the body 7 lines.

Taken in the Expedition, but no locality stated.

DESCRIPTION.

Abdomen black, rather glossy, very thickly punctured with minute and often confluent punctures. Head transverse, triangular, not quite so wide as the middle of the trunk; anterior margin of the face rounded; palpi reddish; eyes long, subelliptical; antennæ shorter than the trunk, spirally convoluted: trunk oblong, subcompressed; scutellum subtriangular, rounded at the apex; metathorax armed on each side with a short tooth, with several elevated longitudinal and oblique lines; legs with decumbent whitish hairs, anterior tibiæ obscurely, and all the tarsi, rufous; wings embrowned with a rufous tint, nervures darker: abdomen lineari-lanceolate, rufo-ferruginous, with the first joint, which is dilated at the apex, black; footstalk channelled longitudinally on each side.

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Family CRYPTIDÆ. *Cryptidans.*

CLII. Genus CRYPTUS. Fab. Grav.

§ ii. *Scutello pallido, abdomine nigro.* Grav.

(359) I. CRYPTUS VIDUATORIUS. (Fabricius.) *Widowed Cryptus.*

*Cryptus viduatorius.* Fab. *Syst. Piezat.* 70, 2. Grav. *Ichn. Eur.* ii, 476, 40.  
*Ichneumon viduatorius.* Thunb. *Hymenopt.* n. 82.

Length of the body,  $\left\{ \begin{array}{l} \text{including the ovipositor } 5\frac{1}{4} \\ \text{without ditto } \dots \dots 3\frac{1}{2} \end{array} \right\}$  lines.

One specimen taken in Lat. 54°.

DESCRIPTION.

Body black. Head subtriangular, transverse, very minutely and thickly punctured; palpi pale rufous; face plane with two elevations in the middle; eyes large, oval; antennæ shorter than the trunk, rather slender, involute, black with a white band in the middle; orbit of the eyes behind with a very indistinct white line: trunk oblong, cubical, gibbous, very thickly and confluent punctured except on the back; tegulæ white; metathorax armed with two minute teeth on each side, one in the middle and the other at the base, forming the terminal angle, marked out into three areas by elevated lines: legs red with coxæ, trochanters, and posterior tarsi black; wings subtestaceous with the larger nervures black: abdomen, excluding the ovipositor, scarcely so long as the trunk; first segment impunctured, glossy, dilated at the apex, which is subquadrangular; footstalk flat; second and third segments very large, with their gloss obscured by infinitely minute punctures; ovipositor shorter than the abdomen; borer red.

## CLIII. Genus CRYPTOCENTRUM. Kirb.

Head between transverse and globose; face quadrangular, with the anterior margin crenate; palpi long, filiform: antennæ slender, first joint thick; second minute; third longer than the rest: trunk ovate-oblong, subcompressed; neck moderately long; scutellum trapezoidal; legs slender, posterior pair elongated: upper wings-apical areolets three; middle four, viz. 2, 2, without a cellule;<sup>7</sup> basilar three; under wings-areolets seven, viz. 4, 3:<sup>8</sup> abdomen sessile, smooth, subcompressed, in the female clubbed at the apex; four first segments longer than the rest, the first curved, rather wider at the apex; the three next are wider than long, the last is minute and triangular; at the extremity the tail is cleft for the passage of the ovipositor, this cleft is formed by the turning up of the sides of the last ventral segment; ovipositor very short; the four last ventral segments, at least in the dead insect, project so as to form an elevated ridge in which the ovipositor is concealed.

The insect from which I have taken the characters of this genus does not appear to arrange under any of those of Gravenhorst; its place would be near *Acanites*.

(360) 1. \* CRYPTOCENTRUM LINEOLATUM. *Lineolate Cryptocentrum*.

*C. (lineolatum) atrum, subnitidum; facie, palpis, antennæ scapo extrorsum, oculorum orbita utrinque, pedibus quatuor anticis basi, scutello lineolis duabus transversis, abdominisque segmentis apice, posterioribus interrupte, niveis.*

Lineolate *Cryptocentrum*, black, rather glossy; with the face, feelers, scape of the antennæ externally, orbit of the eyes on each side, the four anterior legs at the base, two transverse streaks of the scutellum, and the apex of the abdominal segments, in the posterior ones interruptedly, snowy-white.

## PLATE VI, FIG. 1.

Length of the body 6 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body very black, somewhat glossy, sprinkled with whitish decumbent hairs. Head subtransverse, hollowed out behind to receive the neck; face with a streak on each side the eyes; feelers and scape of the antennæ on the outside white: antennæ slender, black, externally obscurely testaceous, with a white annulet below the middle; trunk compressed; margin of the collar on each side, tegulæ, and two transverse elevated streaks on the scutellum, white: four anterior legs with the coxæ and trochanters, tip of the thigh and under side of the tibiæ, white; the thighs, except the tip, testaceous; upper side of the tibiæ and tarsi, and long posterior legs, black: wings hyaline with black nervures: abdomen sessile, with the last segments dilated for the reception of the ovipositor; the apical margin of all the segments but the two first is interruptedly white; but in those segments the interruption is not perfect.

<sup>7</sup> By this name Mr. Stephens distinguishes an areolet which Jurine calls the *petiolated cubital cell* (39, t. i, f. 3, b.) and Gravenhorst the *areolet*.

<sup>8</sup> *Introd. to Ent.* iii, 630—.

Family BRACONIDÆ. *Braconidans.*

CLIV. Genus BRACON. Fab.

(361) 1. \* BRACON CROCATOR. *Saffron-coloured Bracon.**B. (crocator) ater, nitidus; abdomine croceo; alis infuscatis; ovipositore corpore vix brevior.*

Saffron-coloured Bracon, very black, glossy; abdomen saffron-coloured; wings embrowned; ovipositor scarcely shorter than the body.

Length of the body without the ovipositor 3 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body very black, glossy. Head subglobose, with the segment of a circle taken out behind; eyes between oval and round; antennæ as long as the trunk; trunk oblong, widest between the wings; scutellum rather large, rounded at the apex; metathorax obsoletely transversely wrinkled, sloping towards the abdomen: posterior legs rather robust: wings embrowned, middle areolets four, viz. 3 and 1, all quadrangular; stigma very large: abdomen lanceolate-ovate, as long as the trunk, saffron coloured, paler towards the apex; the three first segments are emarginate, and marked with two longitudinal faint furrows, the first pair being curvilinear: ovipositor longer than the body, borer red.

## IV. ACULEATA. Lat

i. HETEROGYNA. Lat.

a. PHILOPONA. Kirb.

Family FORMICIDÆ. *Formicidans.*I consider the *Heterogyna* of Latreille as consisting of two races.

1. The *Philopona* containing all those genera, that constitute Linné's genus *Formica*, distinguished by their admirable industry, their wonderful economy, and the nests they construct.

2. The *Misopona* consisting of Linné's genus *Mutilla*, affording no such examples.

## CLV. Genus FORMICA. Linn.

(362) 1. \* FORMICA SEMIPUNCTATA. *Semipunctured Formica.*

*F. (semipunctata) nigra, glabra; abdomine pubescente, punctato; segmentis apice membranaceis rufescentibus, intermediis basi levibus.*

Semipunctured Formica, black, naked; abdomen downy, punctured; segments membranous at the apex and reddish; the intermediate ones impunctured at the base.

Length of the body  $7\frac{3}{4}$  lines.

Several taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

Body black, glossy. Head something wider than the trunk, subtriangular: antennæ piceous with the scape black; wings cast in all the specimens;<sup>9</sup> scale vertical between the trunk and abdomen, sloping to a thin edge upwards, where it is very slightly emarginate: abdomen oblong, subcylindrical, minutely punctured with the punctures piliferous; hairs decumbent with those of the margin of the segments and the anus, longer; margin of both abdominal and ventral segments membranous, membrane reddish; base of the three intermediate segments not punctured.

This species a good deal resembles the *Formica herculeana* of Linné (*F. ligniperda* Latr.) but it is proportionably more narrow, and entirely black save the legs and upper portion of the antennæ. I at first took it for a variety of *F. pubescens* of Latreille,<sup>1</sup> but in his description of that species, he makes no mention of the punctures of the abdomen, nor of the rufescent membranous margin of the abdominal segments, circumstances also which distinguish it from *F. pennsylvanica* of De Geer, and which, from the figure of that author, is evidently a much smaller insect.<sup>2</sup>

(363) 2. FORMICA FUSCA. (Linné.) *Brown Formica.*

*Formica fusca.* Linn. *Syst. Nat.* ii, 963, 4.; *Fn. Suec.* 1722. Fab. *Ent. Syst.* ii, 352, 11; *Syst. Piez.* 399, 13. De Geer *Ins.* ii, 1050, 1082, 3, t. xlii, f. 12. Lat. *Fourmis.* 159, 35, t. vi, f. 32; *N. Diet. D'H. Nat.* xiii. Article *Fourmis. Crust. Arachn. et Ins.* ii, 312. Geoff. *Ins.* ii, 428, 5. De Geer *Ins.* ii, 1050, 1082, 3, t. xlii, f. 12. Müll. *Fn. Frid.* 657; *Linn. Nat.* v, 913. Oliv. *Encycl.* vi, 433. Schrank. *Enum.* 833. Vill. *Ent.* iii, 334, 3. Berk. *Syn.* i, 159. Ced. *Fn. Ingr.* 557. Walck. *Fn. Paris.* ii, 162, 7. Stew. *Elem.* ii, 248. Jur. *Hymenopt.* 272. Kirb. and Sp. *Introd. to Ent.* ii, 62. Lam. *An. sans Vertèbr.* iv, 9, 5. Steph. *Cat.* i, 357, 4846, 8.

*Formica media nigro colore splendeus* Rai. *Hist. Ins.* 69.

The small Black Ant. Gould. *Ants.* 2, 3.

*Formica flavipes.* Fourc. *Ent. Par.* ii, 52.

— libera. Scop. *Carn.* 835?

Fournis noir cendrée. Hub. *Fourm.* 159, 35, t. vi, f. 32, A.

Length of the body  $1\frac{1}{4}$  line.

One specimen taken in Lat. 65°.

<sup>9</sup> *Introd. to Ent.* i, 370.

<sup>1</sup> *Hist. Nat. de Fourmis.* 96, t. i, f. 2, A, B.

<sup>2</sup> De Geer, *Ins.* iii, 603, 4, t. xxxi, f. 9, 10.

## DESCRIPTION.

♀

Body black, but not intensely, glossy, subcinereous from down. Head triangular, large, much wider than the trunk; antennæ with the scape, the three following joints, and the terminal one, rufous, the other joints are darker: trunk oblong, compressed, anteriorly elevated and wider; the prothorax with the scutellum forming a rhomboid; scutellum large, trapezoidal, subrufous; scale subtriangular, subemarginate; legs rufous; thighs embrowned; abdomen subglobose, more hairy than the rest of the body, especially towards the anus.

ii. LESTICA.  
a. DIPLOPTERYGA.<sup>3</sup>

Family VESPIDÆ. *Vespidans.*

CLVI. Genus VESPA. Linn.

(364)

I. VESPA VULGARIS. *Common Vespa.*

*Vespa vulgaris.* Linn. *Syst. Nat.* ii, 914, 4; *Fn. Suec.* 1671. Fab. *Ent. Syst.* ii, 256, 10; *Syst. Piez.* 255, 9. Rai. *Hist. Ins.* 250. Scop. *Carn.* 825. Geoff. *Ins.* ii, 360, 2. Müll. *Linn. Nat.* v, 880. Frisch. *Ins.* 9, t. xii, f. 2. Schæff. *Elem.* t. cxxx, *Icon.* t. xxxv, f. 4. De Geer *Ins.* ii, 766, 2, t. xxvi, f. 5—7. H—s. *Expos.* 128, t. xxxvii, f. 5. Amo. *Ins. venim* 251, t. ii, f. 13. Schrank. *Enum.* 787. Vill. *Ent.* iii, 263, 2. Christ. *Hymenopt.* 236, t. xxii, f. 2. Don. *Brit. Ins.* vii, t. ccxxvi. Berk. *Syn.* i, 158. Ced. *Fn. Ingr.* 521. Walck. *Fn. Paris*, ii, 91, 4. Stew. *Elem.* ii, 238. Bingl. *An. Bi.* iii, 341. Panz. *Fn. Germ.* xlix, t. 19. Shaw. *Gen. Zool.* vi, 285, t. xcv. Jur. *Hymenopt.* 168. Lat. *N. D. D'H. N.* xiv, 8; *Crust. Arachn. et Ins.* ii, 340. Lam. *An. sans Vertèbr.* iv, 88, 2. Sam. *Compend.* 280, 2. Kirb. and Sp. *Introd. to Ent.* ii, 106. Steph. *Cat.* i, 374, 5029, 2. Ramd. *Verdaung Ins.* 132, 1, t. xii.

*Vespa.* Mouff. *Ins.* 45.——major. Schwenck. *Theriotr.* 561.——flava major. Merr. *Pinax.* 196.

Aristot. *Hist. Anim.* i, ix, c, 41. Plin. *Hist. Nat.* i, xi, c, 21. Swamm. *Bibl. Nat.* t. xxvi, f. 8. Reaum. *Ins.* vi, t. xiv, f. 1—7.

Length of the body  $6\frac{1}{2}$  lines.

A single specimen taken in Lat. 65°.

<sup>3</sup> Latreille names this section *Diploptera*, but the termination *ptera* being consecrated to the *Orders* of insects, I have changed the term for another of the same meaning.

## DESCRIPTION.

♀

Body black, variegated with yellow. Head and trunk thickly clothed with long woolly down of a grayish colour; face with three yellow spots placed in a transverse line behind the antennæ, the two lateral ones subtriangular, the intermediate one subquadrangular, with a reddish cloud on its disk; the nose below the antennæ is yellow, inclining to red round the margin; it has also three black dots placed in a triangle in the disk, the two lower ones being very minute; the vertex of the nose is also black; the mandibles are yellow with black tips; on the outside the orbit of the eyes is reddish-yellow: the trunk is black underneath; above the posterior upper margin of the collar, the tegulæ which cover the base of the wings, and a triangular spot underneath them, are yellow; on the metathorax and scutellum are six yellow spots placed in a double series, the upper and lower pairs being subtriangular, and the intermediate pair crescent-shaped: the thighs are black at the base, but their apex, and the rest of the leg, and a small triangular spot on the inner side of the four posterior trochanters, are yellow; the wings are yellowish red with red nervures: the abdomen, except at the base, is less hairy than the rest of the body; it is yellow with all the segments, black at the base; though the blackness in the terminal ones is chiefly concealed by the antecedent segments; in all in the middle it projects into a triangle; the four intermediate ones have also each a round-headed small black spot, the connection of which with the blackness of the base is interrupted in the second segment; on the under side of the abdomen the base of the segments is black, and the intermediate ones have each a pair of rather crescent-shaped black spots not connected with the blackness of the base.

From this minute description, it will be seen that the American specimen which is very small, differs in several respects from the European wasps of the common species, especially the spots on the vertex, and the six, instead of four spots, on the scutellum and metathorax: but as it exhibits nearly all the other characters ascribed by Linné to his *V. vulgaris*, I have judged it best, as there was only a single specimen, to consider it as forming a variety rather than a species. I imagine Aristotle's two species of wasp, one of which forms its nest in the oaks of the mountains, and the other underground, are the *Vespa crabro* and *vulgaris* of Linné; Pliny mentions his *Vespæ* and *Crabrones*, the former as building their nest on high, and the latter as selecting caverns and subterraneous cavities; whence it seems probable that the last is the real *V. vulgaris*. He mentions in the same chapter *Vespæ* which are called *Ichneumones*, which carry spiders into their nest, from which circumstance it seems probable that these belonged to the modern genus *Pompilus* or the Spider-wasp.

(365)

2. \* *VESPA BOREALIS*. *Boreal Vespa*.

*V. (borealis) nigra, antennis subtus luteis, capite flavo, trunco albido, maculatis; femoribus apice, tibiis tarsisque flavis; abdomine subcordato flavo, segmentis basi nigris, omnibus, primo excepto, puncto libero nigro.*

Boreal Wasp, black, antennæ underneath luteous, head spotted with yellow and the trunk with white; thighs at the tip and rest of the leg yellow; abdomen rather heart-shaped, yellow, with the segments black at the base and each, except the basal one, with two black discoidal dots.

Length of the body  $7\frac{1}{2}$  lines.

A single specimen taken with the last.



## DESCRIPTION.

Body black, downy, especially the head and trunk, with gray hairs. Nose trapezoidal, yellow with a black floriform discoidal spot; anterior margin with three sinuses taken out; vertex with a trapezoidal yellow spot just above the base of the antennæ; antennæ black, luteous underneath; external orbit of the eyes and mandibles yellow: lateral margin of the collar, a triangular small spot under each wing, two narrow transverse and internally acute spots on the scutellum, and two similar ones below them on the metathorax, all white: tegulæ white with a brownish spot in the disk: legs yellow; thighs black at the base: wings testaceous: abdomen heart-shaped, with the bases of the segments where uncovered, and two dots on each except the first, black; the middle part of the black basal bands projects into a triangular tooth; the underside is nearly similar, but the projections form a longitudinal stripe.

(366) 3. \* *VESPA MARGINATA.* *Bordered Vespa.*

*V. (marginata) nigra, pubescens, ore, frontis maculis, antennis scapo subtus, thoracis linea utrinque ante alas, scutelli punctis duobus obscuris, abdominisque segmentis margine, albidis: pedibus rufescentibus basi nigris.*

Bordered wasp, black, downy; with the mouth, spots of the front, scape of the antennæ below, line of the thorax before the wings, two obscure dots of the scutellum, and margin of the abdominal segments, all white; legs rufescent, black at the base.

## PLATE VI, FIG. 2.

Length of the body  $7\frac{1}{2}$  lines.

Taken in the Route from New York, and again in Lat. 65°.

## DESCRIPTION.

♀

Body black, punctured, downy from a mixture of black and gray hairs. Mandibles white with a black margin; palpi reddish; nose white with a flask-shaped longitudinal black spot in the disk; just above the antennæ is a bilobed white spot, between which and the eye is a white line, and another external one above it; antennæ short, not much exceeding the head, black with the scape white underneath; in one of the specimens there is a reddish spot underneath on the four or five last joints, which is not discernible in the others: the external margin of the collar, before each wing, and a small triangular spot on each side of the scutellum, are white: wings embrowned with darker nervures, but the costal nervure, and tegulæ are ferruginous; legs testaceous, black at the base: abdomen with the apex of the dorsal and ventral segments white; anal segment black with a pair of white spots; the white margin of the dorsal segments receives an intermediate triangular point, and on each side of it a rounded lobe from the black base.

(367) 4. *VESPA MACULATA.* (Linné.) *Spotted Vespa.*

*Vespa maculata.* Linn. *Amæn. Acad.* vi, 412, 91; *Syst. Nat.* ii, 948, 2. Fab. *Ent. Syst.* ii, 258, 18; *Syst. Piez.* 257, 17.  
De Geer *Ins.* iii, 584, 9, t. xxix, f. 13.  
—— americana. Christ. *Hymenopt.* 239.

Length of the body 10 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

♀

Body black, downy, with grayish down, punctured. Mandibles very large, white; nose white with the whiteness divided longitudinally by a black stripe; front with three white spots placed transversely; the intermediate one trapezoidal and bilobed, the lateral ones curved and entering the sinus of the eyes; externally the eyes are bordered by a white stripe: collar with an L-shaped white line before the wings, below which is a triangle of the same colour; the black base-covers have a white dot; the scutellum and post-scutellum have each two lateral crescent-shaped white spots at their anterior margin: the three last segments of the abdomen have each a pair of white spots, which in the penultimate and antepenultimate segments are bilobed, and in the last segment triangular: all the ventral segments, except the first, have a white dot or spot on each side: the antennæ are broken off in the specimen, except the scape and two following joints, which are whitish underneath: the anterior legs are black and white, the intermediate have the apex of the thighs, and an external streak on the first joint of the tarsus, white; the posterior legs are black; the wings are embrowned.

De Geer describes the parts here stated to be white, as straw-coloured.

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iii. ANTHOPHILA. Lat.  
a. BRACHYGLOSSA.<sup>4</sup> Kirb.

Family PROSOPIDÆ. *Prosopidans.*

CLVII. Genus PROSOPIS. Jurine.

(368) 1. \* *PROSOPIS ELLIPTICA.* *Elliptical Prosopis.*

*P. (elliptica) atra, subpubescens, nasi apice, fronte intus ad oculos, thoracisque tuberculo ante alas, albis; tibiis posticis albido annulatis; abdomine elliptico, nitido.*

Elliptical *Prosopis*, body very black, a little downy; apex of the nose, front internally at the eyes, and the tubercle of the thorax before the wings, all white; posterior tibiæ annulated with white; abdomen elliptical, glossy.

Length of the body 3 lines.

Three specimens taken in Lat. 65°.

<sup>4</sup> I distinguish by this name the genus *Melitta* of the *Monographia Apam Angliæ.*

## DESCRIPTION.

Body very black, slightly downy, minutely punctured. Apex of the nose white, whiteness lobed; inner orbit of the eyes below the antennæ white; vertex channelled below the eyelets; antennæ scarcely longer than the head: the projecting lobes of the collar terminate in a white tubercle; base-covers piceous; wings hyaline with dark nervures: metathorax longitudinally wrinkled: posterior tibiæ annulated at the base with white: abdomen more glossy than the rest of the body, almost naked, and scarcely punctured; it is narrower and more elliptical than in any other known species of the genus.

Family ANDRENIDÆ. *Andrenidans*.

CLVIII. Genus HALICTUS. Walck.

(369) 1. HALICTUS RUBICUNDUS. *Rubicund Halictus*.Halictus rubicundus. Steph. *Cat.* 5249, 5.Apis rubicunda. Christ. *Hymenopt.* 190, t. xvi, f. 10.Melitta rubicunda. Kirb. *Mon. Ap. Angl.* ii, 53, 14.Apis flavipes. Panz. *Fn. Germ.* lvi, t. 17.

Length of the body 5 lines.

Four specimens taken in the Expedition. Locality not stated.

## DESCRIPTION.

♀

Body black, downy. Head suborbicular, down grayish; space between the eyes broad: down on the thorax thicker, ferruginous: base-covers rufo-piceous: wings subhyaline; nervures and stigma testaceous; post-costal nervure black: legs thickly set with yellow hairs which shine like gold; tarsi testaceous: abdomen elliptical, downy with decumbent hairs; margin of the segments fringed with white hairs, the two first subinterruptedly; the ventral segments are similarly fringed, but the hairs are shorter.

(370) 2. \* HALICTUS CRASSICORNIS. *Thick-horned Halictus*.

*H. (crassicornis) niger pube cinerascenti-pallida; abdomine lævi nitidissimo; antennis crassiasculis; thorace dorso subcanaliculato, minutissime punctulatissimo.*

Thick-horned Halictus, covered more or less with subcinereous or whitish down; abdomen without punctures, very glossy; antennæ rather thick; back of the thorax slightly channelled and covered with innumerable very minute punctures.

Length of the body 3 lines.

A single specimen taken in Lat. 54°.

## DESCRIPTION.

♀

This little insect is so extremely like *Halictus lævis*,<sup>5</sup> that at first I regarded it merely as a variety of that species, but upon a closer inspection they appear to me distinct. In *H. crassicornis* the antennæ are proportionally more robust, but the principal difference lies in the sculpture of the thorax. In *H. lævis* that part is *visibly* punctured with scattered punctures, but in the insect I am describing, under a common lens, the punctures are scarcely discernible, but under a higher power, besides a slight channel drawn longitudinally, innumerable very minute punctures appear. In the former also the stigma of the upper wings is piceous, while in the latter it is testaceous. In other respects they are perfectly similar.

## CLIX. Genus ANDRENA. Fab.

(371) 1. \* ANDRENA IMPUNCTA. *Impunctured Andrena*.

*A. (impuncta) nigra albido villosa; tibiis posticis scopæ alba; abdomine lævi, antice albido, postice nigro, pilosa.*

Impunctured Andrena, black with white hairs, brush of the posterior tibiæ white; abdomen impunctured, anteriorly clothed with white hairs and posteriorly with black.

Length of the body  $5\frac{1}{2}$  lines.

A single specimen taken in the Journey from New York to Cumberland-house.

## DESCRIPTION.

♀

Body black, clothed with rather long whitish hairs, especially the face below the antennæ; hairs of the thorax rufescent; wings subhyaline a little darker at the tip; nervures testaceous, post-costal black; brush of the posterior tibia white: abdomen impunctured with the hairs of its anterior half white; the other hairs above and below black.

This species a good deal resembles *Andrena nitida*,<sup>6</sup> but the abdominal segments of that species are minutely punctured at the base, which is not the case with this, and the brush of the posterior tibiæ is of a different colour.

(372) 2. ANDRENA VARIANS. *Varying Andrena*.

*Apis varians.* Ross *Fn. Etrusc. Mant.* 142, 317. Panz. *Fn. Germ.* lvi, t. 12

*Melitta varians.* Kirb. *Mon. Ap. Engl.* ii, 117, 58.

*Andrena varians.* Steph. *Cat.* i, 300, 5179, 24.

Length of the body  $5\frac{1}{2}$  lines.

Three specimens taken in the Expedition. Locality not stated.

<sup>5</sup> Kirb. *Mon. Ap. Engl.* ii, 65, 24

<sup>6</sup> *Ibid.* ii, 104, 51.

## DESCRIPTION.

♀

Very like the species just described, but the head is clothed with black hair; that of the thorax and base of the abdomen is tawny-red: the brush of the posterior tibia is changeable, as the site varies, from black to white; the hairs of the underside of the body and of the last abdominal segment above are black, except those on the posterior thighs forming the flocculus, which are whitish, as are those of the anterior part of the abdomen.

b. MACROGLOSSA. Kirb.<sup>7</sup>

a. SOLITARIA. Kirb.

α. CUCULINA. Kirb.

Family NOMADIDÆ. *Nomadidans.*

CLX. Genus NOMADA. Scopoli.

(373) 1. \* NOMADA AMERICANA. *American Nomada.*

*N. (Americana) ferruginea, thoracis linea dorsali nigra; abdomine basi nigra, segmentis tribus primis apice fuscis.*

American *Nomada*, ferruginous, dorsal line of the thorax black; abdomen black at the base, with the three first segments brown at the tip.

PLATE VI, FIG. 3.

Length of the body  $4\frac{1}{2}$  lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body dark-ferruginous. Thorax with a longitudinal mesal black line, less distinct on the meta-thorax: breast with a black spot on each side: wings, as in the rest of the genus, embrowned with a white spot near the tip: thighs black at the base on the underside: first segment of the abdomen black at the base, and, with the second and third, brown at the apex.

This is the only American *Nomada* I ever saw, and Fabricius describes none from that country. It comes near *Nomada ruficornis* and *striata*, but it has only a single black stripe on the thorax.

<sup>7</sup> This tribe, to which the modern genera *Ammobates*, *Phileremus*, *Epeolus*, *Nomada*, *Pasites*, *Melecta*, *Crocisa*, and *Oxaea* belong, includes those bees that, like the cuckoo, deposit their eggs in the nest of other bees. See *Mon. Ap. Angl.* i, 150, and *N. D. D'H. N.* xxiii, Article *Nomada*.

β. DASYGAstra,<sup>8</sup> Kirb.

Family CHELOSTOMIDÆ. *Chelostomidans.*

CLXI. Genus CHELOSTOMA. Lat.

(374) 1. \* CHELOSTOMA ALBIFRONS. *White-fronted Chelostoma.*

*C. (albifrons) atra, pubescens, fronte sub antennis argenteo-alba; thorace cinereo, abdomine nigro hirsutis; hoc segmentis niveo ciliatis.*

White-fronted Chelostoma, black downy; front below the antennæ silver-white; thorax hirsute with cinereous hairs and abdomen with black; in the latter the segments are fringed with snowy ones.

Length of the body  $4\frac{1}{2}$  lines.

A single specimen taken in Lat. 65°.

DESCRIPTION.

♂

Body black, thickly punctured. Mouth bearded with white; mandibles carinated above, armed with two strong terminal teeth; nose square, flat, clothed with decumbent silver pile; antennæ filiform; scape black; the other joints are rufo-piceous underneath: trunk very hirsute with white or subcinereous hairs: wings a little embrowned, with black veins and base-covers: legs hairy: abdomen subcylindrical, hirsute with black hairs, incurved with the apex of the four intermediate segments fringed with white hairs; anal joint with a concavity above, obtuse; last ventral segment forcipate, rufo-piceous.

Family MEGACHILIDÆ. *Megachilidans.*

CLXII. Genus MEGACHILE. Lat.

(375) 1. MEGACHILE MARITIMA. *Maritime Megachile.*

*Megachile maritima.* Curtis *Brit. Ent.* v, 1218. Steph. *Cat.* i, 373, 5059, 6.  
*Apis maritima.* Kirb. *Mon. Ap. Angl.* ii, 242, 43.

Length of the body 7 lines.

<sup>8</sup> I include in this tribe all those solitary bees, the underside of whose abdomen in the females is covered with a pol-liniferous brush.

## DESCRIPTION.

Body black, pubescent, thickly and minutely punctured. Mandibles very large, triangular, protended, not crossing each other, armed with four terminal teeth: face between the eyes thickly clothed with brown hairs, which grow tawny towards the mouth: antennæ filiform: back of the trunk clothed with brown hairs less thickly in the disk; wings a little embrowned especially at the apex; nervures dusky; base-covers piceous: legs hairy with pale hairs: abdomen subovate with the three last segments fringed with pale hairs intermixed with black; the ventral hairs are tawny, paler towards the base, and darker towards the apex.

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 γ. LEIOGASTRA.
Family ANTHOPHORIDÆ. *Anthophoridans.*

## CLXIII. Genus ANTHOPHORA.

(376) I. \* ANTHOPHORA BOMBOIDES. *Humble-bee Anthophora.*

♂ *A. (bomboides) hirsuto-pallida, pedibus, abdominis ano ventreque hirsutie atra; fronte infra antennis alba: plantis posticis intus dente valido acuto armatis.*

Humble-bee *Anthophora*, hirsuties pale, with that of the legs, the tail, and underside of the abdomen, black; front below the antennæ white; first joint of the posterior tarsi armed on the inside with a strong sharp tooth.

Length of the body 6 lines.

A single specimen taken in Lat. 65°.

## DESCRIPTION.

Body black, thickly punctured, clothed like that of a humble-bee with dense pallid hairs. Head triangular, upper lip subquadrangular, white with a black dot at each upper angle; nose white, naked; a bunch of whitish hairs conceals the base of the antennæ; antennæ filiform, scarcely longer than the head; vertex with some black hairs thinly scattered; occiput fringed with whitish ones: trunk subglobose, set with longish white hairs: hairs of the legs mostly black; tarsi piceous; the first or dilated joint is armed with a strong and sharp tooth on the inner side at the base: wings subhyaline with black nervures: abdomen between globose and triangular, with the three first dorsal segments clothed with long whitish hairs, and the tail and ventral segments with black.

b. GREGARIA. Kirb.

Family BOMBIDÆ. *Bombidans.*

CLXIV. Genus BOMBUS.<sup>9</sup> Lat.

(377) 1. \* BOMBUS SYLVICOLA. *Wood-frequenting Bombus.*

*B. (sylvicola) supra hirsuto-flavicans; thorace fascia nigra; abdomine fascia ferruginea.*

Wood-frequenting Bombus, hirsute-yellowish; thorax with a black, abdomen with a ferruginous, band.

Length of the body 7 lines.

A single specimen taken in Lat. 65°.

DESCRIPTION.

General hirsuties of the upper side of the body yellowish. Head with a tuft of the same colour below the antennæ, and another at the vertex: trunk with a broad black band between the wings: hairs of the thighs yellowish; those of the tibiæ black; tarsi more or less covered with short decumbent pale hairs; wings somewhat embrowned, with black nervures: abdomen with a broad, mesal, ferruginous band.

This species comes very near *Bombus Sylvarum*.<sup>1</sup>

(378) 2. \* BOMBUS BOREALIS. *Northern Bombus.*

*B. (borealis) supra hirsuto-fulva; thorace inter alas, anoque nigris.*

Northern Bombus, hirsute-tawny; with the thorax between the wings, and the anus, black.

Length of the body 8 lines.

Several taken with the preceding.

<sup>9</sup> In the first volume of my *Monographia Apam Angliæ* (p. 209) I gave the characters of a tribe of humble-bees which differ so much in their characters as to indicate an important difference in their economy, and to entitle them to the rank of a genus. Their labrum is obtusangular; their mandibles obliquely truncated; their posterior tibiæ and plantæ are without any apparatus for carrying and kneading the pollen; their abdomen is inflexed and the last ventral segment projects on each side so as to form an angle; all characters not to be found in the other *Bombi*, no writer seems to have noticed this tribe, unless Klug's *Ptilopus* be synonymous with it, which I have not the means of ascertaining, if not already named I would call the genus by Jurine's name *Bremus*. *Apis campestris*, *Barbutella*, *vestalis* and *rupestris*, *Mon. Api. Angl.* belong to it.

<sup>1</sup> *Apis Sylvarum*, *Mon. Ap. Angl.* ii, 326, 82.



## DESCRIPTION.

Body clothed underneath with black, above with tawny, hairs. Face and vertex with a tuft of yellowish ones: thorax, between the wings, with a black hairy band; wings somewhat embrowned with black nervures: legs black: abdomen above with a thick coat of tawny hairs palest at the base; anus black.

---

(379) 3. \* BOMBUS TERRICOLA. *Ground-frequenting Bombus.*

*B. (Terricola) hirsuto-atra*; *thorace fascia antica, abdomineque magna media, flavis, ano albido.*

Ground-frequenting Bombus, hirsuto-black; thorax with an anterior yellow band, and abdomen with a large middle one; anus whitish.

## PLATE VI, FIG. 4.

Length of the body 9 lines.

Taken with the preceding.

## DESCRIPTION.

♀

This species approaches very near to *B. terrestris*, but the whole upper surface of the abdomen is clothed with yellow hairs, with the exception of the first segment the hair of which, and a band near the anus, are black; the extremity only of the latter is dirty-white; there are a few yellow hairs on the metathorax; and the wings are embrowned. In *B. terrestris* the abdomen is black, with a yellow band, and the two last anal segments are white; there are no yellow hairs on the metathorax, and the wings are much clearer.

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(380) 4. BOMBUS DERHAMELLUS. *Derham's Bombus.*

*Bombus Derhamellus.* Sam. *Compend.* 414. Steph. *Cat.* i, 381, 5150, 38.

*Apis Derhamella.* Kirb. *Mon. Ap. Angl.* ii, 363, 105.

Length of the body 8 lines.

Taken with the preceding.

## DESCRIPTION.

♀

Body hairy, black. Head with a tuft of yellowish hairs on the vertex: thorax yellow, black between the wings; wings more embrowned than in the male: abdomen yellow at the base with a black posterior band; anus ferruginous.

(381) 5. \* **BOMBUS PRATICOLA.** *Meadow Bombus.**B. (Praticola) hirsuto-flavicans; thorace inter alas nigro; ano ferrugineo.*

Meadow Bombus, hirsute-yellowish; thorax black between the wings; anus ferruginous.

Length of the body 7 lines.

Taken with the preceding.

## DESCRIPTION.

♀

Body black, clothed above with yellowish hairs. Head with a tuft of yellowish hairs below the antennæ, and on the vertex: thorax black between the wings, which are embrowned: legs with yellow hairs at the base: anterior half of the abdomen yellow, posterior ferruginous.

(382) 6. **BOMBUS VIRGINICUS.** *Virginian Bombus.**Bombus virginicus.* Fab. *Syst. Piez.* 346, 14.*Apis virginica.* Linn. *Mant.* i, 540; *Syst. Nat.* Gmel. v, 2784, 113. Fab. *Ent. Syst.* ii, 318, 5. Drury *Ins. t.* xliii, f. 1.

Length of the body 8½ lines.

Locality uncertain.

## DESCRIPTION.

♀

Hairs of the body in general black, except a tuft on the vertex behind the antennæ, the anterior and posterior extremities, and sides of the thorax, and the first segment of the abdomen, which are clothed with yellowish hairs: between the wings the thorax is black: the tarsi are rufous: the wings are rather embrowned, most so at the apex; nervures black.

## SUBCLASS HAUSTELLATA. Clair.

## ORDER HEMIPTERA. Lat.

## I. GEOCORISA. Lat.

Family PENTATOMIDÆ. *Pentatomidans.*

We are now arrived at the second great subdivision of the class *Insecta*, those that take their food by suction, which may be regarded as forming a series of Orders parallel with those of the first.<sup>2</sup>

Under this view I shall, with Dr. Leach and Mr. Stephens, consider the *Hemiptera* of Linné as restricted by Latreille, as really forming two Orders, analogous to the two first Orders of the *Mandibulata*, the *Coleoptera*, and the *Orthoptera*, calling, with them, the first of them by the old appellation *Hemiptera*, and the second *Homoptera*.

## CLXV. Genus PENTATOMA. Oliv.

(383) I. PENTATOMA CARNIFEX. *Executioner Pentatoma.*

*Cimex carnifex.* Fab. *Syst. Ent. Suppl.* 535, 162; *Syst. Rhyng.* 177, 113. Coq. *Ins.* ii, t. xix, f. 3.

Length of the body  $2\frac{1}{2}$  lines.

Several specimens taken in the road from New York to Cumberland-house.

## DESCRIPTION.

Very near *P. oleracea*, and probably its American representative. Body black, a little bronzed; grossly and thickly punctured, the punctures on the upper surface the deepest. Head subtrapezoidal; promusci pale in the middle; antennæ longer than the head: prothorax wider than long, with the lateral angles obtuse; signed with a sanguine cross, the arms of which extend from angle to angle; lateral margin, as well as that of the hemelytra and abdomen, white: scutellum longer than the thorax, obtuse with a subtriangular sanguine spot on each side near the apex: penultimate ventral segment of the abdomen margined with white: membrane white.

The specimens collected in the Expedition differ from the description of Fabricius in having the margin of the abdomen and that of the elytra white instead of sanguineous; but as the sexes of *P. oleracea* differ in the colour of their spots, this may be a sexual distinction. I received a specimen from Dr. Mac Culloch which agreed with the Fabrician description. In one specimen the markings and spots of the elytra and scutellum are very pale.

<sup>2</sup> See *Intro. to Ent.* iv, 421—25.

(384) 2. \* PENTATOMA VARIEGATA. *Variiegated Pentatoma.*

*P. (variegata) albo, sanguineo, nigroque variegata; prothorace subincarnato fasciis duabus nigris, posteriori basilaris subinterrupta; capite antice, scutello hemelytrisque margine laterali, albis; ventre macula magna biloba nigra, intus utrinque pubescente-cinerea.*

Variiegated Pentatoma, body variegated with white, sanguine, and black; prothorax inclining to flesh-colour, with two black bands, the posterior basilar, subinterrupted; the head anteriorly, lateral margin of the scutellum and hemelytra, white; underside of the abdomen with a large bilobed black discoidal spot, internally on each side pubescent with ash-coloured down.

Length of the body 3 lines.

A single specimen taken in the road from New York to Cumberland-house.

## DESCRIPTION.

Upper surface of the body punctured. Head, excluding the prominent eyes, subtrapezoidal, black, with the margin below the eyes, white; promusci extending to the base of the hind legs, pallid, black at the tip; antennæ black: prothorax transverse with lateral angles obtuse; pallid with a tint of flesh-colour especially at the angles, with a broad anterior and narrow posterior black band, both abbreviated on each side, and the latter almost divided into two; scutellum an isosceles triangle obtuse at the apex, black with the lateral margin pallid: hemelytra black with a pallid lateral margin, membrane embrowned: underside of the trunk black spotted with pallid and sanguine, punctured: tibiæ and apex of the thighs black; base of the thighs sanguine: abdomen below punctured at the sides, sanguine, with a large black discoidal spot, rather nearer the anus; nearly divided into two; on the sides and at the base naked, but a quadrangular space of the inner side of each division, is covered with decumbent subcinereous pile.

N. B. The antepectus is entirely pallid, but the socket, if it may be so called, of the legs is redder at the margin than the rest.

## xxx. \* Subgenus NEOTTIGLOSSA.

*Nose* shorter than the cheeks.

*Bed of the promusci* elevated on each side at the base.

In the typical *Pentatomæ* the part which I regard as analogous to a *nose* is of the same length with the two lateral lobes of the front, and the base of the cavity in which the promusci repose when unemployed is not so elevated.

(385) 3. \* PENTATOMA (*Neottiglossa*) TRILINEATA. *Three-lined P. Neottiglossa.*

*P. N. (trilineata) nigro-ænea, punctatissima; supra lurida punctis nigris; prothoracis lateribus, cum scutelli linea intermedia longitudinali, albis.*

Three-lined *P. Neottiglossa*, nigro-æneous, thickly punctured; above lurid with the punctures black; the sides of the prothorax and a longitudinal intermediate line common to it and the scutellum, white.

## PLATE VI, FIG. 6.

Length of the body 3 lines.

One specimen taken with the preceding.

## DESCRIPTION.

Body underneath and the head black, a little bronzed; thickly punctured with rather deeply impressed punctures; antennæ reddish at the base, with the two last elongated and incrassated joints black: prothorax black anteriorly, posteriorly lurid with the lateral margin and an intermediate longitudinal impunctured line, which extends nearly through the scutellum, white; the scutellum has also a white linear spot and dot on each side at the base: the punctures of the thorax, scutellum, and hemelytra are black; the membrane of the latter is white: the legs and sides of the breast are lurid spotted or punctured with black: the elevated basilar portion<sup>3</sup> of the bed of the rostrum is concave and has a semicircular outline, and its margin, viewed under a strong magnifier, is minutely serrulate.

## Family EDESSIDÆ.

CLXVI. Genus EDESSA. Fab.

(386) 1. \* EDESSA NEBULOSA. *Clouded Edessa.**E. (nebulosa) pallida, nigro punctata; supra fusco subnebulosa; abdominis margine nigro maculato.*

Clouded Edessa, pale, punctured with black; above clouded with brown; sides of the abdomen spotted with black.

Length of the body 3—4 lines.

Three specimens taken in the Journey from New York to Cumberland-house and in Lat. 65°.

## DESCRIPTION.

Body pale yellowish, sprinkled with black impressed punctures, most numerous and largest on its upper surface, which is clouded with reddish-brown, or blackish shades; the antennæ are of a reddish-yellow: the lateral angles of the prothorax are more acute than in the *Pentatomæ*; the scutellum is acuminate or attenuated at the apex: the lateral margin of the abdomen has a black spot on each segment, which sometimes appears on the ventral segments.

VARIETY B. Smaller, with the ventral segments of the abdomen rufescent, and the clouding of the upper surface of the body blacker: the thorax also is black posteriorly.

Family CAPSIDÆ. *Capsidans.*

CLXVII. Genus MIRIS. Fab.

(387) 1. \* MIRIS PUNCTULATUS. *Punctured Miris.**M. (punctulatus) lurido-subvirens; antennis brevioribus; subtestaceis: articulis duobus extimis nigris.*

Punctured Miris, lurid with a slight tint of green; antennæ shorter than the body, subtestaceous, with the two last joints black.

Length of the body 3 lines.

Two specimens taken in Lat. 65°.

<sup>3</sup> Plate VI, Fig. 6, a.

## DESCRIPTION.

Body oblong, pale, somewhat lurid with a very slight tint of green. Head triangular, impunctured; eyes a little embrowned, prominent; antennæ as long as the prothorax, subtestaceous with the two last joints and the underside of the first black: thorax, scutellum, and hemelytra very minutely punctured; a small portion of the prothorax adjoining the head is separated from the rest by an impressed sinuous line and is not punctured: legs pale; abdomen subpyramidal, black above, pale underneath. This appears to be the American representative of *M. pabulinus*.

(388) 2. \* *MIRIS VENTRALIS*. *Ventral Miris*.

*M. (ventralis) pallidus*; *hemelytris nigro subnebulosis*; *abdomine supra et infra nigro*; *ventre vittis duabus rufescentibus*.

Ventral *Miris*, pale; with the hemelytra faintly clouded with black; abdomen black above and below, with two ventral abbreviated reddish longitudinal stripes.

Length of the body 3 lines.

Taken with the preceding.

## DESCRIPTION.

Very similar to *M. punctulatus*, and perhaps only a variety, but the hemelytra are faintly clouded with black, the underside of the abdomen is dusky with two longitudinal reddish spots or stripes.

Family ACANTHIADÆ. *Acanthiadans*.

CLXVIII. Genus ARADUS. Fab.

(389) 1. \* *ARADUS TUBERCULIFER*. *Tubercle-bearing Aradus*.

*A. (tuberculifer) niger*, *prothorace antice lobato*, *supra sexcarinato*, *scutello margine reflexo*, *disco tuberculum subhemisphericum gerente*.

Tubercle-bearing *Aradus*, black; prothorax lobed anteriorly, above six-ridged; margin of the scutellum reflexed, bearing a subhemispherical tubercle on its disk.

PLATE VI, FIG. 5.

Length of the body  $3\frac{3}{4}$  lines.

A single specimen taken with the preceding.

## DESCRIPTION.

Body dull black, very flat. Head with the nose prominent and obtuse, and the front armed with a sharp tooth on each side; antennæ black with the second joint rufous all but the tip; the last joint white at the tip: prothorax with a short anterior truncated lobe, widest in the middle where the sides form a rounded angle; emarginate posteriorly; edge very minutely serrulate; six longitudinal ridges occupy the disk of the thorax, the two external ones are abbreviated and rather obtuse; scutellum with a reflexed margin, and bearing on its disk a large subhemispherical tubercle: hemelytra reticulated with cinereous, especially the membrane: abdomen with a broad margin, and the last segment bilobed with incurved lobes.

This species appears to be related to *A. depressus* and *elevatus* Fabr. and to *A. quadrilineatus* of Say.<sup>4</sup>

(390) 2. \* ARADUS AFFINIS. *Kindred Aradus.*

*A. (affinis) niger, prothorace non lobato; postice dilatato angulis obtusis; disco sexcarinato; scutello vix tuberculato.*

Kindred Aradus, black with the prothorax not lobed; dilated posteriorly with obtuse angles; disk six-ribbed; scutellum scarcely tuberculated.

Length of the body  $2\frac{1}{2}$  lines.

Several taken with the preceding.

## DESCRIPTION.

Extremely similar to *A. tuberculifer*, but much smaller. Antennæ entirely black: prothorax not extended anteriorly, so as to form a lobe; lateral abbreviated ridge more obtuse, resembling a tubercle: margin of the abdomen with a white point at the apex of each segment; anus not lobed.

Family REDUVIADÆ. *Reduviadans.*

## CLXIX. \* Genus REDUVIOLUS. Kirb.

*Body* linear-oblong.

*Promuscis* slender, inflexed, not reaching beyond the base of the anterior legs.

*Antennæ* inserted below the eyes, subsetaceous, five-jointed? penultimate joint the longest.

*Stemmata* small, sessile.

*Eyes* hemispherical.

*Prothorax* bilobed.

N. B. In *Reduvius* the promuscis is thick; the antennæ are inserted between the eyes; the eyes are kidney-shaped; the stemmata are large and set in a tubercle; and the body is oblong.

<sup>4</sup> *Journ. Acad. Nat. Sc. Philad.* IV, iv, 326.

(391) I. \* REDUVIOLUS INSCRIPTUS. *Inscribed Reduviolus.*

*R. (inscriptus) pallidus; capite prothoracisque lobo antico nigro inscriptis; scutello nigricanti, apice callis duobus elevatis albis; abdomine supra nigro, subtus vittis tribus nigris.*

Inscribed Reduviolus, pale, with head and anterior lobe of the prothorax inscribed with black; scutellum blackish with two white elevated callosities at the apex; abdomen black above, underneath with three black stripes.

## PLATE VI, FIG. 7.

Nabis obsoletus. Steph. *Cat.* ii, 351, 9701, 6?

Length of the body 3 lines.

A single specimen taken with the preceding.

## DESCRIPTION.

Body of a pale or yellowish white, lineari-oblong, widest posteriorly. Antennæ shorter than the body, rufous, three last joints very slender: head and prothorax streaked and dotted with black; with the anterior lobe of the latter constricted next the head, separated from the posterior by an impressed sinuated black line; scutellum black with two pale longitudinal elevations, thickest anteriorly: hemelytra with the nervures whiter than the rest of their substance; with three blackish discoidal dots arranged longitudinally from the middle to the membrane: thighs dotted with black, the anterior pair being incrassated and thicker than the intermediate, and these than the posterior, which are not incrassated: back of the abdomen black, with a white lateral margin, underneath with three longitudinal black stripes.

## CLXX. \* Genus CHIROLEPTES. Kirb.

*Promuscis* inflexed, slender, naked, reaching the base of the first pair of legs.

*Antennæ* capillaceous with the scape incrassated, second joint very long, inserted before the eyes.

*Stemmata* small, sessile.

*Body* linear: head setting on an elongated neck.

*Prothorax* bilobed, bell-shaped, posteriorly dilated; arms raptorious.

This genus differs from *Zelus*, Fab. principally in its slenderer promuscis the flexure of which is a very acute angle; its stemmata also are sessile, but more particularly in having its arms raptorious<sup>5</sup> like those of a *Mantis*, *Zelus femoratus* belongs probably to this genus.

<sup>5</sup> *Introd. to Ent.* iv. 354, 13.



(392) 1. \* CHIROLEPTES RAPTOR. *Robber Chiroleptes.*

*C. (Raptor) niger, nitidus; prothorace hemelytrisque obscuris; his nigro-fuscis, albido lineatis et marginatis; scutello apice albo; pedibus pallidis; humeris apice nigricantibus.*

Robber Chiroleptes, black, shining; prothorax and hemelytra dull; the latter black-brown, with white lateral margin and lines; scutellum white at the tip; legs pale, shoulders blackish at the tip.

Length of the body nearly 4 lines.

Two specimens taken in the road from New York to Cumberland-house.

## DESCRIPTION.

Body black and shining. Head subrhomboidal, connected with the prothorax by a long cylindrical and transversely wrinkled neck, which altogether gives the animal a serpentine aspect: legs pale; shoulders much incrassated, blackish at the tip, armed below with several strong spines; cubits with a single intermediate one: prothorax bell-shaped, black, dull from inconspicuous pubescence: scutellum dull, white at the tip: hemelytra dull from pubescence, blackish-brown, with paler lines which extend into the membrane; lateral margin white: abdomen black, with the ventral lateral margin white.

This species approaches very near to Say's *Reduvius raptorius*,<sup>6</sup> but it is distinct.

## CLXXI. \* Genus NABICULA. Kirb.

*Promuscis* inflexed, not arched, slender, reaching to the intermediate legs, naked, first joint elongated.

*Antennæ* mutilated in the specimen, inserted before the eyes; scape elongated.

*Stemmata* obsolete.

*Eyes* hemispherical.

*Body* apterous, linear, head elongated, subtriangular: *prothorax* bilobed, anterior lobe bell-shaped; posterior short, flat, scarcely dilated: *hemelytra* with a very narrow membrane: *arms* raptorious.

This genus differs from *Nabis*, as *Reduviolus* from *Reduvius* and *Chiroleptes* from *Zelus*, in not having an arched *promuscis*; the first joint of which is longer than it is in *Nabis*, and naked; the *stemmata* are not visible under a common lens, and the arms are raptorious.

<sup>6</sup> *Journ. Acad. Nat. Sc. Philad.* IV, ii, 327.

(393) 1. \* NABICULA SUBCOLEOPTRATA. *Subcoleoptrate Nabacula.**N. (subcoleoptrata) aptera, nigra, obscura; elytris punctatis margine laterali, antennis, pedibusque, rufis.*

Subcoleoptrate Nabacula, without wings, dull-black; elytra punctured with their lateral margin, and the antennæ and legs, rufous.

Length of the body 4 lines.

Taken with the preceding.

## DESCRIPTION.

Body apterous, black, without any gloss. Head subtriangular, antennæ rufous: thorax bilobed, first lobe thrice as long as the last, bell-shaped; last a little wider than the first, flattish: hemelytra a little shorter than the abdomen, brownish-black, punctured; lateral margin obscurely rufous; membrane scarcely differing in substance or colour from the rest of the hemelytrum: legs rufous? abdomen obtusangular underneath.

Family HYDROMETRIDÆ. *Hydrometridans.*

CLXXII. Genus GERRIS. Lat.

(394) 1. GERRIS RUFO-SCUTELLATA. *Red-scutellum Gerris.*

*Gerris rufo-scutellata.* Lat. *Gen. Crust. et Ins.* iii, 134, 2. *Steph. Cat.* ii, 352, 9721, 3.  
*La Punaise coureuse d'eau.* *Stoll. Cimic.* 64, 108, t. xv, 108, &c. A.

Length of the body  $6\frac{1}{2}$  lines.

One specimen taken in Lat. 65°.

## DESCRIPTION.

Body underneath black, covered with silver pile. Head brown-black, subpilose; two first joints of the promusis black and robust, the remainder rufous and more slender; antennæ rufous with the last joint black; eyes large, subhemispherical, brown: prothorax dull-ferruginous, with the lateral margin, a dorsal subelevated line, and the scutellum, paler; legs rufous, pale at the base; hemelytra dull-ferruginous, with the lateral margin and nervures black: the bead that forms the lateral margin of the abdomen, and the two last segments, are rufous; the anal spines are very little shorter than the tail.

The American specimen seems to vary a little from the description of the European ones, but not sufficiently to warrant its being described as a new species.

(395)

2. GERRIS LACUSTRIS. *Lake Gerris.*

- Gerris lacustris. Fab. *Ent. Syst.* iv, 187, 1. Lat. *Hist. Nat.* xii, 275, t. xcvi, f. 7; *Gen.* iii, 134, 3. Lam. *An. sans Vertèbr.* iii, 514, 3. Steph. *Cat.* ii, 352, 9723, 5. Kirb. and Sp. *Introd. to Ent.* ii, 360.  
 Cimex lacustris. Linn. *Syst. Nat.* ii, 732, 117; *Fn. Suec.* 970. Geoffr. *Ins.* i, 463, 59. Scop. *Carn.* 394. Vill. *Ent.* i, 537, 203. Schrank. *Enum.* 557.  
 Hydrometra lacustris. Fab. *Syst. Rhyng.* 256, 1. Walck. *Fn. Paris*, ii, 350, 1.  
 Cimex Naias. De Geer *Ins.* iii, 311, 39, t. xvi, f. 7.  
 La punaise Nayade. Geoffr. *Ins.* i, 463, 59. Stoll. *Pun.* 42, t. ix, f. 63.  
 Rai. *Hist. Ins.* 57, No. 6. Bauh. *Boll.* 213, f. 1. List. *Mut. t.* v, f. 4, 5. Bradl. *Nat. t.* xxvi, f. 2, D. Sulz. *Ins.* t. xi, f. 78.

There were three pupæ of this species taken, which do not appear to differ from the European specimens.

## II. HYDROCORISA. Lat.

Family CORIXIDÆ. *Corixidans.*

CLXXIII. Genus CORIXA. Geoff.

(396)

1. CORIXA STRIATA. *Streaked Corixa.*

- Corixa striata. Lat. *Hist. Nat.* xii, 289; *Gen.* iii, 151, 1. Lam. *An. sans Vertèbr.* iii, 521, 1. Leach *Linn. Trans.* xii, 16, 2. Sam. *Compend.* 228, 2. Steph. *Cat.* ii, 354, 9739, 5.  
 Sigara striata. Fab. *Ent. Syst.* iv, 60, 2; *Syst. Rhyng.* 104, 2. Schellenb. *Cimic. t.* xi. Ced. *Fn. Ingr.* 840.  
 Notonecta striata. Linn. *Syst. Nat.* ii, 712, 2; *Fn. Suec.* 904. Vill. *Ent.* i, 475, 2. Scop. *Carn.* 349.  
 Nepa striata. De Geer *Ins.* iii, 389.  
 Pet. *Gazoph. t.* lxxii, f. 7. Rös. *Ins. App.* i, 177, t. xxix. Joblot. *Micr.* i, 1, t. vii, f. 2, 3. Schæff. *Elem. t.* 1. Stoll. *Cimic.* 65, t. xiii, B.

Length of the body 3—3½ lines.

Many specimens taken with the preceding.

## DESCRIPTION.

Body yellowish, depressed, naked, smooth. Head inflexed, obtuse; eyes brownish, triangular; antennæ inserted before the eyes under the lateral margin; scape incrassated; remaining joints together are setiform: prothorax subtriangular, with the hemelytra, brown, streaked transversely, with irregular yellow streaks; epipleura not streaked, pale-yellow; breast black, spotted with yellow on the sides; legs yellow; anterior and posterior tarsi natatory; the latter longer than the tibiæ: abdomen with the first ventral segment, and an abbreviated basilar band of the second, black.

VARIETY B. With the first joint of the posterior tarsi black at the tip. This may be a distinct species, there were seven specimens distinguished by a black annulet surrounding the terminal half of the first dilated joint of the tarsus in question.

(397) 2. \* CORIXA CARINATA. *Ridged Corixa.*

*C. (carinata) corpore subtus, capite, pedibusque, flavidis; occipite postice medio transverse, verticeque longitudinaliter, obtusangulis; prothorace carinato nigricanti, flavido transverse lineato; hemelytris nigricantibus flavido irroratis.*

Ridged Corixa, with the body underneath, head, and legs pale-yellow; the hind-head posteriorly in the middle transversely, and the vertex longitudinally, obtusangular; prothorax ridged, brownish-black, transversely streaked with yellowish; elytra brownish-black sprinkled with yellowish.

Length of the body 4 lines.

Two specimens taken with the preceding species.

## DESCRIPTION.

This species appears to come very near to Geoffroy's *Corise*,<sup>7</sup> which is evidently not *C. striata*; and also to *C. stagnalis* of Dr. Leach;<sup>8</sup> but as neither of these authors mention the ridge of the thorax, which is conspicuous, it appears to be distinct. Body yellow underneath, embrowned at the insertion of the legs. Head yellow; front broad and flat; labrum transversely tricarinate; occiput obtusangular; vertex with an obsolete longitudinal ridge issuing from the angle of the occiput; prothorax with a longitudinal intermediate ridge, transversely streaked with yellow and brownish-black; hemelytra sprinkled, and towards the base almost streaked, with black and yellow. In other respects this species resembles *C. striata*.

(398) 3. \* CORIXA PLANIFRONS. *Flat-fronted Corixa.*

*C. (planifrons) subtus nigra, utrinque flavido maculata; occipite medio obtusangulo; fronte retusa; prothorace carinato, nigricanti, flavido transverse lineato; hemelytris nigricantibus flavido irroratis.*

Flat-fronted Corixa, underneath black, with the sides spotted with pale-yellow; occiput obtusangular in the middle; front blunt; prothorax carinated, brownish-black, transversely streaked with pale yellow; hemelytra brownish-black sprinkled with yellow.

Length of the body 4 lines.

Two specimens taken with the preceding.

## DESCRIPTION.

This species differs from the preceding in having the under side of the body black, with two pale spots on each side of the breast, and the anal half of the abdomen pale-yellow. The head is yellow, the vertex is ridged longitudinally and separated from the front by a transverse curvilinear ridge; and from which the anterior part of the face is inflexed, plane or slightly concave; in other respects this species exhibits exactly the same characters with *C. carinata*. They may perhaps be sexual varieties.

<sup>7</sup> *Ins.* i, 478, 1, t. ix, f. 7.

<sup>8</sup> *Linn. Trans.* xii, 16.

Family NOTONECTIDÆ. *Notonectidans.*

CLXXIV. Genus NOTONECTA. Linn.

(399) I. \* NOTONECTA INSULATA. *Islet Notonecta.*

*N. (insulata) subtus nigra, supra flavida; hemelytris margine laterali fusco flavido maculato, apice nigris maculis duabus insulatis albidis anteriori triangulari, posteriori reniformi.*

Islet Notonecta, underneath black, above yellowish; lateral margin of the hemelytra brown spotted with yellow; apex black with two insulated whitish spots, the anterior one triangular and the posterior kidney-shaped.

Length of the body  $6\frac{3}{8}$  lines.

A single specimen taken.

## DESCRIPTION.

Body underneath black, above yellowish. Head yellowish, with a brownish longitudinal stripe between the eyes, which are reddish: scutellum very black, velvety: hemelytra with the lateral margin brown spotted with yellow; the posterior half of the hemelytra is brown anteriorly, black-brown in the middle, fuliginous at the apex; in this darkened portion anteriorly is a yellowish triangle connected with the last marginal spot, and posteriorly is a white kidney-shaped spot followed by the sooty apex: breast very hairy with longish fuliginous hairs: legs yellowish.

## ORDER HOMOPTERA. Leach.

ii. RANATRÆ. Linn.

Family CERCOPIDÆ. *Cercopidans.*

CLXXV. Genus CERCOPIS. Fab.

(400) I. CERCOPIS MARGINELLA. (Fabricius.) *Red-bordered Cercopis.*

*Cercopis marginella.* Fab. *Syst. Rhyng.* 96, 44.

——— *lateralis.* Fab. *Suppl.* 524, 24. Coq. *Ins.* i, 35, t. ix, f. 3.

Length of the body  $3\frac{1}{4}$  lines.

Taken with the preceding and at Carlton-house in April.

## DESCRIPTION.

Body black, dotted and inscribed with white. Hemelytra embrowned; nervures black; lateral margin sanguine: margin of the abdomen edged with white.

## ORDER LEPIDOPTERA.

## I. DIURNA. Lat.

Family PAPILIONIDÆ. *Papilionidans*.

CLXXVI. Genus PAPILIO. Linn.

(401) I. PAPILIO TURNUS. *Turnus Papilio*.

Papilio Turnus. Linn. *Mant.* i, 536; *Syst. Nat. Gmel.* v, 243, 338. Fab. *Ent. Syst.* iii, 29, 86. Say. *Amer. Ent.* iii, t. xl.

Alcidamas. Cram. *Pap.* iv, t. xxxvii, f. A. B.

Mouff. *Ins.* 98? Jonst. *Ins. t. v, f. 1?* Rai. *Hist. Ins.* iii, 2? Cates. *Carol. t. xvii.*

Expansion of the wings  $3\frac{3}{4}$  inches.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body yellow. Head above black, below tufted with yellow: trunk and abdomen striped with black and yellow: wings yellow; primaries with five abbreviated black subangular bands; the two inner ones being common to both wings, the innermost of these bands is marginal and its lower attenuated extremity converges with that of the penultimate band, reckoning from the tip; the anterior margin of the primary wings is edged with black, with yellow scales intermixed, and two longitudinal yellow streaks between the middle and the apex; the posterior margin has a broad black stripe with an articular<sup>9</sup> yellow band; in the secondary wings the discoidal basilar area is distinguished by a black streak at the apex; the posterior margin has a broad black band with a double transverse series of crescents, each series consisting of four spots, the internal series being bluish, and the external yellow; there is besides an orange spot at the anal angle, and another at the external margin; this margin is indented, with the concavities fringed with yellow; the angle between the fourth and fifth indentures projects into a short tail; the underside of the wings is yellow, but paler than the upperside; there are also the five black bands: the posterior margin of the primary wings has an interior ash-coloured band and exterior yellow one, included between three narrow black ones: the underside of the secondary wings is not very different from the upper, except that the posterior margin is not nearly so black; and at the anal angle there is a spurious ocellus consisting of a black semicircle, a blue crescent, a black, and lastly an orange transverse spot. The legs of this species are black, as are also the nervures of both wings.

Fabricius says that this species is thrice the size of *P. Machaon*, but the specimens I received, of which there were several, were of the same size. In Mouffet's figure, referred to by Ray, which appears to belong to the insect here described, the expansion of the wings is eight inches, but his imagination has evidently been employed in drawing that figure, which is represented with falcated primary wings. Probably it was drawn from a mutilated specimen. He has made the blue spots of the secondary wings circular, looked at in certain lights they appear so. Probably those in the warmer parts of America may be larger than the northern ones.

<sup>9</sup> *Introd. to Ent.* iv, 297, 39, c.

Family COLIADÆ. *Coliadans.*

CLXXVII. Genus COLIAS. Fab.

(402) I. COLIAS EDUSA. (Fabricius.) *Edusa Colias.*

*Colias Edusa.* Fab. *Syst. Glossat.* in Illig. *Mag.* Steph. *Illustr. Haustell.* i, 12, 3. Jerm. *Butt.* 89. Dun. *Butt. (Nat. Libr. Ent.* iii, 103), t. v, f. 2.

—Aurora. Meig. *Schmett.* i, 26, 2, t. viii, f. 1.

*Papilio Edusa.* Fab. *Ent. Syst.* iii, 206, 643. Hubn. *Schmett.* t. lxxxv, f. 429, 430, ♂ 431, ♀. Panz. *Fn. Germ.* 1. t. 17. Don. *Brit. Ins.* iii, 60, t. ccxxxviii, f. 2, ♀. Bork. *Rhein. Mag.* i, 231, 4. Haw. *Lep.* 11, 10. Stew. *Elem.* ii, 121. Vill. *Ent.* iv, 25. Ochs. *Schmett.* ii, 173, 1.

*Papilio Hyale.* Wienn. *Verz.* 165, 3. Scop. *Carn.* 455. Schæff. *Icon.* t. cxlix, f. 1—3. Rös. *Ins.* iii, t. xlvi, f. 4, 5. Esp. *Schmett.* i, t. iv, f. 3, &c. Herbst. *Schmett.* t. cxiv, f. 1—4. Berg. *Ins.* t. xvi, f. 3, 4, t. xxxii, f. 1. Fuess. *Ins.* 20, 554. Cram. *Pap.* t. ceceli, fig. E—H. Bork. *Schmett.* 119, 254, 3. Schneid. *Schmett.* 64, 11. Lang. *Schmett.* ii, 13, 69—72. Ross. *Fn. Etrusc.* ii, 977. Schrank. *Fn. Boic.* 1296.

*Papilio Electra.* Lew. *Pap.* t. xxxii, f. 1—3.

Le Souci. Geoffr. *Ins.* ii, 75, 58. Ernst. *Pap.* i, 226, t. liv, f. 111, &c.

Expansion of the wings 2—2½ inches.

Several specimens from North America.

## DESCRIPTION.

♂

Antennæ rose-coloured with the club somewhat embrowned: primary wings above saffron-coloured with a broad, deep-brown margin, a little indented internally with the nervures, especially those next the apex, and the fringe, pale yellow; a black oblong spot marks the disk nearer the anterior than the posterior margin; anterior margin paler than the rest of the wing; underneath this wing is paler, the black discoidal submarginal spot has a minute white pupil, and there is a series of about six black spots increasing in size as they approach the interior margin parallel to the posterior one; the three first of these little spots are very indistinct: the secondary wing is also saffron-coloured and has usually a spot of a deeper colour in the disk; the margin is also deep-brown, the brown colour terminating in a point short of the anal angle; parallel with the abdomen both wings are embrowned; beneath this wing is of the same colour with the primary, and has a series of indistinct black spots parallel with the margin; in the middle of this side of the wing is a sesquialterous compound eyelet,<sup>1</sup> the exterior circle or atmosphere<sup>2</sup> of which is composed of rusty brown scattered scales, which to form the iris are more condensed, while the pupil is formed of silvery ones.

VARIETY B. With the dark brown marginal band of the primary wings rather narrower, and the lesser eyelet of the under side of the secondary one without a silvery pupil.

C. Like the preceding, with the eyelet just named single; these two varieties are smaller than A.

<sup>1</sup> *Introd to Ent.* iv, 296, 24, 30.

<sup>2</sup> *Ibid.* 295, 20, c.

♀

Brown marginal band of the primaries broader, internally more deeply indented than those of the male, and spotted irregularly with yellow.

The American specimens of *C. Edusa* seem to vary from the English as described by Mr. Stephens, in having the black discoidal spot on the underside of the primary wings ocellated, and from that described by Latreille,<sup>3</sup> in having the series of marginal spots on the underside of the secondaries blind.

In the two varieties of the male above described, the passage to a simple eyelet on that wing from the sesquialterous one, is by the disappearance of the silvery pupil in B.

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CLXXVIII. Genus PONTIA. Fab.

(403) I. \* PONTIA CASTA. *Chaste Pontia.*

*P. (casta) alis rotundatis integerrimis albis ; primoribus basi costa nigricanti.*

Chaste Pontia, wings rounded, very intire, white ; the primary with the costal nervure blackish at the base.

PLATE III, FIG. 1.

Expansion of the wings 2 inches.

Three specimens taken in Lat. 65°.

DESCRIPTION.

Antennæ black annulated with white : wings white, the primaries at the anterior margin sprinkled with blackish scales ; secondaries underneath with a few scattered black scales accompanying the nervures ; the wings are rounded and very intire.

I received a species of this genus from Dr. Harris under the name of *Pontia oleracea* which *P. casta* approaches, but that is more strongly marked ; its secondaries are pale-yellow underneath, and, as in *P. Napi*, accompanied on both sides by a broad greenish line.

<sup>3</sup> *N. D. D'H. N.* vii, 338.



Family NYMPHALIDÆ. *Nymphalidans.*

CLXXIX. Genus MELITÆA. Fab.

(404) 1. \* MELITÆA SELENIS. *Crescent Melitæa.*

Melitæ Tharos. Drury. *Illustr.* ii, t. lxxi, f. 5, 6?

*M. (Selenis) alis integerrimis: primoribus supra nigro-fuscis fulvo maculatis et subfasciatis, subtus fulvis nigro et pallido maculatis; secundariis supra nigris fulvo maculatis, macula magna discoidali irregulari fulvo; subtus pallidis fulvo subfasciatis et nebulosis; lunula marginali albida.*

Crescent Melitæa, wings very entire; primaries above black-brown, spotted and partially banded with tawny; underneath tawny, with black and pallid spots; secondaries above black spotted with tawny, with a large discoidal irregular orange-tawny spot; underneath pallid, clouded and partially banded with tawny, with a whitish marginal crescent.

Expansion of the wings 1 inch and 5 lines.

Taken in North America.

DESCRIPTION.

Antennæ black, annulated with white; knob black, compressed: primary wings dark-brown, spotted, and partially banded, with fulvous deeper or paler, viz. a series of five irregular spots, the mesal one the largest and palest; a transverse discoidal angular forked band, and a pale marginal crescent; the margin is marked with very indistinct whitish crescents: secondaries above brown, with a large discoidal tawny-orange spot, in which anteriorly two areas are formed by confluent brown lines; and posteriorly there is a series of round black spots, those nearest the anal angle being the largest; in the brown margin are five whitish crescents, three of which are evanescent; the two nearest the above angles being most conspicuous. The underside of the primaries is tawny-orange with paler spots at the apex of the wing; next the interior margin is a sesquialterous black spot; next the anterior is an abbreviate macular band of the same colour, consisting of four black spots; and adjoining the anal angle is an angular, abbreviated, black band; parallel with the posterior margin is an indented orange line. The underside of the secondaries is tawny, at the base reticulated and clouded by darker lines and spots; the apex also is clouded, and at the angles reticulated; parallel with the posterior margin is a series of brownish-black spots; at the margin, between the fifth and sixth nervures, is a whitish crescent, two or three pale evanescent ones are observable also near the posterior or external angle.

CLXXX. Genus ARGYNNIS. Fab.

(405) 1. ARGYNNIS CYBELE. *Cybele Argynnis.*

Argynnis. Fabr. *Syst. Glossat.* in *Illig. Mag.*

Papilio Cybele. Fabr. *Ent. Syst.* iii, 145, 445.

—— Daphnis. Cram. *Pap.* v, t. 57, f. E. F.

Expansion of the wings 3 inches.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Wings entire, tawny: primaries above brown-black, at the base reticulated with the same colour; in the disk is a transverse macular submarginal band, consisting of eight round black spots; next follows a marginal internally dentated black band including in it a macular one, consisting of eight oblong pale spots, those nearest the anal angle being tawny; on the underside this wing is tawny, similarly reticulated and spotted with the upper side, only the teeth of the dentated band are very acute, the seven external ones including a silver triangular spot; there are also three silver spots in a triangle just above the other near the costa, the intermediate one being the largest: the basilar half of the secondaries is brown-black, the apical tawny with six black dots arranged transversely in a curve, followed by six black crescents, a line of the same colour, and a black and tawny marginal band; on the under side there are twenty-two silver spots, viz. six triangular ones forming a band near the margin; seven subquadrangular, forming an angular band in the disk, and nine varying in shape and size placed irregularly at the base, making in all thirty-two silver spots: the fringe is white, barred with black.

(406) 2. ARGYNNIS MYRINA. *Myrina Argynnis*.

Papilio Myrina. Fab. *Ent. Syst.* iii, 145, 444. Cram. *Pap.* xvi, t. clxxxix, f. B. c.  
Melitæ Myrina. Say. *Am. Ent.* iii, t. xlvi.

Expansion of the wings  $1\frac{1}{2}$  inch.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Wings above tawny-orange, anteriorly reticulated with black; a submarginal macular band is formed on each wing of six round black spots; there is also an acutely dentated marginal band, each tooth inclosing a tawny spot: primaries underneath inscribed with costal black bars expressing the number 130, with nine irregular black spots on the disk; with eight silver ones in the margin, above which are two others: the secondaries underneath are ferruginous with paler spots and twenty-one silver ones arranged in bands; at the base is an area surrounded by silver spots in the centre of which is an eyelet with a pale narrow iris and black pupil; there is also a series of black spots between the two first bands of silver spots.

(407) 3. ARGYNNIS APHRODITE. (Fabricius.) *Aphrodite Argynnis*.

Argynnis Aphrodite. Fab. *Ent. Syst.* iii, 144, 443.

Expansion of the wings  $2\frac{1}{4}$ — $2\frac{3}{5}$  inches.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Primary wings tawny-orange, brown at the base; spotted, inscribed and reticulated with black; at the posterior margin is a deep orange band edged with black; above this a series of black crescents succeeded by one of round spots; the costal margin is barred with black, the three anterior bars being angular, and the fourth shaped like the letter P; this is followed by three others less distinct; the reticulations of the disk terminate posteriorly in a zigzag black band; underneath at the external angle are five, silver, marginal triangles surmounted with black, and above them near the costa two others: the secondaries have a marginal series of black crescents; above which the wing is spotted with black, with a few paler spots surmounted by a black crescent: underneath they are reddish-brown, with a pale tawny marginal band; a marginal series consisting of seven silver triangular spots edged with black next follows, and a second series consisting of the same number, differing in shape, edged also with black, the intermediate one being the smallest; a third series succeeds of four spots, that next the costa is crescent-shaped, the second is subtriangular divided by a black line, the third is oblong and the fourth minute; at the base are five spots varying in form, on the shoulders is also a silver spot, and the inner margin is silvered but less conspicuously: fringe pale, barred with black.

Fabricius does not mention the two costal silver spots of the prone surface of the primaries, in some specimens these appear not silvered.

In the smaller specimen the marginal band of the primaries is nearly black, the tawny colour being nearly evanescent.

(408) 4. ARGYNNIS FREYA. *Freya Argynnis*.

*Argynnis Freya*. God. *Encycl. Method.* ix, 273, 37.

*Papilio Freya*. Hubn. *Schnett.* 2, 13, t. x, f. 55, t. xi, f. 560. Herbst. *Schnett.* x, 129, t. cclxxii, f. 7—10. Thunb.

*Diss. Ins. Suec.* iii, 49, t. v, f. 14. Schneid. *Mag.* i, 420. Illig. *Mag.* i, 452, iii, 195. Ochs. *Schnett.* i, 78, 11. Esp. *Schnett.* contin. t. six.

*Papilio Dia lapponica*. Esp. *Schnett.* i, t. xcvi, cont. t. lii, f. 3.

Expansion of the wings  $1\frac{1}{2}$  inches.

Three specimens taken near Cumberland-house, Lat. 54°.

## DESCRIPTION.

Stalk of the antennæ yellow with a large compressed dark-brown knob, red underneath at the base and tip: wings tawny, dark-brown at the base, with a narrow black band occupying the posterior margin, followed by a series of black arrow-headed spots; next to which in the primaries is a zigzag angular discoidal black band, and at the anterior margin five transverse spots of the same colour; the underside of these wings is tawny variegated with black and white spots and lines: the secondaries are underneath reddish-brown variegated with white and yellow spots and bands, with a discoidal arrow-headed white spot in the centre; the fringe of the wings is alternately white and yellow.

Family VANESSIDÆ. *Vanessidans*.

CLXXXI. Genus VANESSA. Fab.

xxxi. Subgenus GRAPTA K. POLYGONIA Hubn.

Secondary wings inscribed underneath.

(409) 1. \* VANESSA (*Grapta*) C. ARGENTEUM. *Silver C. V. Grapta*.*V. G. (C. argenteum) alis angulatis fulvis nigro maculatis, subtus nigro cinereoque marmoratis et nebulosis; secundariis C argenteo inscriptis.*Silver C. Vanessa (*Grapta*) with angulated tawny wings, underneath marbled and clouded with black and cinereous; the secondary inscribed with a silver C.

PLATE III, FIG. 6, 7.

Expansion of the wings 2 inches.

A single specimen taken in Lat. 54.

## DESCRIPTION.

Antennæ brown above, pale below; knob pale at the tip: wings angular, cut out into sinuses which are dentated: primaries above orange-tawny, with five black round spots forming a right-angled triangle with each other; two triangular costal bars and posterior margin black; above the black marginal band is a series of paler tawny triangular spots; underneath the wings are veined, marbled and clouded with black, brown, and cinereous; the primaries have a very broad paler band near the margin: secondaries above dull-orange, at the base with a black spot or two near the anterior margin; the other half is black with a transverse series of triangular pale spots, the interior ones being nearly obsolete; the disk is inscribed with a slender silver somewhat obtusangular C, with the concavity towards the anterior margin.

(410) 2. \* VANESSA FURCILLATA. (Say.) *Furcillate Vanessa*.*Vanessa furcillata*. Say *Am. Ent.* ii, t. xxvii.

Expansion of the wings 2 inches.

Taken in Canada by Dr. Bigsby.

Common in the N. West Territory and the vicinity of Fort William.

## DESCRIPTION.

Very near *V. Urticæ*, but distinct. Antennæ black; knob pale at the tip; a white spot at the base of each joint: wings angular, subsinuated and dentated, black-brown, above with a marginal orange-tawny band common to both, which at the anterior extremity terminates in a fork, or two branches tipped with white, or pale; there are also two orange-tawny bars at the anterior margin of the primaries: the secondary wings have a series in the margin consisting of five blue crescents; underneath, at the base they are brown-black, inscribed with black transverse wavy lines, and the brown part is edged with a black line; towards the posterior margin the brown of the wings is paler and marbled, so as to form a broad marginal sinuated band.

(411) 3. VANESSA ANTIOPA. *Antiopa Vanessa*.

*Vanessa Antiopa*. Kirb. and Sp. *Introd. to Ent.* iv, 499. Steph. *Haustell.* i, 45, 5. Jerm. *Butt.* 68, 113. Sam. *Comp.* 238, 3. Leach *E. E.* ix, 128. Curtis *Brit. Ins.* ii, t. xcvi. God. *Lepidopt.* i, 5, 1. Lat. *Crust. Arachn. et Ins.* ii, 380. Meig. *Schmett.* ii, 75, 3, t. xvii, f. 3. Dun. *Butt. (Nat. Libr. Ent.* iii, 168,) t. xviii, f. 2.

*Papilio Antiopa*. Linn. *Syst. Nat.* ii, 776, 165; *Fn. Suec.* 1056. Fab. *Ent. Syst.* iii, 115, 355. Scop. *Carn.* 419. Hubn. *Schmett.* 15, 4, t. xvi, f. 79. Wienn. *Verz.* 175, 4. Illig. *Mag.* iii, 185. Lew. *Pap. t. i,* f. 1—5. Don. *Ins.* iii, 45, t. lxxxix. Berk. *Syn.* i, 126. Haw. *Lepidopt.* i, 27, 32. Stew. *Elem.* ii, 126. Sulz. *Ins. t. xiv,* f. 85. Esp. *Schmett. t. xii,* f. 2. Herbst. *Schmett. t. clxvii,* f. 5, 6. Ernst. *Pap. i, t. i.* Berg. *Ins. t. xxxix.* Panz. *Fn. Germ. lxxxix,* t. 23. Bork. *Schmett.* i, 195, 3. Rhein. *Mag.* i, 258, 48. Schneid. *Schmett.* 156, 83, t. i, f. 4, 6. Müll. *Zool. Dan.* 1295; *Fn. Frid.* 54, 319. Brahm. *Ins. Kal.* 17, 8. Ross. *Fn. Etrusc.* ii, 150, 1016. Fuess. *Ins.* 30, 572. Lang. *Schmett.* 34, 252—256. Schwarz. *Raupen-kal.* 162, 342, 486, 619. Schrank. *Fn. Boic.* 1333. Fourc. *Ent. Par.* 233, 1. Vill. *Ent.* 11, 41, 72. Ced. *Fn. Ingr.* 615. Ochs. *Schmett.* i, 110, 4. Lett. *Nat. Comp.* Frontisp. Wilks. *Butt.* 58, t. cxiii.

— Morio. Linn. *Fn. Suec.* 1st Ed. 772. Geoff. *Ins.* i, 35, 1.

Jonst. *Ins. t. v.* Pet. *Gaz. t. xii,* f. 10. Rai. *Hist. Ins.* 135. *Papilio maxima*, &c. Rös. *Ins. i, t. i,* f. 1. Seba. *Thes.* iv, 32, f. 1, 2, 5, 6. Hoffn. *Ins. t. iii,* f. 2, and t. vi, f. 3. De Geer *Ins. i,* 305, t. xxi, f. 8, 9. H—s. *Aurel. t. xii,* d. e. Schæff. *Elem. t. xciv,* f. 1; *Icon. t. lxx,* f. 1, 2.

Expansion of the wings 3 inches.

Taken in Canada by Capt. Sheppard.

## DESCRIPTION.

Body brown-black, with a reddish tint. Antennæ externally with a white spot on each joint, underneath reddish; knob not much incrassated, pale at the tip: legs, except the thighs which are of the colour of the body, pale: wings of a rich reddish brown-black, with a buff-coloured posterior margin dusted here and there with black; parallel with the margin is a macular band consisting of blue spots: in the primaries the costal nervure is marbled with buff-colour, and there are two transverse angular bars of the same colour near the apex; underneath the wings have a marginal pale band, more dusted with black than the upper one; the remainder of this surface is of a cinerascens, but not pale, brown transversely marbled with black lines; it exhibits the two marginal costal bars, but smaller and less distinct, and there is a paler dot on the disk of each wing; the marginal band is internally angular, and the margin of the wings is sinuato-angular, with the rudiments of two tails.

In the European specimens the marginal band is usually white.

(412) 4. VANESSA ATALANTA. *Atalanta Vanessa*.

- Vanessa Atalanta*. Kirb. and Sp. *Introd. to Ent.* iii, 84, 114. Steph. *Illustr. Haustell.* i, 46, 6. Jerm. *Butt.* 66, 111. Sam. *Compend.* 238, 1. Leach *E. E.* ix, 138. God. *Lepidopt.* i, 6, 1. Latr. *Crust. Arachn. et Ins.* ii, 380. Meig. *Schmett.* ii, 74, 2, t. xvii, f. 2. Dun. (*Nat. Libr. Ent.* iii, 170,) t. xx, f. 1.
- Papilio Atalanta*. Linn. *Syst. Nat.* ii, 779, 175; *Fn. Succ.* 1060. Fab. *Ent. Syst.* iii, 118, 362. Scop. *Carn.* 424. Hubn. *Schmett.* t. xv, f. 75, 76. Wienn. *Schmett.* 174, 1. Illig. *Mag.* iii, 187. Schæff. *Icon.* t. cxlviii, f. 1, 2. Lew. *Pap.* t. vii, f. 1—4. Don. *Ins.* t. cclx. Berk. *Syn.* i, 127, 23. Haw. *Lepidopt.* i, 28, 33. Stew. *Elem.* ii, 127. Esp. *Schmett.* t. xiv, f. 1. Ernst. *Pap.* i, t. vi, f. 6. Herbst. *Schmett.* t. clxxx. Berg. *Ins.* t. xx, f. 1—11. Panz. *Fn. Germ.* xxii, t. 20. Petagn. *Inst. Ent.* ii, 465, t. vii, f. 6. Höf. *Berl. Mag.* 58, 4. Müll. *Zool. Dan.* 1300; *Fn. Frid.* 45, 323. Bork. *Schmett.* i, 12, 196, 4. Rhein. *Mag.* i, 256, 95. Schneid. *Schmett.* 154, 82. Brahm. *Ins. Kal.* 448, 314. Ross. *Fn. Etrusc.* 1017. Fuess. *Ins.* 30, 576. Lang. *Schmett.* 33, 243—246. Schwartz. *Raupen-kal.* 169, 343, 623. Schrank. *Fn. Boic.* 1330. Ochs. *Schmett.* i, 104, 2. Ced. *Fn. Ingr.* 616. Vill. *Ent.* 11, 45, 76. Brit. *Butt.* 18. t. x. f. infim. Wilks. *Pap.* 55, t. cv. Ramd. *Verdaung* 161, 2.
- Lybithea Atalanta*. Lam. *An. sans Vertèbr.* iv, 29, 4.

- Mouff. *Ins.* 100, f. 3, 4. Aldrov. *Ins.* t. cclxiv, f. 3, 4. Jonst. *Ins.* t. vii, f. 6. 7? Rai. *Hist. Ins.* 126, 1. Pet. *Mus.* 35, 327. Goed. *Ins.* i, t. xxvi. *Ed. List.* t. 1, f. 4. H—s. *Ins.* 12, t. vi, f. a, b. Blank. *Ins.* t. xviii, f. 2, A. D. Mer. *Europ.* 91; *Eruc.* ii, t. xli. Alb. *Ins.* t. iii, f. 4. Reaum. *Ins.* i, t. x, f. 89. De Geer *Ins.* i, t. xxii, f. 5. Geoff. *Ins.* ii, 40, 6. Rös. *Ins.* i; *Pap.* i, t. vi. Adm. *Ins.* t. xxiv. Pod. *Ins. Græc.* 72, t. ii, f. 3. Pet. *Mus.* 327; *Pap.* t. ii, f. 11. H—s. *Aurel.* t. vi, f. a, h; *Lepidopt.* 2. Sepp. *Neder. Ins.* t. i. Seb. *Thes.* 4, 1, d.

Expansion of the wings 2 inches and 4 lines.

Several taken in Canada.

## DESCRIPTION.

Body black above, grayish beneath. Palpi brown on the upper and pale on the under side; antennæ internally rufous, externally white, but each joint is black at the tip; knob black, tipped with pale: wings subdentated, brown-black, silky: primaries with an oblique subangular mesal orange band, incurved at the lower extremity; between this band and the apex are several white spots and dots; in the posterior margin of these wings is a sinus, and the fringe is alternately black and white, so as to form white crescents; underneath, at the base, the costa is alternately barred with blue-gray and black; the transverse band is more red, at the costa it is tipped with white, and at the anal angle with pale-yellow; between it and the base are two red streaks, the inner one branching from the band; beneath these is an indistinct eyelet with a black pupil and gray iris; above the band near the costa is an irregular angular eyelet, or two blue lines confluent at each extremity and including a black islet, then follow the white spots of the upper side but less distinct and near the apex three imperfect eyelets: the secondaries have a marginal broad orange band which almost unites with the band of the primaries, it is marked with four black dots between the nervures and at the anal angle is a double eyelet, with a black iris and blue pupil; fringe alternately black and white; under side clouded, marbled and spotted with bluish, gray, black and white in the middle, at the costa ia a triangular white spot, dusted with black in the centre, near the posterior margin is a band of indistinct cordiform or reniform eyelets with a black iris and bluish pupil, between these and the margin is another band of imperfect eyelets in which the iris is gray and the pupil light brown: at the edge of the wing is a macular band of black crescents.

This beautiful though common butterfly, to judge from the shape of its wings, seems rather to belong to the genus, or perhaps subgenus, *Cynthia*; at any rate it forms a connecting link between it and *Vanessa*.

## CLXXXII. Genus CYNTHIA. Fabr.

(413) I. CYNTHIA CARDUI. (Fabricius.) *Cynthia of the Thistle.*

- Cynthia Cardui.* Kirb. and Sp. *Introd. to Ent.* ii, 437, iii, 458, 460. Jerm. *Butt.* 66, 109. Steph. *Illustr. Haustell.* i, 47, 1. Brit. *Butt.* 19, t. xi. Dun. (*Nat. Lib. Ent.* iii, 174,) t. xix, f. 2.
- Vanessa Cardui.* God. *Lepidopt.* i, 5, 2; *Encycl. Method. t.* liv. 1. Lat. *Crust. Arachn. et Ins.* ii, 380, 3. Meig. *Schmett.* ii, 73, 1, t. xvii, f. 1.
- Libythea Cardui.* Lam. *An. sans Vertèbr.* iv, 29, 5.
- Papilio Cardui.* Linn. *Syst. Nat.* ii, 774, 157; *Fn. Suc.* 1034. Fab. *Ent. Syst.* iii, 104, 320. Scop. *Carn.* 426. Hübn. *Schmett.* 14, 1, t. xv, f. 73—74. Wienn. *Schmett.* 175, 2. Illig. *Mag.* iii, 1, 104, 320. Lew. *Pap. t.* vi, f. 1, 4. Don. *Ins.* ix, 9, t. cxcxii. Berk. *Syn.* i, 126. Haw. *Lepidopt.* i, 20, 22. Stew. *Elem.* ii, 125. Shaw. *Nat. Misc.* xi, t. ccccxxx. Müll. *Zool. Dan.* 1299; *Fn. Frid.* 518. Esp. *Schmett.* i, 133, t. x, f. 3. Ernst. *Pap.* i, 20, t. vii, f. 7. Berg. *Ins.* 20, t. lxii, f. 1—6. Icon. *Pap.* ii, t. x, f. 1—7. Höf. *Berl. Mag.* ii, 64, 13. Panz. *Fn. Germ.* xxii, t. 19. Bork. *Schmett.* i, 13, 199, 6. Rhein. *Mag.* 255, 44. Schneid. *Schmett.* 153, 81. Ross. *Fn. Etrusc.* ii, 1013. Fuess. *Ins.* 29, 569. Lang. *Verzeich.* ii, A, 33, 237—39. Schwarz. *Raupen-kal.* 156, 342, 485, 624. Schrank. *Fn. Boic.* 1331. Wilks. *Pap.* 56, t. cvii, f. 1. Vill. *Ent.* ii, 32, 45. Fourc. *Ent. Par.* 235, 7. Ced. *Fn. Ingr.* 613.
- Papilio Carduelis.* Cram. *Pap. t.* xxvi, f. E, F.
- Mouff. *Ins.* 101, f. 9, 10. Pet. *Gazoph. t.* iv, f. 21, 22; *Mus.* 35, 326. Rai. *Hist. Ins.* 122, 13. Alb. *Ins. t.* lvi. Seb. *Thes.* 4, 1, E. Goed. *Ins.* 3, t. A; *Ed. List. t.* i, f. 6. Schæff. *Icon. t.* xcvi, f. 5, 6. Rös. *Ins.* i, 57, t. x. Mer. *Eruo.* iii, t. xv. Geoff. *Ins.* ii, 41, 7. Reaum. *Ins. t.* xxvi, f. 11, 12. H—s. *Aurel. t.* xi, f. e. f.

Expansion of the wings 2 inches and 7 lines.

Taken in North America. Canada?

## DESCRIPTION.

Body underneath white, above brown. Antennæ long, reddish on the under side, on the upper alternately brown and white; knob brown, tipped with pale-yellow, with a mucro at the summit: wings brown at the base, dusted with tawny-yellow: primaries dark-brown, sometimes almost black, at the apex barred, spotted and dotted with white, the interior portion is tawny with an oblique band of black angular spots: at the apex is a double transverse series of indistinct white crescents; underneath these wings are gray at the base with a black spot; the costal area is gray barred with black; the disk is tawny with a macular abbreviated band consisting of four black spots, the last transverse and angular not reaching the interior margin, above this band at the costa is a white bar; the apex of the wing is grayish-brown spotted with white; the spots corresponding with those on the upper side, only the dots and spot form indistinct eyelets: the fringe is alternately white and brown on both sides: the secondaries are tawny, dark-brown or brownish-black at the base and the costa, with a whitish discoidal transverse spot: at the posterior margin is a triple series of black spots, the first consists of five subocellated round ones, with an indistinct white pupil; the second of six crescents; the third of as many subtriangular spots: underneath these wings are paler, grayish-brown, clouded, spotted, and streaked, with white or buff-colour; parallel with the posterior margin are five eyelets; that nearest the anal angle is the largest and consists of a black atmosphere, a buff-coloured iris, the pupil above is blue edged with red, and below black dusted with white; the three next eyelets are smaller, in the second the iris which is pale is edged on one side with black, and the pupil is black dusted and edged above with white; in the third there is no atmosphere, and the

pale iris is extended a little above; in the fourth the black atmosphere appears again and the pupil is dusted with blue; the fifth eye is imperfect, the pupil is a small black spot, round which the pale iris expands, particularly above; between these eyelets and the margin is a concatenated series of brown crescents dusted with blue; in some specimens they are quite covered with blue scales; these are followed by a white undulated line, succeeded by another series of less distinct crescents; and the margin terminates with a pale yellow line edged with black: the fringe is white, but brown where the nervures terminate.

(414) 2. CYNTHIA HUNTERA. (Fabricius.) *Hunter's Cynthia*.

*Cynthia*. Fab. *Syst. Glossat.* in Illiger's *Mag.*

*Papilio Huntera*. Fab. *Ent. Syst.* iii, 104, 321. Smith *Georg.* i, 17, t. ix.

—— *Cardui Virginiensis*. Drur. *Ins.* i, t. v, f. 1.

—— *Jole*. Cram. *Pap.* i, t. xii, f. E, F.

Pet. *Gazoph.* Dec. iv, t. xxxiii, 5.

*Vanessa Huntera*. Drury. *Hist. Nat.* i, 1, t. x.

Expansion of the wings 2 inches and  $7\frac{3}{4}$  lines.

Taken in Canada by Dr. Bigsby. Inhabits the *Graphalium obtusissimum*.  
Abbott.

DESCRIPTION.

Wings brown at the base, thickly dusted with tawny scales: primaries orange-tawny in the disk, somewhat reticulated with black lines, band, and spots; costal margin brown; apex of the wing brownish-black, with a pale costal bar or crescent, within which and the tip are first two distant white spots and next a pair of white dots near each other; parallel with the posterior margin is a faint palish linear band: the fringe is alternately brown and white: underneath the primaries are red in the disk, banded, barred, and spotted with black; the costal area is white at the base barred with black; the apex of the wing is brown with a triangular, and angular white abbreviated band; between the latter and the apex is a didymous eyelet, or two confluent eyelets with a blackish pupil including an indistinct blue and white spot, the iris is pale and the atmosphere black; in the other the pupil is brown crowned with a white spot, and has a middle blue crescent; next the costal margin is a pair of black subtriangular spots; the posterior margin is blue, gray, and whitish, with two black crescents next the anal angle; and a black line running parallel with the margin, terminating at some distance from the apical angle in an oblong black spot: the secondary wings are orange-tawny with four black eyelets in a series parallel with the posterior margin, with blue pupils, next these is a macular band consisting of concatenated black crescents, terminating at the anal angle in a straight black line including a blue one; underneath these wings are brown at the base, almost reticulated with paler lines and bands; in the disk are two eye-like spots, the innermost round, and the outermost elliptical; then follows a whitish broad angular band, dusted with black, and widest next the abdomen: the posterior part of these wings exhibits first a broad brown anteriorly bilobed



band, including two large eyelets; that next the anal angle, which is the largest, consists first of a narrow black atmosphere, next is a broad brown iris edged with white, and a white, brown, and blue, round pupil, the white part of which is dusted with blue; the other eyelet has the same external circles, but the pupil is dark and edged with some blue scales; the brown band is edged with pale; between it and the posterior margin is an indented blue band consisting of concatenated crescents, and edged with black; to this succeeds a grayish white band divided into two by a narrow black line and terminated by a marginal one; fringe brown and white.

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Family HIPPARCHIADÆ. *Hipparchiadans.*

CLXXXIII. Genus HIPPARCHIA. Fab.

(415) 1. \* HIPPARCHIA NEPHELE. *Cloud Hipparchia.*

*H. (Nephele) alis omnibus fuscis; primoribus supra et infra fuscia pallidiori ocellos binos includente; secundariis subtus apicem versus pallidioribus; ocellis sex minutis duplici serie.*

Cloud Hipparchia, with all the wings dentated, brown; primaries both above and below with a paler band including in it a pair of eyelets; secondaries paler towards the apex with six minute eyelets, arranged in two rows.

Expansion of the wings  $2\frac{1}{2}$  inches.

Taken in Canada by Dr. Bigsby.

DESCRIPTION.

Antennæ brown annulated with white, rufous at the end; knob slender: wings brown: primaries both above and below with a paler submarginal broad band including two eyelets; the upper ones surrounded by a paler atmosphere, with a black iris and white pupil; on the under side the atmosphere of the eyelets is more distinct and forms a kind of glory round them; the pupil is snowy-white with some blue scales scattered round it; the under side of both wings, above the band, is marbled with transverse deeper coloured streaks: the secondaries are dentated but not the primaries, which at the margin have two transverse black parallel lines; in the former there is anteriorly a costal paler bar, and the posterior half of the wing is paler; between the bar and the marginal paler band, are three minute eyelets, with a black iris and bluish pupil, arranged transversely in a triangle; and three more similar ones arranged obliquely, the external one minute, in the paler part, the internal one pointing to the anal angle.

(416) 2. \* HIPPARCHIA DISCOIDALIS. *Discoidal Hipparchia*.

*H. (discoidalis) fusca, alis integerrimis, primoribus vitta discoidali fulva; secundariis subtus albido marmoratis et nebulosis.*  
Discoidal Hipparchia, brown with very entire wings; the primaries with a discoidal tawny stripe; the secondaries underneath marbled and clouded with white.

PLATE III, FIG. 2, 3.

Expansion of the wings  $1\frac{3}{4}$ —2 inches.

Several specimens taken at Cumberland-house, Lat. 54°.

## DESCRIPTION.

Body brown. Antennæ annulated with white: wings very entire, brown; costa spotted with gray; a triangular obscure reddish-tawny discoidal stripe extends from the base to the posterior margin of the primaries, and is discoverable also on the under side where the wing is faintly clouded with gray at the tip: the secondaries underneath are indistinctly marbled and clouded with gray or whitish scales; fringe whitish and brown alternately.

Family LYCÆNIDÆ. *Lycænidans*.

CLXXXIV. Genus THECLA. Fab.

(417) 1. \* THECLA AUGUSTUS. *Augustus Thecla*.

*T. (Augustus) alis integerrimis, basi nigris, disco ferrugineis; secundariis subtus basi nigris, apice cinereis; serie transversa punctorum nigrorum.*

Augustus Thecla, wings very entire, black at the base, ferruginous in the disk; secondaries underneath black at the base cinereous at the apex, with a transverse series of black spots.

PLATE III, FIG. 4, 5.

Expansion of the wings 1 inch.

Taken in Lat. 54°.

## DESCRIPTION.

Antennæ annulated with white; knob elongated: wings dusky black, with a dull ferruginous disk; fringe alternately black and white: secondaries underneath black at the base; at the apex dusky ash-coloured, with a transverse series of about eight black spots; rudiments of which appear on the same surface of the primaries.

Named after the Esquimaux Augustus.

CLXXXV. Genus LYCÆNA. Fab. Lat.

(418) 1. \* LYCÆNA DORCAS. *Dorcas Lycæna*.

*L. (Dorcas) alis supra fusco-ferrugineis nigro punctatis et maculatis; subtus fulvis; primoribus punctis lunulisque nigris; secundariis subtus nigro obsolete punctatis; apice lunulis obsolete aurantiis.*

*Dorcas Lycæna*, wings above brown-ferruginous dotted and spotted with black; beneath tawny; primaries with black spots and crescents; secondaries obsoletely dotted with black; marked at the apex with obsolete orange crescents.

PLATE IV, FIG. 1.

Expansion of the wings 1 inch.

Taken in Lat. 54°.

## DESCRIPTION.

Body black above, white underneath. Antennæ black, annulated with white; knob tipped with orange: wings brown with a reddish tint, underneath tawny: primaries with an angular band formed of faint black spots; behind these nearer the costa is a black bar, above which are two more spots; between the band and the posterior margin are three more black spots arranged transversely, and above the base are three spots forming a triangle: the secondaries have a slight sinus near the anal angle, the fringe of which projects so as to assume the appearance of a short tail; cross the disk runs an angular band formed of faint black spots, above which is a crescent of the same colour; at the anal angle is an orange coloured angular bar, or abbreviated band; underneath, these wings have several indistinct black dots, the three external ones of which form an obtuse angle with the four internal ones.

This species seems the American representative of *L. Phleas*, but its colour is much less vivid.

CLXXXVI. Genus POLYOMMATUS. Lat.

(419) 1. \* POLYOMMATUS LUCIA. *Lucia Polyommatus*.

*P. (Lucia) alis supra argenteo-cæruleis margine tenuissime nigro; primoribus subtus cinerascentibus, ocellis quatuor marginalibus indistinctis; fascia maculari, lunulaque disci, nigris, albido cinetis; secundariis subtus fusco-cinereis, albido nigroque maculatis; ocellis in margine quinque.*

*Lucia Polyommatus*, wings above silvery-blue, with a very slender black margin; primaries underneath cinerascant with four indistinct eyelets in the margin; with a macular band and crescent in the disk black edged with white; secondaries underneath brownish ash-colour, spotted with black and white; with five eyelets in the margin.

PLATE III, FIG. 8, 9.

Expansion of the wings 1 inch.

One specimen taken with the preceding.

## DESCRIPTION.

Wings above silvery-blue, terminating, especially at the posterior margin, in a very slender black line: fringe white barred with black: primaries underneath ash-coloured mottled with white; in the disk is a black crescent and a curved macular band, consisting of, mostly, oblique black crescents edged with white, especially on their under side; the wing terminates posteriorly in a broadish, brown band, formed chiefly by obsolete eyelets: the secondaries are brown; underneath spotted and striped with black and white; towards the posterior margin the white spots are arranged in a transverse band parallel with it; and, as in the primaries, the wing terminates in several obsolete eyelets.

Family HESPERIADÆ. *Hesperiadans.*

CLXXXVII. Genus HESPERIA. Fab.

(420) 1. \* HESPERIA PECKIUS. *Peck's Hesperia.*

*H. (Peckius) fusca, alis supra fascia communi articulata angulata; secundariis subtus macula magna didyma, luteo-pallidis.*  
Peck's Hesperia, brown, wings above with an angular band common to both; secondaries underneath with a large, didymous, irregular spot; both of pale yellow.

PLATE IV, FIG. 2, 3.

Expansion of the wings 1 inch and  $\frac{1}{2}$  a line.

Taken with the preceding, and also by Professor Peck.

## DESCRIPTION.

Body brown, paler on the under side. Antennæ rufous above, below the joints have a patch of white scales; knob fusiform, hooked: wings above tawny-brown, with an articulate angular band, common to both wings, of pale yellow: primaries striped and streaked with the same colour near the base, and in the costal area: underneath the wings are paler; the primaries have nearly the same marks as above but more conspicuous: on the secondaries the angular band is surmounted by another irregular spot, so as to form two contiguous spots, or rather one large irregular didymous one.

This species does not appear to belong to either *Thymele* or *Pamphila* of Fabricius, as their characters are detailed by Mr. Stephens in his excellent *Illustrations of British Entomology*.<sup>4</sup> In both of these the palpi are thickly cloathed with hair and the terminal joint is obtuse; but in *H. Peckius* the palpi may be described as thickly cloathed with elongated divergent scales, with the terminal joint emerging, naked, and acute.

<sup>4</sup> *Haustellat.* i, 97, 99.

## II. CREPUSCULARIA. Lat.

Family ZYGÆNIDÆ. *Zygænidans.*

CLXXXVIII. Genus ALYPIA. Hubn.

(421) I. \* ALYPIA MAC CULLOCHII. *Mac Culloch's Alypia.**A. (Mac Cullochii) aterrima alarum maculis quatuor punctoque, niveis; illis nigro striatis.*

Mac Culloch's Alypia, very black, with four spots of the wings and a dot pure white, the former streaked with black.

PLATE IV, FIG. 5.

Expansion of the wings  $1\frac{1}{8}$  inch.

Taken in Nova Scotia by Dr. Mac Culloch, and in Canada by Dr. Bigsby.

## DESCRIPTION.

Body and wings very black. Orbit of the eyes externally clothed with white hairs: base-covers or tippets whitish: primary wings with three very white spots, one near the base oblique, obversely wedge-shaped, divided into two by a longitudinal black line; next, at a little distance from the anterior margin, is a subtrapezoidal, small, white spot, between which and the posterior margin is an articulate band, abbreviated at each end, of the same colour, consisting of six spots divided by black lines; the same spots distinguish the under surface of these wings, and besides there is a whitish longitudinal one in the costal area: in the secondaries are also three white spots on both surfaces, viz. a large rectangular one near the base divided longitudinally into four; a longitudinal undivided one at the anterior margin; and an articulate posterior abbreviated band, divided into five spots: the longitudinal costal streak may almost be regarded as forming a sixth as the lower end is parallel with the last spot of the band: the four anterior legs are externally covered with long orange coloured hairs, which character is also found in *A. octomaculata*.

Family SPHINGIDÆ. *Sphingidans.*

CLXXXIX. Genus SMERINTHUS. Lat.

(422) I. \* SMERINTHUS CERISYI. *Cerisy's Smerinthus.**S. (Cerisyi) alis primoribus angulatis fusco-cinereis; fusco albidoque fasciatis et nebulosis; linea transversa angulata albida; secundariis rubentibus; apud angulum ani, ocello pupilla, atmosphæraque atris, iride cæruleo interrupto.*

Cerisy's Smerinthus, primaries angulated, dusky-cinereous, banded and clouded with brown and whitish; with a transverse, angular, white line; secondaries rose-coloured, with an eyelet near the anal angle, formed by a black pupil and atmosphere, and a blue interrupted iris.

PLATE IV, FIG. 4.

Expansion of the wings  $2\frac{3}{4}$  inches.

Taken in North America, locality not stated.

## DESCRIPTION.

Body ash-coloured: thorax with a large trapezoidal brown spot dilated next the abdomen: primaries angulated, ash-coloured, with a transverse series of brown submarginal crescents in a paler band, between which and the posterior margin is another obsolete paler one; above the crescents is a straight whitish band, and a linear angular forked one under the internal sinuses of which the wings are clouded with dark brown; underneath the above markings of the wing are very indistinct: the secondaries are rose-colour, paler at the costal and posterior margins; underneath they are dusky-cinereous, with a whitish band coinciding with that of the primaries, a transverse series of crescents and a dentated brownish band, all rather indistinct: but the most conspicuous character of the secondaries is a large eyelet situated at the anal angle, consisting of a black pupil, nearly but not quite surrounded by a blue iris, and situated in a black triangular spot or atmosphere, which extends to the anal angle, and is surmounted by some blue scales: the abdomen above is dusky ash-coloured.

This insect appears to be the American representative of *S. ocellatus*, from which however it differs considerably. It comes very near to *S. geminatus* (Say *Am. Ent. i, t. xii*.) but in that the eyelet has two blue pupils.

## CXC. Genus DEILEPHILA. Ochs.

(423) 1. \* DEILEPHILA INTERMEDIA. *Intermediate Deilephila.*

*D. (intermedia) olivacea*; *alis primoribus vitta intermedia antice pallide rosea postice nigra*; *secundariis nigris fascia rosea, intus, et ciliis, albis.*

Intermediate Deilephila, olive-coloured; primary wings with an intermediate stripe anteriorly pale rose-colour, posteriorly black; secondaries black with a rose-coloured band which internally, as well as the fringe, is white.

Expansion of the wings  $2\frac{1}{2}$  inches.

Taken in North America.

## DESCRIPTION.

This species is intermediate between *D. Euphorbiae* and *D. Galii*, which last it most resembles, but the anterior portion of the mesal stripe of the primary wings is pale rose-colour; the fringe of their inner margin, and of the posterior of the secondaries is white: there is no series of white dots on the back of the abdomen and the ventral segments are fringed at the apex with white hairs. This description was taken from an old specimen apparently somewhat faded.

## Family SESIADÆ.

CXCI. Genus SESIA. Fab.

(424) I. \* SESIA RUFICAUDIS. *Red-tailed Sesia.*

*S. (ruficaudis) olivacea, abdomine segmentis duobus intermediis atris; sequentibus rufis; alis nigricantibus disco hyalinis; secundariis basi intus ferrugineis extus luteis.*

Red-tailed Sesia, olive-coloured; abdomen with the two intermediate segments black; the subsequent ones rufous; wings black with a hyaline disk; secondaries at the base internally ferruginous, externally yellow.

Sphinx Pelasgus. Cram. *Pap.* iii, t. ccxlviii, f. B?

Expansion of the wings  $2\frac{1}{2}$  inches.

Taken in Canada by Dr. Bigsby, and in New Jersey by Mr. Drake.

## DESCRIPTION.

Body yellow-olive, underneath pale-yellow. Antennæ black: primaries reddish-brown, hyaline in the disk, with the hyaline part half divided towards the base with a costal bar, covered with yellow-olive hairs at the base; underneath the costa, the posterior margin, and the nervures are dark ferruginous; there is also a yellow stripe on the inner side of the base: secondaries hyaline in the disk; base externally and costa yellow; internally the base is ferruginous; underneath the dark part of the wing is ferruginous, and the base pale-yellow: two first segments of the abdomen yellow-olive, two next black, the rest ferruginous with pale-yellow lateral spots.

This species appears to be the American representative of *Sesia fuciformis*, which it greatly resembles, but differs in the colour of the tail and the base of the secondaries.

## III. NOCTURNA. Lat.

Family LITHOSIADÆ. *Lithosiadans.*

CXCII. Genus CALLIMORPHA. Lat.

(425) I. \* CALLIMORPHA PARTHENICE. *Maiden Callimorpha.*

*C. (Parthenice) alis primoribus nigris; rivulis incarnato-pallidis; secundariis rubris thoraceque maculis quinque nigris.*

Maiden Callimorpha, primary wings black with pinkish-pale rivulets; red secondaries and the thorax each with five black spots.

Expansion of the wings  $1\frac{3}{4}$  inch.

Taken in North America.

## DESCRIPTION.

♂

Antennæ black, bipectinated: thorax flesh-coloured with two anterior, and three posterior, oblong, black spots, the latter being the largest: primary wings black, with the so-called rivulets pale with a slight pinkish tint; the main streams, especially towards the apex of the wing, form several islets, most of which are divided by slenderer ones which do not appear on the under side of the wing: the secondaries are of the colour of red lead, with five black spots towards the posterior margin, the intermediate three forming a macular band, above which is one smaller one and below it another: underneath there is also a small spot, at the costal margin, above the others.

(426) 2. \* CALLIMORPHA VIRGUNCULA. *Little-maiden Callimorpha.*

*C. (Virguncula) alis primoribus rivulis carneo-pallidis, apice radiantibus; secundariis luteis, nigro maculatis; thorace maculis quinque nigris.*

Little-maiden Callimorpha, primary wings black with pinkish-pale rivulets, forming rays at the apex: secondaries yellow spotted with black; thorax yellow with five black spots.

## PLATE IV, FIG. 6.

Expansion of the wings  $1\frac{1}{2}$  inch.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Head pallid; orbit of the eyes, and the mouth, black; antennæ black, serrato-pectinate: thorax pallid, with five lanceolate black spots, the posterior ones being the largest: primary wings black, with pallid rivulets, which are formed by the scales that clothe the nervures, and produce the rays at the apex of these wings, where the lines are traversed by a transverse, angulated band; underneath they are pale, with the black parts less distinct, except at the apex; there is a black spot in the disk near the costal margin: the secondaries are orange-tawny, spotted at the apex with black: abdomen tawny above, below pale, with a dorsal, and on each side a double, lateral, black, macular stripe: trunk underneath black, with pale hairs intermixed: legs black; tibiæ pale above; thighs with a pale spot at the base and apex.

This is nearly related to the preceding species, but is much smaller; and the painting and spotting of the wings differ materially.



## CXCI. Genus LITHOSIA. Fab.

(427) 1. \* LITHOSIA MINIATA. *Red-striped Lithosia.*

*L. (miniata) miniata*; *alis primoribus vittis tribus*; *posticis apice abdomineque medio, schisticoloribus.*

Red-striped Lithosia, miniatous; primary wings with three stripes; secondary at the apex, and abdomen in the middle, slate-coloured.

Expansion of the wings  $1\frac{1}{2}$  inch.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Head, trunk, base and apex of the abdomen, costal and anal margin, mesal forked stripe of the primary wings, and base of the secondary, miniatous or of the colour of red lead; two longitudinal stripes and the space between the apical fork of the primaries, apex of the secondaries, and middle of the abdomen, slate-coloured.

Family CTENUCHIDÆ. *Ctenuchidans.*

## CXCI. \* Genus CTENUCHA. Kirb.

*Palpi* longer than the head, three-jointed: joints covered with shortish scales, first and second equal in size and length, the third a little shorter and small, but not minute.

*Antennæ* of both sexes bipectinate, but the teeth are very long in the male.

*Legs*, *posterior tibiæ* with a pair of spurs in the middle as well as at the apex.

*Wings* depressed: *primaries* incumbent; oblong, apical and anal angles rounded: *secondaries* plicatile.

*Anus* tufted.

(428) 1. \* CTENUCHA LATREILLANA. *Latreillian Ctenucha.*

*C. (Latreillana) fusca*, *capite, alarumque primorum humeris, aurantiis*; *trunco cyaneo*; *antennis nigris.*

Latreillian Ctenucha, brown; with the head, and the shoulders of the primary wings, orange; the trunk cyaneous; and the antennæ black.

Expansion of the wings  $2\frac{1}{8}$  inches.

Taken by Dr. Bigsby in Canada, and Dr. Mac Culloch in Nova Scotia.

## DESCRIPTION.

Body, and primary wings, light-brown. Antennæ and anal hairs black; head and base of the primaries, bright orange: trunk, back of the abdomen, and outside of the thighs, cyaneous or blue-green; fringes of the wings white, but in the middle of the posterior margin brown: secondaries short.

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Family NOCTUIDÆ. *Noctuidans.*

CXCV. Genus PLUSIA. Ochs.

(429) I. \* PLUSIA RECTANGULA. *Rectangular Noctua.*

*P. (rectangula) alis primoribus cinereis, nigro nebulosis; macula discoidali nivea, rectangula, subramosa.*

Rectangular Plusia, primary wings ash-coloured, clouded with black, with a rectangular, subramose, snowy-white, discoidal spot.

Expansion of the wings  $1\frac{1}{2}$  inch.

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Body cinerous, underneath whiter. Antennæ testaceous: thorax crested? as the scales are mostly rubbed off this cannot however be positively asserted; wings incumbent; primaries with a subcrenate edge; inclining to ash-coloured, clouded with black, with a subramose rectangular somewhat silvery spot, extending from near the base to the middle of the wing; between which and the apex is a narrow white wavy band, edged with black; and still nearer the margin a zigzag transverse black line: the secondary wings are plicatile, cinereous, and dusted at the apex with brown.

N.B. The silvery rectangular spot in the primary wings of this insect, when they are brought near to each other, forms a quadrangular area very much resembling a picture in a silver frame.

(430)

2. PLUSIA GAMMA. *Gamma Plusia*.

- Plusia Gamma. Ochs. *Schmett.* Tr. viii, 185, 21. Steph. *Illustr. Haustell.* iii, 103, 5.  
 Noctua Gamma. Fab. *Ent. Syst.* iii, p. 2, 79, 228. Hübn. *Noct. t.* lviii, f. 283; *Larv. Lep.* iv, *Noct.* iii, A. c. f. 1, a. b.  
 Wienn. *Schmett.* 93, 5. Esp. *Schmett.* iv, t. cxi; *Noct.* 32, f. 1—4, t. cxxv; *Noct.* 46, f. 1—4. Ced. *Fn. Ingr.* 713. Illig.  
*N. Ausg. dess.* 350, 5. Walck. *Fn. Paris*, ii, 298, 9. Lat. *N. D. D'H. N.* xxiii, 37, 2. *Crust. Arachn. et Ins.* ii, 411.  
 Kirb. and Sp. *Introd. to Ent.* iii, 254. Vieweg. *Schmett.* ii, 44, 63. Höf. *Berl. Magaz.* iii, 2, 212, 14.  
 Campæa Gamma. Lam. *An. sans Vertèbr.* iii, 569, 3.  
 Phytometra Gamma. Haw. *Lepidopt.* 256, 6.  
 Phalæna Noctua Gamma. Linn. *Syst. Nat.* ii, 843, 127; *Fn. Suec.* 1171. Vill. *Ent.* ii, 213, 189. Don. *Ins.* viii,  
 t. cclxv, f. 2. Berk. *Syn.* i, 141. Schrank. *Fn. Boic.* 1597. Stew. *Elem.* ii, 186.  
 ——— Gamma. Scop. *Carn.* 523. Wilks *Moth. &c.* 34, t. lxix; *Butt.* t. xi, f. 3.  
 ——— gamma. Haw. *Prodr.* 16.  
 ——— Lambda. Petiv. *Gazoph. t.* lxiv, f. 6. Geoffr. *Ins.* ii, 156, 92. Müll. *Fn. Frid.* 44, 448; *Zool. Dan.* 1395.  
 Ernst. *Pap.* viii, 134, t. cexxxviii, f. 594.  
 Goed. *Belg.* ii, 83, t. lxxxi; *Ed. List. t.* ii, f. 14. Blank. *Belg.* 54, t. viii, f. n. o. p. Alb. *Eng. Ins.* t. lxxxiv, f. e—h.  
 Rai. *Hist. Ins.* 163, 17. Mer. *Europ. t.* lxxxii. Reaum. *Ins.* ii, t. xxvii, f. 4, 5. Sepp. *Nederl. Ins.* v, t. i, f. 6. Rös.  
*Ins.* i, t. v, f. 1—4. Schæff. *lc. t.* lxxxiv, f. 5. Frisch. *Ins.* i, 5, 37, t. xv. Pod. *Mus. Græc.* 91. H—s. *Lepidopt.*  
 59. Fuess. *Ins.* 715. Bork. *Schmett.* iv, 782, 358. Lang. *Schmett.* 1117. Brahm. *Ins. Kal.* ii, 211, 109. Rossi.  
*Fn. Etrusc.* ii, 1126. Goeze. *Beitr.* iii, 3, 124, 127.

Expansion of the wings  $1\frac{1}{2}$  inch

Taken in Canada by Dr. Bigsby.

## DESCRIPTION.

Head, crests of the thorax and abdomen gray, these crests are edged with white and in the anterior ones the margin is formed by a black and white line: abdomen cinereous: antennæ above testaceous, underneath white banded with brown: the primary wings are shaded and clouded with black, brown and white, and towards the apex have three indistinct bands, the first white internally abbreviated, the second dark-brown, and the marginal one gray including a transverse series of black crescents, in the disk of the wing is a pallid silvery signature, representing the Greek letter gamma, or the Roman Y, the forked part pointing to the costal margin; from the upper point of the fork a white curving line runs obliquely to the anal margin of the wing near its base: secondary wings light brown, or drab, with the nervures, and posterior margin broadly, dark-brown; fringe alternately dark and light: underneath the wings are cinereous, darker at the apex.

(431) 3. \* *PLUSIA FALCIFERA. Sickle-bearing Plusia.*

*P. (falcifera) grisea; alis primoribus nebula magna fusca falculam argenteam includente, extus ramulum emittente.*  
Sickle-bearing *Plusia*, grizzled, primary wings with a large brown cloud including a silver sickle-shaped streak, which sends forth on the outside a little branch.

Expansion of the wings  $1\frac{1}{2}$  inch.

Taken in Nova Scotia by Dr. Mac Culloch.

## DESCRIPTION.

Body gray. Antennæ and thorax, when laid bare, testaceous: primary wings gray with a faint reddish tint, a broad brown spot, or cloud, almost triangular, traverses the middle of the wing, which partly includes, and is partly edged, by a sickle-shaped silvery streak; the part representing the handle of the sickle, being broader than the rest, and sending forth externally near its apex a short branch, which, with the internal apex of the handle, forms a fork; the inner tine, or branch, of which terminates in a slender line running in a curve to the costal margin where it touches the scutellum; a brown indistinct cloud, or band, also runs obliquely from the anal to the apical angle of the wing; a very minute, pale streak marks it just transversely above the former angle; the posterior margin is slightly indented: the secondary wings are reddish-brown, with an obsolete, pale, submarginal, band.

(432) 4. *PLUSIA IOTA. Iota Plusia.*

*Plusia Iota.* Ochs. *Schmett.* Tr. viii, 181, 20. Steph. *Cat.* 105, 6375, 1; *Illust. Haustell.* iii, 100, 1.  
*Noctua Iota.* Linn. *Syst. Nat.* ii, 844, 130. Fab. *Ent. Syst.* III, ii, 81, 237. Hubn. *Noct. t.* lviii, f. 282. Berk. *Schmett.* iv, 79, 362. Vill. *Ent.* ii, 215, 192. Fuess. *Schmett.* 38, 717. Vieweg. *Schmett.* ii, 64, 64. Ross. *Fn. Etrusc.* ii, 1127.  
Goeze. *Beitr.* iii, t. iii, 127, 130, v.  
—— Protea. Cram. *Pap. Exot.* iv, 244, t. cccc, f. m.  
—— Interrogationis. Bork. *Schmett.* 792, 363. Esp. *Schmett.* iv, 225, t. cxiii, f. 1, 2.  
—— Gamma. Müll. G. L. *Naturf. t.* ii, 5, 6.  
*Phytometra Iota.* Haw. *Lepidopt.* 256, 5.  
Le V. D'or. Ernst. *Pap. D' Eur.* viii, 129, t. cccxxxvi, f. 592.

Expansion of the wings  $1\frac{3}{4}$  inch.

Taken in Nova Scotia by Dr. Mac Culloch and in Canada by Dr. Bigsby.

## DESCRIPTION.

Body, legs, and antennæ, fawn-coloured, as are likewise the paler parts of the wings: primaries clouded and streaked with dark, and reddish-brown; the disk of these wings is occupied by a large cloud of this colour inscribed with two, sometimes silvery, and sometimes golden, brilliant metallic spots, tending to form an obtuse angle with each other: the upper one, or that nearest the base of the wing being acuminate towards that part, rounded towards the apex, and sending forth two branches towards the costal area; the lower spot is subtriangular or V-shaped, with the point towards the base of the wings: the two together form, in some sort, a semicolon reversed: between the lower or ovate spot and the costa, is a rather indistinct circlet of gold or silver, and two streaks of the same lustre may be traced lower down between it and the inner margin of the wing; the disk near the apex is bronzed; from the brown cloud mentioned above runs a wavy brown streak to the external apical angle, the apex itself is terminated by a band formed by indistinct black crescents; and above the streak is a transverse band formed by two faint lines of dark indistinct crescents including a pale band: secondary wings darker at the apex.

N.B. In the Nova Scotia specimens the discoidal spots are silvery, while in that from Canada their lustre is golden. The synonymy of this species seems very doubtful: the metallic signature can scarcely be said to represent either a mark of interrogation, or a greek Iota reversed; they most resemble a semicolon.

## ORDER DIPTERA. Linn.

## I. NEMOCERA. Lat.

Family CULICIDÆ. *Culicidans.*

## CXCVI. Genus CULEX. Linn.

(433) 1. \* CULEX PUNCTOR. *Pungent Culex.*

*C. (Punctor) nigra*; *pedibus, alarumque, albarum neuris, testaceis.*

Pungent Culex, black with the legs, and nervures of the white wings, testaceous.

Length of the body  $3\frac{1}{2}$  lines.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body black. Proboscis longer than the trunk; sheath black; valvules and lancets testaceous; palpi somewhat incrassated towards the apex; antennæ broken off in both specimens: wings white, iridescent, with testaceous nervures, without scales, hairs, and fringe: legs testaceous.

Family TIPULIDÆ. *Tipulidans.*

CXCVII. Genus TIPULA. Linn.

(434) 1. \* TIPULA PRATORUM. *Tipula of the Meadows.*

*T. (Pratorum) schisticolor*; prothorace fusco, quadrilineato; abdomine flavo, lineis tribus longitudinalibus anoque, fuscis; pedibus, antennisque basi, testaceis; alis nebulosis.

Tipula of the Meadows, slate-coloured; prothorax with four brown stripes; abdomen yellow, with three longitudinal lines and the anus brown; legs and antennæ testaceous at the base; wings clouded.

Length of the body 7 lines.

Taken with the preceding.

## DESCRIPTION.

♂

Head and trunk slate-coloured. Antennæ black, with the scape yellow: thorax with four brown stripes, the lateral ones abbreviated: wings embrowned, clouded with white; nervures black, but those at the base of the wing are testaceous; there is a black dot or two near the anterior margin; and the stigma, or what represents it, is black; the poisers are pale but black at the tip: legs obscurely testaceous; thighs and shanks black at the tip; tarsi black: abdomen clubbed, yellow, with a longitudinal dorsal brown stripe; anal club black.

♀

Wings not spotted with white: legs distinctly testaceous, black at the joints; last joints of the tarsi black: abdomen lanceolate, yellow, with a dorsal, ventral, and on each side a lateral, brown stripe.

Family BIBIONIDÆ. *Bibionidans.*

CXCVIII. Genus ASPISTES. Hoff.

xxxii. Subgenus ARTHRIA. Kirb.

*Antennæ* novemarticulatæ, ultimis articulis vix distinctis.

*Oculi* reniformes, antennarum basin cingentes.

*Stemmata* tria.

*Femora* antica incrassata.

The little insect which forms the type of this subgenus differs chiefly from *Aspistes* of Count Hoffmannsegg,<sup>5</sup> in having one joint more in the antennæ; the three terminal ones are closely imbricated so as to be scarcely distinguishable; and the last is of a different form.<sup>6</sup> The neuration of the wings, in both, is precisely the same; and in both the anterior tibia terminates in a spine.

<sup>5</sup> Meig. *Dipt.* i, 319, t. xi, f. 16, 17.

<sup>6</sup> See PLATE vi, f. 8, a.

(435) I. \* *ASPISTES (Arthria) ANALIS.* *Anal A. Arthria.**A. A. (nalis) atra; trunci lateribus, pedibus, anoque, testaceis; alis corpore longioribus.*

Anal A. Arthria, black; with the sides of the trunk, legs, and anus, testaceous; wings longer than the body.

PLATE VI, FIG. 8.

Length of the body,  $\left\{ \begin{array}{l} \text{excluding the wings, 2} \\ \text{including the wings, 3} \end{array} \right\}$  lines.

Several taken in Lat. 65°.

## DESCRIPTION.

Body black, naked. Head very small: trunk with a dorsal area marked out by a ridge; on each side is a reddish-yellow line drawn from the collar to the base of the wing; but in some specimens this is very indistinct; poisers white; wings hyaline, iridescent, much longer than the body; costal area divided into three areolets, with testaceous nervures, terminating in a black stigma; there are four spurious nervures, the first abbreviated, and the anal one bent towards the margin: the legs are reddish-yellow except the apex of the tarsi which is black; the intermediate pair are smaller and shorter than the others; anterior thighs are much incrassated, and the tibiæ terminate in a spine; the posterior thighs are elongated; abdomen flat above; anus yellow, as is sometimes the margin of the ventral segments.

## II. TANYSTOMA.

Family EMPIDÆ. *Empidans.*

CXCIX. Genus EMPIS. Lin.

(436) I. \* *EMPIS LUCTUOSA.* *Mourning Empis.**E. (luctuosa) atra; alis infuscatis, stigmatè magno; halteribus nigris, capitulo magno; proboscide vix capite longiori.*

Mourning Empis, black; wings embrowned with a large stigma; poisers black with an ample head; proboscis scarcely longer than the head.

Length of the body, wings included, 3 lines.

Taken with the preceding.

## DESCRIPTION.

Body entirely black. Proboscis very little longer than the head: wings a little embrowned, with a large black stigma, iridescent, nervures black.

(437) 2. \* EMPIS GENICULATA. *White-kneed Empis.*

*E. (geniculata) nigricans; pedum geniculis albidis; proboscide capite longiori; alis amæne iricoloribus.*  
White-kneed Empis, blackish; knees white, proboscis longer than the head; wings beautifully iridescent.

Length of the body 3 lines.

Taken with the preceding.

## DESCRIPTION.

Very similar to the preceding, but not so black: wings slightly embrowned, beautifully iridescent; legs, where the shank is united to the thigh, white; proboscis nearly as long as the thorax.

Family BOMBYLIADÆ. *Bombyliadans.*

CC. Genus BOMBYLIUS. Linn.

## (438) 1. BOMBYLIUS MAJOR.

*Bombylius major.* Linn. *Syst. Nat.* ii, 1009, 1; *Fn. Suec.* 1918. Fab. *Ent. Syst.* iv, 407, 1; *Syst. Antl.* 128, 1. Schrank. *Enum.* 1002. Vill. *Ent.* iv, 605, 1. Berk. *Syn.* i, 167. Don. ii, 79, t. lxvi. Stew. *Elem.* ii, 273. Ced. *Fn. Ingr.* 1052. Ramdohr. *Verdaung. Ins.* 183, 13, t. xx, f. 2—5. Schell. *Dipt.* 90, t. xxxiv, f. 2. Herbst. *Naturg.* ii, t. ccxlvii, f. 1. Fall. *Dipt. Suec. Bombyl.* 9, 1. Lat. *Consid. Gêner.* 443. Meig. *Dipt.* ii, 190, 5.

*Bombylius variegatus.* De G. *Ins.* vi, 268, 1, t. xv, f. 10.

———*sinuatus.* Mik. *Bomb.* 35, t. ii, f. 4. Meig. *Klassif. d. Sweifl.* i, 179, 4.

Aldr. *Ins.* 330, f. 10. Musca X. Mouff. *Ins.* 65; *Snistr.* f. 5. Höf. *Jun?* t. viii, f. 5. Pet. *Gaz.* v, t. xxxvi, f. 5. Schæff. *Elem.* t. xxvii, f. 1; *Icon.* t. xxi, f. 5. H—s. *Expos.* t. xvii, f. 2? Müll. *Linn. Nat.* v, 1007; *Fn. Frid.* 790. Wied. *Mag.* i, 2, 20.

Length of the body,  $\left\{ \begin{array}{l} \text{including the proboscis, 7} \\ \text{excluding the proboscis, 5} \end{array} \right\}$  lines.

Expansion of the wings 1 inch to  $\frac{3}{4}$  inch.

Taken in Lat. 65°.

Linné under this species refers to one noticed by Ray;<sup>7</sup> but Ray describes the wings as “*punctis nigris creberrimis pictæ,*” words which evidently refer to *B. medius*; Mr. Samouelle, perhaps induced by this reference, has figured the latter insect<sup>8</sup> as *B. major*. The reference in *Syst. Nat.* also to Geoffroy<sup>9</sup> appears to be incorrect, for Linné describes the wing of this species not as *basi fusca* as Geoffroy does; but in these words “*alæ dimidium longitudinaliter fuscum.*” Geoffroy, as well as Reaumur,<sup>1</sup> who is also quoted by more authors for this species, probably had the *B. minor* in their eye, the wings of which Linné describes as “*antice versus basin obsolete fuscescentes.*”<sup>2</sup>

<sup>7</sup> *Hist. Ins.* 273, *Musca bombyliiformis, &c.*

<sup>8</sup> *Compend. t. ix, f. 10.*

<sup>9</sup> ii, 466, *Ins. Asilus.* 1. *Le Bèchon.*

<sup>1</sup> *Ins.* iv, t. viii, f. 11—13.

<sup>2</sup> *Fn. Suec.* 1920.



## DESCRIPTION.

Body black, thickly covered above with yellowish, soft, but erect hairs; underneath the hairs are whiter, but those on the breast, at the origin of the legs, are black: wings with the anterior half longitudinally black-brown, the dark colour on the inner side being sinuated or uneven; the posterior half of the wings is transparent with black nervures: the legs are long, and pale-yellow; but the tarsi are reddish-black at the extremity: the eyes are triangular.

(439) 2. BOMBYLIUS PYGMÆUS. *Pigmy Bombylius.*

*Bombylius pygmæus.* Fab. *Ent. Syst.* iv, 411, 19; *Syst. Antl.* 135, 32. Wied. *Dipt. Er.* 175, 29.

Length of the body,  $\left\{ \begin{array}{l} \text{including the proboscis, 5} \\ \text{excluding the proboscis, 3} \end{array} \right\}$  lines.

Expansion of the wings 9 lines.

Taken with the preceding.

## DESCRIPTION.

Body black, hairy. Hair below the eyes black; eyes meeting at the vertex; behind the eyes the hairs are gray; those on the thorax are tawny or reddish with a white tuft on each side at the anterior and posterior margin: the wings are longitudinally dusky at the anterior margin; more than the posterior half is hyaline, with several scattered black dots, the interior ones being the largest: the legs are testaceous, but black at the tip: the abdomen is covered by reddish hairs with dark ones intermingled; those at the anus are whitish.

Family TABANIDÆ. *Tabanidans.*

CCI. Genus TABANUS. Linn.

(440) 1. \* TABANUS AFFINIS. *Kindred Tabanus.*

*T. (affinis) niger*; proboscide, palpis, antennis basi, abdomineque segmentis tribus primis utrinque, quarto punctis duobus dorsulibus, tibiisque quatuor posticis, rufis.

Kindred *Tabanus*, black, with the proboscis, feelers, antennæ at the base, abdomen with the three first segments on each side, two dorsal dots of the fourth, and four posterior tibiæ, red.

Length of the body  $7\frac{3}{4}$  lines.

Taken with the preceding.

## DESCRIPTION.

Body black with hoary down. Proboscis, palpi, and base of the antennæ obscurely, all red: down on the trunk very thin, mixed with a few black hairs: tubercles before the wings, winglets and knob of the poisers, pale testaceous: legs black with the four posterior tibiæ rufous: wings embrowned, with darker nervures: three first segments of the abdomen rufous, each with a black dorsal spot; margin of the segments pale with a whitish fringe; the fourth segment has a pair of round, red, dorsal, spots.

VARIETY B. Antennæ all black.

This species is nearly related to *T. tropicus*, *solstitialis*, and *græcus*, but appears distinct.

(441) 2. \* *TABANUS ZONALIS*. *Zoned Tabanus*.

*T. (zonalis) niger, subpubescens, antennis basi, tibiis, tarsi, et femoribus apice, rufis; abdomine segmentis margine albidis.*

Zoned Tabanus, black; a little downy; antennæ at the base, tibiæ and tarsi, and thighs at the apex, red: margin of the abdominal segments white.

Length of the body  $7\frac{1}{2}$  lines.

Taken with the preceding species.

## DESCRIPTION.

Body black, with a few hairs of the same colour, especially at the sides of the trunk. Antennæ reddish at the base; sheath of the proboscis, and palpi, black; haustellum testaceous: breast whitish from inconspicuous down; tubercles before the wings subferruginous: wings subttestaceous with some of the nervures black; knob of the poisers reddish: thighs black, reddish at the tip; tibiæ, and tarsi, except the anterior pair which are black, as well as the apex of the anterior tibiæ, red: abdominal segments above and below margined with white decumbent down and fringe.

## CCII. Genus CHRYSOPS. Meig.

(442) 1. *CHRYSOPS SEPULCHRALIS*. *Sepulchral Chrysops*.

*Chrysops sepulchralis*. Fab. *Ent. Syst.* iv, 374, 48; *Syst. Antl.* 113, 12. Meig. *Dipt.* ii, 74, 10.

Length of the body 6 lines.

Taken with the preceding.

## DESCRIPTION.

Body black, slightly downy. Head hoary from pubescence; proboscis with a black sheath and testaceous haustellum; feelers black: antennæ red at the base; below the antennæ is an obtriangular levigated, and naked space, with rounded angles, and somewhat elevated; behind the antennæ in the frontal space, between the eyes, the ordinary levigated and naked areas, which in *Tabanus* are longitudinal, in *Chrysops* are transverse: sides of the trunk hairy with black erect hairs, it is also marked above with four longitudinal hoary stripes formed by invisible pubescence; underneath the trunk is covered with down of the same description and colour, and set with tufts of longer hairs: wings white, with the costal margin and a middle abbreviated band, and nervures brown: legs and abdomen black; and extremity whitish from down.

## III. ATHERICERA. Lat.

Family SYRPHIDÆ. *Syrphidans*.

## CCIII. Genus SCÆVA. Fab.

(443) I. SCÆVA RIBESII. (Fabricius.) *Currant Scæva*.

*Scæva Ribesii*. Fab. *Syst. Antl.* 248, 1. Fall. *Dipt. Suec.* Syrph. 40, 6. Steph. *Cat.* ii, 285, 858, 10.  
*Syrphus Ribesii*. Fab. *Spec. Ins.* ii, 432, 57; *Ent. Syst.* iv, 304, 100. Lat. *Crust. Arachn. et Ins.* ii, 494. Meig. *Dipt.* iii, 306, 49. Ced. *Fn. Ingr.* 961. Kirb. and Sp. *Introduct. to Ent.* iii, 299. Walck. *Fn. Par.* ii, 389, 15. Ramd. *Verdaung. Ins.* 177.  
*Musca Ribesii*. Linn. *Syst. Nat.* ii, 987, 50; *Fn. Suec.* 1816. Schrank. *Enum.* 905; *Fn. Boic.* iii, 2408. Vill. *Ent.* iii, 446, 99. De G. *Ins.* vi, 103, 4, t. vi, f. 3—13; *Act. Upsal.* 1736, 32, 41. Don. *Ins.* xii, 21, t. cccci, f. 3. Stew. *Elem.* ii, 266.  
Rai. *Hist. Ins.* 269 1. Goed. *Ins.* i, t. xli, Ed. List. f. 133. Mer. *Eruc. t.* vi. Geoff. *Ins.* ii, 511, 37. H—s. *Exp. t.* xxxii, f. 38.

Length of the body 4 lines.

A single specimen taken with the preceding.

## DESCRIPTION.

Head concavo-convex; underneath black, with the edge fringed with whitish hairs; vertex black: face below the antennæ yellowish; hoary from decumbent hairs next the eyes; antennæ yellowish with a darker cloud: trunk bronzed with a greenish tint, downy especially on the sides, down whitish: wings hyaline, longer than the body, with black nervures, but those of the costal area are ferruginous: scutellum large, yellow: legs luteous, coxæ and trochanters dark-brown, posterior tarsi black, first joint below with a brush of golden coloured bristles: abdomen depressed, above black with five yellow bands, viz. one consisting of two crescents, forming an interrupted band,

traversing the middle of the first segment; then a broadish subinterrupted one traversing the base of the second and third; and lastly the margin of the two last segments is also yellow, as is the under side of the abdomen.

Ray, I suppose, has not hitherto been referred to as describing this species, because in his definition he mentions only three yellow bands, or *annuli*, as he calls them; yet in his description he mentions a fourth narrower one.

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Family MUSCIDÆ. *Muscidans.*

CCIV. Genus MUSCA. Linn.

(444) 1. \* MUSCA CADAVERUM. *Carcase Musca.*

*M. (Cadaverum) nigra; prothorace abdomineque ex viridi atro-cæruleis; fronte versicolori; palpis subferrugineis; alulis albis, neura cingente testacea.*

Carcase Musca, black; thorax and abdomen black-blue with a green tint; front changeable; palpi subferruginous; winglets white, surrounded with a testaceous nervure.

Length of the body  $4\frac{3}{4}$  lines.

A single specimen taken in Lat. 65°.

DESCRIPTION.

Body black, with black hairs and bristles. Antennæ plumate; eyes brown; the cheeks and front in certain lights appear hoary or silvery from inconspicuous down, in others black; feelers subferruginous; trunk and abdomen black-blue with a greenish tint; wings hyaline; intermediate areolet obtusangular; winglets white, bordered with a testaceous nervure.

This species approaches very near to *M. cadaverina*, but the front, winglets, and palpi are of a different colour.

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(445) 2. \* MUSCA MORTISEQUA. *Funereal Musca.*

*M. (mortisequa) thorace obsolete trivittato; abdomine cæruleo, nitido; ore ferrugineo, palpis pallide rufis; alulis magnis albis; alis areola intermedia acutangula.*

Funereal Musca, thorax with three obsolete stripes; abdomen blue, glossy; front ferruginous; feelers pale-red; winglets large, white; wings with the intermediate areolet acutangular.

Length of the body  $5\frac{1}{2}$  lines.

Several taken with the preceding.

## DESCRIPTION.

Body black, with black hairs and bristles. Eyes brown; cheek and front ferruginous, in certain lights exhibiting something of a golden lustre: feelers long, slender, reddish-yellow: trunk slightly hoary, with three very indistinct black dorsal stripes: wings hyaline, with the intermediate areolet projecting internally into an acute angle: winglets white terminated by a white nervure: abdomen heart-shaped, glossy, blue with a slight tint of green.

This seems to be the American representative of *M. vomitoria*, from which it differs chiefly in having three obsolete black stripes between the wings; in the anterior spiracles not being of a different colour from the rest of the trunk; in having white winglets and not black edged with white; and in the abdomen exhibiting no changeable appearance of chequer-work.

VARIETY B. with a green abdomen.

C. with chalybeous abdomen.

## ORDER HOMALOPTERA. Leach.

## PUPIPARA. Lat.

Family HIPPOBOSCIDÆ. *Hippoboscidsans.*

CCV. Genus HIPPOBOSCA. Linn.

(446) I. HIPPOBOSCA EQUINA. *Equine Hippobosca.*

*Hippobosca equina*. Linn. *Syst. Nat.* ii, 1010, 1; *Fn. Suec.* 1921. *Fab. Ent. Syst.* iv, 415, 1; *Syst. Antl.* 337, 2. *Lat. N. D. D'H. N.* xiv, 483.; *Crust. Arachn. et Ins.* ii, 543. *Pod. Mus. Græc. t. cxx.* *Scop. Carn.* 1022. *Frisch. Ins.* v, t. xx? *Schrank. Enum.* 1007. *De G. vi*, 275, 1, t. xvi, f. 1, 2. *Schæff. Icon. t. clxxix*, f. 8, 9. *Müll. Fn. Frid.* 729. *Schell. Dipt.* 92, t. xlii, f. 1. *Stew. Elem.* ii, 274. *Panz. Fn. Germ.* vii, t. 23. *Shaw. Zool.* vi, 401, t. cxiv. *Leach Encycl.* ix, 130; *Eprob.* 9, t. xxvi, f. 4—7. *Sam. Compend.* 302, t. ix, f. 11. *Kirb. and Sp. Introd. to Ent.* i, 227. *Lam. An. sans Vertèbr.* iii, 347, 1.

*Mouff. Ins.* 59? *Reaum. Ins.* vi, 569, t. xlvi. *Sulz. Ins. t.* xii, f. 141. *Geoff. Ins.* ii, 547, 1, t. xviii, f. 6.

Length of the body  $\left\{ \begin{array}{l} \text{excluding wings, 4} \\ \text{including wings, 5} \end{array} \right\}$  lines.

Locality not mentioned.

## DESCRIPTION.

Body flat; subpubescent, dirty-yellow, spotted with brown, with whitish signatures. On the forehead, between the eyes, is a brown quadrangular spot shaped like what are called skates eggs, with four projecting points at the angles: abdomen underneath pale, anus hairy: tarsi with four black claws, the inner ones shorter and truncated: wings much longer than the body.

One of the characters assigned to this genus by Fabricius is the want of stemmata, but if the present species is examined under a powerful magnifier, one will be discovered at the posterior internal angle of each eye.

## ORDER APHANIPTERA. Kirb.

Family PULICIDÆ. *Pulicidans*.

CCVI. Genus PULEX. Linn.

(447) 1. \* PULEX GIGAS. *Giant Pulex*.

*P. (Gigas) ovatus, luteo-testaceus, nigro setosus; thoracis segmento primo apice setis pectinato; secundi basi nigra; antennis brevissimis, conicis; femoribus compressis, subovatis, latissimis.*

Giant Pulex, ovate, yellowish-red; bristles black; first segment of the thorax pectinated with bristles; second black at the base; antennæ very short, conical; thighs compressed, rather ovate, very broad.

PLATE VI, FIG. 9.

Length of the body 2 lines.

Two specimens taken in Lat. 65°.

## DESCRIPTION.

Body ovate, reddish-yellow: segments, particularly the first of the trunk, pectinated with black bristles; antennæ though short very distinct, standing out from the head, they seem to consist of two joints, the last conical and obtuse; the base of the second segment of the trunk is black; the thighs are very flat and wide, inclining to ovate; tibiæ armed with long black bristles.

This I believe is the largest flea known, but I have not been able to ascertain upon what animal it was captured.

## INDEX.

The references to groups, whose characters are given in the text, are in SMALL CAPITALS. Those to the species described are given so fully, in the table of contents prefixed to the volume, that it is unnecessary to repeat them. Synonymes and groups or species incidentally noticed are in *Italics*. Where Roman characters are used to indicate any Trivial name, they imply that the species is described under that name in the work.

N.B. In the text of this volume an asterisk (\*) prefixed to a genus or species, signifies that it is non-descript: an obelus (†) prefixed to a word, that it is a subgenus.

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