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A manual of entomology

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Introduction.
INTRODUCTION.

DEFINITION AND COMPASS OF ENTOMOLOGY.

§ 1.

Natural History has for its object the inquiry into the being of natural bodies and their thorough investigation in reference to their various qualities, and the relative functions of their component parts. Understood in this extent, it presents us with a distinct unique entirety, which treats the natural body as complete, but gradually perfected; and at the same time seeks to discover the means whereby it attained its completion and perfection. Natural History, therefore, is no mere description of form,—no description of nature, as it has been, latterly, very incorrectly considered, but a true, and pragmatical history, developed from its own fundamental principles.

Entomology is that branch of this extensive science, which treats of the Natural History of Insects.

Insects are animals with articulated bodies divided into three chief portions, the head, thorax, and abdomen; they have three pairs of legs, and generally two pairs of wings, and, to acquire this structure, pass through several transformations and changes, called their metamorphoses.

The object of Entomology, consequently, is to investigate the nature of insects; its design is to show how the insect is organised and formed, and why it was obliged to adopt this particular conformation and internal structure; and when this is accomplished, it proceeds to the generalisation and development of the various vital phenomena observable in the class. Its view is, however, not limited here to show the mere general form of the body of the insect, but it also displays how this general...
form varies in the several orders of insects, and how far this transfor-
mation and change may extend without destruction to its identification.

This comprises, therefore, a summary of the essential purpose of the
science. The chief incentive to our study, and investigation, of natural
bodies in general, is the instinctive impulse of the human mind towards
progressive information, and the extension of the circle of its knowledge;
but, in this pursuit, a multiplicity of useful discoveries are made, which
are applicable to daily life, and which distinctly show the evident
advantages of the science, although their elicitation can never be consi-
dered the primary object of scientific research. The study of insects
will likewise be found rich in similar results, which I shall state in its
appropriate place.

§ 2.

Thus, the Natural History of Insects falls into two great divisions—
viz. the introductory, or general portion, and the particular, or systematic
Natural History of them.

The former, or general division, acquaints us with insects with respect
to their exterior construction, and with regard to their interior organ-
isation; it also instructs us of the various phenomena displayed by this
class of animals; and lastly, develops the principle upon which insects
must be arranged, and naturally subdivided. The following divisions
are thence deduced:—

1. The Orismology, generally called the Terminology *, which
contains the various technical terms used in explaining the perceptible
differences in the body of an insect, and at the same time acquaints
us with its exterior visible parts in the several periods of its existence,
until its full and perfect development.

2. The Anatomy, or, as it has been called, in reference to the
dissection of insects, Entomotomy, which acquaints us with their in-
ternal construction, and with the form as well as texture of their organs.

3. In their Physiology we learn the functions of these organs.
Besides which, it generalises the multifariously varied phenomena dis-
played by these animals, and re-examines, under a general view, those to
which we are accustomed to apply the name of instinct.

* Kirby has introduced the term Orismology in lieu of the hybrid compound
Terminology, but which being derived from 'opus (terminus, definitio) should be
written Horismology. But as it is not unusual to reject the spiritus asper, we have
retained his orthography.
4. This is succeeded by their Taxonomy, or principles of arrangement, which, after giving its general rudiments, proceeds with a critical survey of the most remarkable Entomological systems.

§ 3.

The second or particular division of Entomology, contains merely the description of the insect world, from their highest to their lowest sub-divisions, in the mode most consonant with system and their scientific definition. It is this portion which is generally called systematic Entomology, or plainly Entomology, and which is both the most comprehensive, and most varied portion of the whole science.

§ 4.

These, therefore, are the several divisions of which the complete Natural History of Insects consists; they are all closely connected together, and produce, only by their strict union, that harmonious entirety of which the science boasts; whereas, the several parts, considered separately, form but dislocated fragments, each of which, without the elucidation of the rest, must frequently remain incomprehensible. The subdivision of insects into orders, groups, and families, does not properly belong here, but will find its true situation much lower, where we purpose passing to the particular description of the individuals of this class; but as, in the course of the following treatise, we shall so frequently have occasion to refer to the several orders, it will perhaps be considered not inapposite, particularly as it may assist the judgment of Tyros, if we here lay down the distribution into groups. It may remain here merely intercalated by anticipation.

The commencement of this introduction has already defined what an insect is; all animals comprised in it may be thus classed into

A.—Those with an imperfect metamorphosis, i. e. larva, pupa, and perfect insect, strongly resembling each other, the pupa possessing locomotion and eating.

A. having a suctorial mouth.

1. ORDER.—HEMIPTERA.—(Cimices, Bugs, &c.)

b. having a masticating mouth.

a. Four unequal wings, the superior ones pergamenous, the inferior generally larger, and membranous; the latter are folded in repose.
2. ORDER.—Orthoptera.—*(Locusts, Grasshoppers, &c.)*

b. Four sometimes equal, sometimes unequal membraneous wings with reticulated nervures, but never folded.

3. ORDER.—Dictyotoptera.—*(Cockroaches.)*

B.—Those with a perfect metamorphosis. The larva is a long maggot, caterpillar, or wornil. The pupa generally quiescent, and does not eat.

a. Some have a suctorial mouth.

a. Insects with two naked transparent wings.

4. ORDER.—Diptera.—*(Flies.)*

b. Insects with four large wings, covered wholly, or partially, with broad scales.

5. ORDER.—Lepidoptera.—*(Butterflies, Moths.)*

b. The others have a masticating mouth, or at least visible mandibles and palpi.

a. Four equal wings, with reticulated nervures.

6. ORDER.—Neuroptera.—*(Dragon Flies, &c.)*

b. Four unequal wings, with the nervures variously branching.

7. ORDER.—Hymenoptera.—*(Bees, Wasps, Ichneumons, &c.)*

c. Four unequal wings, the superior ones consisting of a corneous case.

8. ORDER.—Coleoptera.—*(Beetles.)*

Note.—Throughout almost all the orders there are apterous families, genera, and species, which are very easily referred to their orders from their metamorphosis, and the structure of their mouths, but they never form correctly a distinct one, as Latreille insists, and which he calls Aptera.