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# ZOOLOGICAL CLASSIFICATION:

A HANDY BOOK OF REFERENCE,

WITH

TABLES OF THE

SUBKINGDOMS, CLASSES, ORDERS, &c.

OF THE

## ANIMAL KINGDOM,

THEIR CHARACTERS, AND LISTS OF THE

FAMILIES AND PRINCIPAL GENERA.

BY

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SECOND EDITION.

WITH ADDITIONS AND A GLOSSARY.

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ALERE FLAMMAM.



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Nymphalis.	Mechanitis.	Gonopteryx.
Epicalia.	Ithomia.	Leucophasia.
Anartia.	Dircenna.	Pieris = Pontia.
Eunica.	Euploea.	Anthocharis.
Heterochroa.	Danais.	Thyca.
Timetes.		Tachyris.
Eubagis.	<i>Papilionidæ.</i>	Callosune.
Myscelia.	Terias.	Iphias.
Acræa.	Callidryas.	Thais.
Colœnis.	Zegris.	Doritis = Parnassius.
Euides.	Leptalis.	Ornithoptera.
Heliconia.	Colias.	Papilio.

## Order VIII. COLEOPTERA.

## ELEUTHERATA.

Four wings, the anterior [elytra] hard, meeting down the back by a straight suture; the posterior wings membranous, folded back transversely before the apex. Mandibulate. Four palpi. Larva variable, with legs (six) or apodal; no prolegs. Pupa inactive, showing more or less the parts of the future insect.

The antennæ are generally composed of eleven joints, but sometimes, although very rarely, fifty or more, in *Articerus* only one, varying greatly in character, and occasionally also according to sex. There are two eyes; one or two ocelli are found in some Dermestidæ, as well as in *Homalium* and a few allied genera. That they are true ocelli, however, has been denied. The mouth, very uniform in its type, and complete in its structure, consists of an upper lip or labrum attached to the clypeus, generally by a membrane called the epistome, two strong mandibles, two weaker maxillæ, each carrying a palpus and mostly two-lobed, and a lower lip or labium, with a pair of palpi, and attached to the mentum, which in its turn is attached to the lower part of the head, or jugulum. Some confusion has arisen from calling the labium and mentum together by the former name; the labium then becomes the "ligula," an inappropriate designation, sometimes confounded with "lingula" ["languette" of the French entomologists], and so regarded as a tongue; but if any thing is to be considered in Coleoptera analogous to the tongue, it is the paraglossæ, delicate membranous organs occasionally found behind the labium. The prothorax is the only portion of the thorax seen from above when the elytra are closed, except the scutellum; but this part is frequently wanting; it belongs to the mesothorax.

The elytra, coriaceous, or horny, when there are no inferior wings, are frequently soldered together; in one or two genera one overlaps the other, and in some they diverge. Rarely the females have neither wings nor elytra. The abdomen is connected by its entire anterior portion to the metathorax. A small movable piece attached to the coxa, called the trochantin, is sometimes present. The anterior tarsi are absent in some Lamellicorns, as well as the claw-joint in certain Curculionidæ.

The larvæ vary enormously, from the shrimp-like active *Dytiscus* to the footless Curculionidæ. In *Meloë* there are three larval forms.

The cockchafer (*Melolontha vulgaris*), the sacred beetle of the Egyptians (*Scarabæus sacer*), shard or dung-beetle (*Geotrypes stercorarius*), Spanish fly (*Cantharis vesicatoria*), glow-worm (*Lampyris noctiluca*), and corn-weevil (*Calandra granaria*) are members of this order, and, too well known in the larva state, the turnip-fly (*Haltica nemorum*) and others of the same genus, wire-worm (*Agriotes lineatus*), meal-worm (*Tenebrio molitor*), the church-yard beetle (*Blaps mortisaga*), and Colorado potato-beetle (*Doryphora decemlineata*). *Anobium domesticum* has the common name of "death-watch."

Latreille long ago divided this order into four sections, under which the families are even now almost universally arranged. It is, however, a somewhat artificial system, as it would, if strictly followed, widely separate closely allied groups. These sections are dependent on the number of joints of the tarsi, thus:—Pentamera have five joints to all the tarsi; Heteromera have five joints to the four anterior tarsi only, the posterior having only four; Tetramera have the tarsi four-jointed, and Trimerera have them three-jointed; but exceptions occur in all. The last two sections have frequently a minute penultimate joint [arthrium], and have therefore been named Subpentamera, Pseudotetramera, and Cryptotetramera, and Subtetramera, Pseudotrimerera, and Cyptotrimerera respectively. The subsections were ranked as families by Latreille. Stylopida, frequently placed in a distinct order [Strepsiptera, or Rhipiptera], are now pretty generally regarded as a degraded type related to Rhipiphorida and Meloidæ.

Above 80,000 species belonging to this order are described, distributed under nearly 8000 genera.

### TRIMERA.

Maxillary palpi securiform .....	APHIDIPHAGA.
Maxillary palpi filiform .....	FUNGICOLA.

APHIDIPHAGA.—Maxillary palpi with the last joint securiform. Antennæ short, the last three joints forming a club.

The bodies of these insects are hemispherical; they have short legs, and strong powers of flight. They feed on Aphides, both in the larval and perfect states.

<i>Coccinellidæ</i> (Lady-birds).	Chilocorus.	Scymnus.
	Coccidula.	Synonycha.
<i>Epilachna</i> .	Cranophorus.	Coccinella.
<i>Exochomus</i> .	Rhizobius.	Megilla.

FUNGICOLA.—Maxillary palpi with the last joint filiform. Antennæ moderately long, flattened, or with a flattened club.

The European species only are known to feed on fungi both in their larval and perfect states. *Trochoideus* has 4-jointed antennæ. *Mycetæidæ* contains a number of genera of uncertain affinities. Their tarsi are 4-jointed; nevertheless their nearest allies appear to be the *Endomychidæ*. *Orestia* is referred by Erichson to the *Halticidæ*. *Trochoideus* is a very aberrant genus, simulating the *Paussidæ*.

<i>Endomychidæ</i> .	Dapsa.	<i>Mycetæidæ</i> .
Stenotarsus.	Corynomalus.	Lithophilus.
Endomychus.	Eumorphus.	Symbiotes.
Lycoperdina.	Encymon.	Leistes.
Daulis.		Mycetæa.
	Orestia.	Trochoideus.

#### TETRAMERA.

Head rostrate .....	RHYNCHOPHORA.
Head not rostrate.	
Maxillæ with one lobe .....	XYLOPHAGA.
Maxillæ with two lobes.	
Antennæ linear.	
Body elongate .....	LONGICORNIA.
Body ovate or round .....	PHYTOPHAGA.
Antennæ clubbed at the end .....	CLAVIPALPI.

CLAVIPALPI.—Last three joints of the antennæ forming a compressed club. Maxillary palpi with the last joint broadly transverse.

These insects are apparently vegetable-feeders; they are mostly exotic; the few British species are found in fungi.



<i>Erotylidæ.</i>	Ischyryus.	Encaustis.
Homœotelus.	Mycotretus.	Helota.
Zonarius.	Engis=Dacne.	
Erotylus.	Thallis.	<i>Languriidæ.</i>
Cyclomorphus.	Triplatoma.	Languria.
Tritoma.	Episcapha.	Macromela.
Triplax.		

PHYTOPHAGA.—Antennæ linear, of moderate length, or short. Body ovate or suborbicular. The elytra covering the sides of the abdomen.

Crioceridæ have an oblong body, and frequently enlarged posterior femora (hence Eupoda of Latreille); many species are more or less aquatic. The other families have mostly a rounded body (Cyclica, Latr.), and are invariably terrestrial. They are all found on plants, feeding principally on the leaves. In this group there are over 10,000 described species.

<i>Cassididæ.</i>	Cephalolia.	Octogonotes.
Aspidomorpha.	Leptispa.	Homotyphus.
Elytrogona.	Eurispa.	Loxoprosopus.
Selenis.	Aproida.	Podontia.
Pæcilaspis.		Blepharida.
Chelymorpha.	<i>Galerucidæ.</i>	Ædionychis.
Mesomphalia.	Cerotoma.	Thyamis=Longitar-
Coptocycla.	Aplosonyx.	sus.
Cassida.	Adimonia.	Haltica.
Batonota.	Galeruca.	Mantura=Balano-
Dolichotoma.	Metalepta.	morpha.
Desmonota.	Cœlomera.	Arsipoda.
Tauroma.	Atysa.	Diamphidia.
Calopepla.	Luperus.	
Prioptera.	Agetocera.	<i>Chrysomelidæ.</i>
Himatidium.	Malacosoma.	Paropsis.
Hoplionota.	Agelastica.	Phratora.
	Diabrotica.	Timarcha.
<i>Hispidæ.</i>	Adorium.	Diphyllocera.
Hispa.		Æsernia.
Cephalodonta.	<i>Halticidæ.</i>	Ceralces.
Metaxycera.	Psylliodes.	Doryphora.
Arescus.	Sphæroderma.	Zygogramma.
Alurnus.	Mniophila.	Chrysomela.
Gonophora.	Linozosta=Hermeo-	Lina.
Cryptonychus.	phaga.	Phædon.
Hispodonta.	Monoplatus.	Gastrophysa.