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

FRANCIS P. PASCOE, F.L.S. &c.

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WITH ADDITIONS AND A GLOSSARY.

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MDCCCLXXX.

To the form of disk without a velum Huxley restricts the term umbrella: in the Calycozoa it is prolonged aborally into a longer or short peduncle, terminating in a hydrorhiza, by which the animal is enabled to fix itself to any foreign body at will. When detached, the contractions of the umbrella enable it to swim with the ease of an ordinary medusoid body. The order contains but one family:—

Lucernariidæ.

Lucernaria.
Depastrum.
Carduella.

Subclass III. SIPHONOPHORA.

Oceanic Hydrozoa.

Hydrosome free and oceanic, simple or branched, consisting of several polypites connected by a contractile cœnosarc, and attached at the proximal end to a disk, float [pneumatophore], or body-sac [somatocyst].

The polypites have each a tentacle, often of great length, provided with lateral branches having thread-cells [trichocysts, modified zooids]. Each polypite is occasionally protected at the base by overhanging plates [hydrophyllia]. Certain bell-shaped cups [specialized nectocalyces] are frequently present, attached to the hydrosome, by the contraction of which the animal is propelled through the water. The pneumatophore contains an air-sac [pneumatocyst], variously formed, with firm chitinous walls. Vesicles and pigment-spots [ocelli], often very brilliant, are found round the margins of the nectocalyces: the former have been called "otolites," and have been supposed to be auditory organs; the latter are possibly the earliest indication of eyes.

The Siphonophora are organisms of a very delicate and peculiarly composite character, almost exclusively found floating on the surface of tropical seas. They have rarely a radiate character, but are either bilateral or unsymmetrical. Their reproductive organs are gonophores, varying from the simplest form to medusoids of the normal type.

A body-sac at the proximal end..... Calycophoræ.
A float at the proximal end ..... Physophoræ.

Order I. CALYCOPHORÆ.

Polypites united by a filiform and unbranched cœnosarc; the proximal end modified into a somatocyst, and provided with one or more nectocalyces.

"Sets of appendages—each consisting of a hydrophyllium, a hydranth with its tentacle, and gonophores, which last bud from the pedicle of the hydranth—are developed at regular intervals on the cœnosarc, and the long chain trails behind as the animal swims with a darting motion, caused by simultaneous rhythmical contraction of its nectocalyces, through the water." [*Huxley.*] The distal set of these appendages, as they attain their full development, "becomes detached as a free-swimming complex *Diphyzooid*." In this condition they grow and alter their form, until the gonophores which they develop "become detached, increase in size, become modified in form, and are set free as a third series of independent zooids."

These animals are so transparent as only to be noticed at a distance by their bright tints.

Diphyidæ.	*Sphæronectidæ.*	*Hippopodiidæ.*
Diphyes.	Sphæronectes.	Hippopodius.
Abyla.	Monophyes.	Vogtia.

Prayidæ.

Praya.

Order II. PHYSOPHORÆ.

Polypites united by an unbranched, or very slightly branched, filiform, globular, or discoidal cœnosarc; the proximal end modified into a pneumatophore, and sometimes provided with nectocalyces. Mostly monœcious.

The tentacles are either attached to the cœnosarc, or singly to a polypite; they are forty inches long in *Halistemma rubrum*, while the pneumatophore is only three or four lines in its largest diameter. The pneumatophore, however, is generally of much larger size, and in the Velellidæ it is "converted into a sort of hard inner shell, its cavity being subdivided by septa into numerous chambers."

The members of this order differ considerably among themselves, but they all agree in having a pneumatophore.

The well-known "Portuguese man-of-war" (*Physalia pelagica*) is the only species of the order that has received an English name. It represents a suborder (order) for Claus, as do also the Velellidæ (Discoideæ).

Apolemiidæ.
Apolemia.

Stephanomiidæ.
Stephanomia.
Agalma.
Halistemma.

Physophoridæ.
Physophora.
Stephanospira.

Athorybiidæ.
Athorybia.

Rhizophysidæ.
Rhizophysa.

Physaliidæ.
Physalia.

Velellidæ.
Velella.
Porpita.

Class III. ACTINOZOA.

Polypi. Corallaria. Anthozoa.

The digestive cavity not in contact with the outer wall of the body, but separated by an intervening perivisceral space.

The perivisceral space is radially divided into a number of compartments by membranous partitions [mesenteries], in which the reproductive organs are placed. Reproduction also takes place by budding, by fission of small fragments separating from the edge at the base [*Gosse*], as well as by ordinary generation. The egg, in the latter case, develops into an infusorial-like germ, with vibratile cilia and free locomotion [planula]. The sexes are either united or distinct.

The mouth is furnished with tentacles, hollow, and either simple or fringed, capable of being withdrawn into the body-cavity. No manducatory apparatus exists.

The great majority are composite organisms, mostly provided with a horny or calcareous secretion, known as the "corallum" or "polypary." The corallum-tissue [sclerenchyma] presents every gradation between the solid condition and the spicular stage. For these animals collectively Huxley extends the term "Coralligena."

There are two subclasses:—

Tentacles simple ..... Zoantharia.
Tentacles pinnately fringed ..... Alcyonaria.