WHAT IS THE SO-CALLED AMPHISTOMA (I)

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About 38 years ago I published some works on amphistomatid worms and about six years ago on some parasites of salmoneoid fishes of the North Pacific Ocean, as well as some reports on Acanthocephala, etc., in both Japanese and English articles. Recently I received an interesting work on amphistoma found in the digestive tract of Australian lungfish from the University of Nebraska. And for this occasion, I shall try to make a list of the so-called amphistoma, referring to the available literature. The classification systems were published by various authors.

Dr. Lauro Travassos, the eminent parasitologist in Brazil, published his system in 1934, consulting many authors such as Fischoeder (1901–1903), Stiles and Goldberger (1910), Stunkard (1925), Führmann (1928) and Fukui (1929). He accepted my system (1929) generously and included some monotrematous flukes as " partenitas." Dr. Satyu Yamaguti, the most eminent and energetic parasitologist, has published voluminous books, Systema Helminthum, and in Volume I, he described all digenetic trematodes, already known species of the world and many new ones (1958).

Now I do not want to endeavor to establish a new system, but have made a list of genera of the so-called amphistoma, adding some genera not found in Dr. Yamaguti's book. At first I intended to show a schematic figure for all genera, but as that would have taken too much time, I want to show them in part II. Studying various amphistomes, I am very much confused and have a question as to what the so-called amphistoma must be.

Some authors such as Dr. Ben Dawes seem to think that amphistomes are primitive digenea, but as he wrote in his book The Trematoda, it is very complicated and difficult to make clear the phylogenetical line of this group.

For convenience only, it is easy to recognize amphistoma as follows. A ventral sucker is found at the posterior end of the body and naturally genital organs are found anteriorly to the acetabulum. But there are some exceptions and in some, testes are found on both sides of the acetabulum, as Aphonyngogyliauchen and Plectognathotrema.

In concluding, I must ask again what the so-called amphistoma is. And I hope this problem will be clearly solved by eminent parasitologists in the near future.

ALPHABETICAL LIST OF GENERA OF SO-CALLED AMPHISTOMA

A. *Angiodictium* Looss, 1902
   Allassostoma Stunkard, 1917
   Allassostomoides Stunkard, 1925
   Aphyngogyliauchen Yamaguti, 1942
B. Balanorchis Fischoeder, 1901 (=Verdunia Lahille et Joan, 1917)
   Bancroftrem Añgel, 1966
   Brevicaecum?
   Brumptia Travassos, 1921
   Buxifrons Näsmark, 1937 (=Buxifrons sub. g. Fukui, 1929)
C. Calicophoron Näsmark, 1937

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Carmyerius STILES et GOLDBERGER, 1910
Catadiscus COHN, 1904
cavalleroia THAPAR, 1960
Cephaloporus YAMAGUTI, 1934
Ceylonocotyl NÄSMARK, 1937
Chiorchis FISCHOEDER, 1901
Chiostichorchis ARTIGAS et PACHECO, 1932
Choanomyzus MANTER et CROWCROFT, 1950
Cladorchis FISCHOEDER, 1901
Cleptodiscus LINTON, 1910 (=Neocladorchis BHALERAO, 1937)
Cotylophoron STILES et GOLDBERGER, 1910

D. Dadayius FUKUI, 1929
Dadaytrema TRAVASSOS, 1931 (=Dadayia TRAVASSOS, 1921, preoccupied)
*Deuterobaris Looss, 1900 (=Baris Looss, 1899, preoccupied)
Dermatemytrema PRICE, 1937
*Dictyangium STUNKARD, 1943
Diplosiscus DIESING, 1836
Dissotrema GOTO et MATSUDAIRA, 1918 (Syn. to Gyliauchen NICOLL, 1915)
Flagelotrema OZAKI, 1936
Fischoederius STILES et GOLDBERGER, 1910

G. Gastrodiscoides LEIPER, 1913
Gastrodiscus LEUCKART, 1877
Gastrothylax POIRIER, 1883
Gigantatrum YAMAGUTI, 1958
Gigantocotyle NÄSMARK, 1937 (Syn. to Paramphistomum)
Glyptamphistoma YAMAGUTI, 1958
Gyliauchen NICOLL, 1915 (=Dissotrema GOTO et MATSUDAIRA, 1918=Telotrema OZAKI, 1933)

H. Halltrema LENT et FREITAS, 1939
Hawkesius STILES et GOLDBERGER, 1910
Helostomatias FUKUI, 1929 subgenus
Homalogaster POIRIER, 1883

I. Ichthyotrema CABALLER et BRAVO, 1952
Indosolenorchis CRUSZ, 1951

J. Johnsonitrema YAMAGUTI, 1958

K. Kalitrema TRAVASSOS, 1933

L. Lorisia PENSO, 1940 [Dr YAMAGUTI Gen, sed. inq.]

M. MacallumiA CHATTERJI, 1938 (Syn. to Protocladorchis)
Macropharynx NÄSMARK, 1937
Macrorchitrema PÉREZ VIGERAS, 1940
Megalodiscus CHANDLER, 1923
Microrchis DADAY, 1904 (Syn. to Chiorchis by SOUTHWELL et KIRCHNER, 1937)
*MicroscaphidiA LOoss, 1900 (=Microscapha LOoss, 1899 preoccupied)

N. Nematophila TRAVASSOS, 1934
Neocladorchis BHALERAO, 1937 (Syn. to Cleptodiscus LINTON, 1910)
Nicodiscus SrIVASTAVA, 1938
Nicotyle NÄSMARK, 1937

O. *Octangioides PRICE, 1937
*Octangium LOoss, 1902 (=Neoctangium RUIZ, 1943)
Olveria THAPAR et SINHA, 1945
Ophioxenos Sumwalt, 1926
Opisthodiscus Cohn, 1904
Opistholebes Nicoll, 1915
Orientodiscus Srivastava, 1938

P  Parachiorchis Caballero, 1943
Paragyliauchen Yamaguti, 1934
Paramphistomoides Yamaguti, 1958
Paramphistomum Fischoeder, 1901 (=Gigantocotyle Näsmark, 1937)
Pfenderius Stiles et Goldberger, 1910 (=Tagumaea Fukui, 1926?)
Pisciamphistoma Yamaguti, 1958
Platyamphistoma Yamaguti, 1958
Plectognathotrema Layman, 1930
*Polyangium Looss, 1902
Protocladorchis Willey, 1935 (=Macallumia Chatterji, 1938) (=Chiorchis by Fukui, 1929)
Pseudoallassostoma Yamaguti, 1958
Pseudochiorchis Yamaguti, 1958
Pseudocladorchis Daday, 1907 (=Pseudodiscus Sonsino, by Southwell et Kirshner, 1937)
Pseudodiplodiscus (Diesing, 1835) Szidat, 1939 in Manter’s paper
Pseudodiscus Sonsino, 1895
Pseudoparamphistoma Yamaguti, 1958
Pseudopisthodiscus Yamaguti, 1958

Q. Quasichiorchis Skrjabin, 1949

S. Schizamphistomoides Stunkard, 1925
Schizamphistomum Looss, 1912
Solenorchis Hilmy, 1949
Stephanopharynx Fischoeder, 1901
Stichorchis (Fischoeder, 1901) Looss, 1902
Stunkardia Bhalerao, 1931

T. Tagumaea Fukui, 1926 (Syn. to Pfenderius ?)
Taxorchis Fischoeder, 1901
Telotrema Ozaki, 1933 (Syn. to Gyliauchen Nicoll, 1915)
Travassosina Vaz, 1932 (Syn. to Chiorchis Fischoeder by Southwell et Kirshner, 1937)

U. Ugandocotyle Näsmark, 1937
V Verdunia Lahille et Joan, 1917 (Syn. to Balanorchis)
W Wardius Barker et East, 1915
Watsonius Stiles et Goldberger, 1910
Z. Zygocotyle Stunkard, 1917

The above mentioned generic names are all I could cite from the literature available to me. With an asterisk marked ones are monostomatic flukes, which by some authors are arranged in the amphistoma group.