

The infected parts of the stem cuttings were removed, surface sterilised with 0.01% mercuric

**HEAD ORGAN PATTERNS OBSERVED  
IN SOME INDIAN FRESH-WATER  
DACTYLOGYRIDS; TREMATODA-  
MONOGENEA**

CHARACTERISTIC glandular bodies occurring in the cephalic lobes of almost all members of the family Dactylogyridæ have been variously named by different authors as *cephalic bodies*, *anterior adhesive organs* or *adhesive organs*. Johnston and Tiegs<sup>10</sup> called them head organs. Later workers like Mizelle,<sup>11</sup> Mueller,<sup>12</sup> and Hargis<sup>1</sup> adopted the same term which is now in universal use.

The author (Jain<sup>3-5</sup>) used the same term while describing these organs in some Indian dactylogyrids. It appears that no attempt has so far been made to classify the various diverse patterns of head organs. The main difficulty has been that many old descriptions lack a clear diagram of these organs and almost all recent descriptions omit the diagram altogether.

During my investigation, however, it was possible to draw detailed diagrams and make a close study. Hargis<sup>2</sup> chloreton technique was used for the recovery of trematodes from the gill filaments of fishes. It gave the immediate advantage of getting fresh trematodes for study which are naturally more transparent.

The various types of head organs, I have come across, can be conveniently classified into two main groups: A—in which the head organs

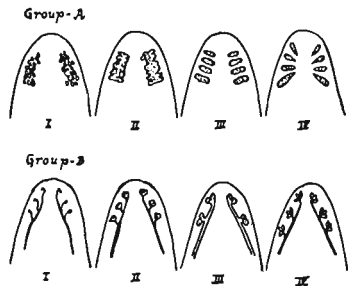


FIG. 1

do not communicate with each other, there being no duct or canal to join all organs of one side, and B—in which there are definite channels on either side, joining all the organs of that side. Each group, A and B, can be further subdivided into four main types, as follows:

TABLE I

Group	Type	Subfamily Dactylogyriņe	Subfamily Tetraorchine
A	I	<i>Dactylogyryus multispiralis</i> Jain, 1957	* <i>Urocleidus rhycollelli</i>
	II		* <i>Urocleidus notopteri</i> Jain, 1955
	III		* <i>Bisfurcophaptor indicus</i>
	IV		* <i>Tetraprocleidus wallagonius</i> Jain, 1952 * <i>Urocleidus xenotodi</i>
B	I	<i>Neodactylogyryus calbzi</i> Jain, 1957	* <i>Urocleidus vachius</i>
	II		* <i>Urocleidus polyspiralis</i>
	III		* <i>Mizelleus indicus</i> Jain, 1957
	IV		* <i>Bisfurcophaptor giganticus</i>

Indicates the name of trematodes descriptions of which are still in press.

#### Group A

I. Disorganised small rounded glands, perhaps most simple and primitive.

II. Compact organ on either side, with irregular margins, as if by fusion of smaller glands.

III. Lobate organs on either side. Each lobe divided into distinct lobules.

IV. Specialised lobes on either side. Each lobule in pair with definite shape: rounded distal end and sharp conical proximal end.

#### Group B

I. Primitive small rounded glands, joined to a common duct on either side.

II. Swollen sac-like glands, filled with clear granular fluid, on either side, joined by common ducts.

III. Double lobules by a division of the main lobule, filled with granular fluid, joined to common ducts on either side.

IV. Triple division of the main lobule. Perhaps this is the most specialised pattern. It is found in the largest fresh-water tetraorchid, so far known.

In Table I are given the examples of each type of head organ pattern, together with subfamily, group and type.

The observations were made in the Zoology Department of Lucknow University, under supervision of Professor M. B. Lal, to whom my thanks are due.

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