INTRODUCTION.

Historical Resume.

Hydroida is a group that took long years for the revelation of its proper identity. The earliest naturalists treated these as plants. Ferrante Imperato (1599), an Apothecary in Naples was the first to point out the animal nature of these 'corals'.

Linnaeus (1756) was in every sense the first systematist who laid the foundation for a proper classification of these Zoophytes. In the 10th Edition of "Systema Naturae" (1756) he divided 'invertebrate animals' into two classes; 'Insects' and 'Vermes' and the latter was further divided into 'Lithophyta' and 'Zoophyta'. Lithophytes included Tubipora, Millipora and Madripora, while Zoophytes included Isis, Gorgonia, Alcyonium, Tubularia, Eschara, Corallina, Sertularia, Hydra, Pennatula, Taenia and Volvox.
Cuvier treated the Zoophytes under 'Les Polypes' and based his classification on anatomical features. He classified Les Polypes into three orders, 'P. chronus', 'P. gelatineux' and 'P. apolypiers'. The last group was further divided into 'Les polypes tuyppier' (Hydroids), 'Les polypes a cellules' (Polyzoa) and 'Les polypescotticaux' (Actinozoa).

This was followed by Lamarck's scheme of classification. He divided the class 'Polypi' into five orders. The first order 'P. ciliata' included those polyps without tentacles, but only vibratile cilia. The second order 'P. demudata' included fixed naked polyps with tentacles. To this order he assigned Hydra, Coryne, Pedicellaria and Zoanthus. The third order 'P. vaginata' included polyps with tentacles and theca. This large group was further divided into 7 sections and included among others all thecate hydroids. The fourth order 'P. tubifera' included Athelia, Xenia Ammoothea and Lobularia. Finally 'P. nantantes' included forms with common elongated and fleshy organic mass like Renilla, Virgularia etc.
Lamouroux (1821) divided the Zoophytes into divisions, sections and orders, where the flexibility and composition of the 'polypodom' was used in the primary classification. His classification has been justly called "elaborately mis-arranged".

In 1822, Fleming attempted an original classification of the Zoophytes. He divided it into four groups, 1 'Carnosa' comprising those 'polypodoms' with fleshy body like Pennatula, Virgularia etc., 2 'Cellulifera' that included Tubinora, Millinora, Eschariidae and Flustridae, 3 'Thecata', which included Coryne and Hydra.

This was followed by a number of publications by Professor Grant (1827), Milne Edwards (1828), Blainville (1834) Lamouroux (Second Edition 1836), Johnston (1847), McCrady (1856), A. Agassiz (1862), L. Agassiz (1865) etc. The contributions of these authors have done much to enrich the knowledge on the natural history of hydroids, though they did not offer any new scheme of classification.

For the present day conception of the Class Hydrozoa, we are greatly indebted to Thomas
Hincks. Hincks (1868) in his monumental work "History of the British Hydroid Zoophytes" divided the Class Hydrozoa into 3 orders (viz. Hydroida, Siphonophora and Discophora). Order Hydroida was further divided into Suborders Athecata, Thecata, and Gymnochora. Very little change has come in the fundamental classification of Hincks, except that the last suborder is more popularly known as Hydrida.

The general basis of classification thus well laid, the contributions of later workers in the field were mainly in the nature of clearly defining the known genera and adding new ones to the list. With Hincks began the modern era of Hydroid systematics. Allman, Bale, Bedot, Billard, Broch, Hartlaub, Jaderholm, Kirchenpauer, Kramp, Kuhn, Leloup, McLean Fraser, Nutting, Rees, Russell, Stechow and Vervoort are among those who have contributed much to the knowledge of Hydroids.

The works of Allman include a monographic study of the Gymnoblastic Hydroids and Lengthy papers on the collections of 'Challenger', 'Porcupine' and 'Gulf Stream' expeditions. Allman
is responsible for the creation of a very large number of genera and species, a good number of which are valid even now. Though his illustrations are well known for artistic beauty, they are often criticised for lack of accuracy.

Bale concentrated his attention on the Hydroids of the Australian and neighbouring places. His reports were mainly on the Thecate forms. Bale's figures though not misleading, are not quite satisfactory, especially when one wishes to go into the finer details of comparison.

Billard's is a scholarly approach to the subject. Though he has done little in improving the classification, he was rather conservative in his attack on Stechow. He re-examined the collections of Lamarck and Lamouroux and also the collections of British and Paris Museums. He has also published extensive treatises on the Hydroids of the 'Travailleur' & 'Talisman' and 'Siboga' expeditions. As he mainly concentrated on Sertulariidae and Plumularioidae, we are deprived of his valuable comments on other groups, which would otherwise have been available. His illustrations are accurate.
Kirchenpauer also concentrated on the thecate forms. He attempted a remodelling of the systematics of Sertulariidae and Plumulariidae.

Levinsen revised Sertularella, and Kuhn published elaborate accounts on the morphology, development and affinities of several groups of Hydroids. Following Levinsen and Kuhn, Broch based his classification on rigid characters like the morphology of the trophosome. Broch's papers were based on collections from Europe and collections of 'Michael Sars' and Danish Ingolf expeditions. He also published detailed accounts on a few selected groups.

From a study of the reproduction of several hydroids, Kramp, Rees and Russell have shown that the classification should be based on the nature of the gonophore also.

Stechow will always be remembered as a revolutionary in the systematics of Hydroida. He has expressed his opinion and that too strongly on all the families and most of the genera of Hydroids. Strictly following the rules of
systematics, he suppressed many well known genera and created several new genera and species. Stechow gave equal importance to the characters of the trophosome and gonosome in the delimitation of genera. His material was from the Mediterranean, Japan, South West Australia and the collections of the 'Deutsche Tiefsee' Expedition. Stechow did not confine his opinion to the material under his examination, but gave opinion on others never seen by him. Though Stechow's contribution was considerable, the reactions of his contemporaries were rather caustic.

The more important contributions of Bedot are his "Materiaux pour l' histoire des Hydroides" and his critical notes on the various genera of the Plumulariidae. Nutting and Fraser concentrated on American Hydroids. Leloup's contributions were based on specimens from Europe, India, Indochina and East Indies. Jaderholm's reports were based on materials from nearly all parts of the world.
Previous works on the Hydroids of the
Indian region.

A number of collections of hydroids have been made from the Penninsular India, Maldives, Laccadives, Andamans and Ceylon, by individual workers as well as by the 'Dana', 'Siboga', 'Valdivia', 'Discovery', 'John Murray' and 'Galathea' expeditions. Individual reports were based on the collections of Armstrong from the Penninsular India, Stanley Gardiner from Laccadives and Maldives, Anderson and Cyrill Crosslands from Mergui Archipelago, Herdman from the Gulf of Manaar, Gravely from around Krusadai Island, collections of the Marine Survey, Zoological Survey of India and of Mariner's. Reports on the 'Valdivia' and 'Siboga' expeditions alone have been published*.

Armstrong obtained 7 species, all of which he described as new to science. A careful study of this work shows that his descriptions are

* Details regarding the collections of Hydroids from the Indian region and the present status of the species collected are given as appendix to this paper.
rather superficial and several of his species are now known under different specific and generic names.

Hinck's paper on the collection of Anderson from the Mergui Archipelago includes 3 species of which 2 are described as new.

Thornely's reports based on fairly rich collections from the Gulf of Manaar and Kathiawar coast contained 49 species of which 14 are described as new.

Materials collected by mariners from Pamban and neighbouring places and deposited in the Swedish Museums was worked out by Jaderholm. This includes 16 species.

Based on Holdsworth's collection, Allman described 4 species, all of which are treated as new.

Gardiner's collections of Hydroids from Maldives and Laccadive Archipelago contained 23 species, of which Borradeille described 8 as new. However, later authors relying mainly on his
illustrations considered a number of them as synonyms of already known species. Borradaile considered 11 species as subspecies, but the exact systematic status of these are not certain.

3 species collected from Port Canning and Chilka Lake were described by Annandale.

Ritchie's works on the collections of the Indian Museum and materials obtained from the Andamans include 24 species including 4 new species, 2 new varieties and 3 undetermined forms.

The material that subsequently accumulated in the Indian Museum was worked out by Leloup, who described 28 species, including 1 new species and 2 new varieties.

The only other noteworthy publication on the Hydroids of this region is that of Gravely, who described 21 species from the Gulf of Manaar. This work was intended as a guide to zoologists visiting that area and so the descriptions are short. He has created one new variety and the doubtful forms were compared to the allied ones or left undetermined.

On the whole 126 species of Hydroids have
been reported from the Indian region as against a world total of about 2000 living species. The scarcity in the number of the known Indian species does not imply a paucity of Hydroids in this region, but only shows a lack of interest in this group. This is evident from the fact that most of the collections made in the Indian region were identified by foreign experts, based on preserved material sent to them. Since preservation distorts the original appearance of the specimens, descriptions and illustrations have not always been accurate.

The present work is therefore an attempt to study in detail, the hydroid fauna of South-Indian coast, based on repeated collections from a selected number of localities representative of the different environmental conditions prevalent in this region.