

Appreciable enrichment of I-131 is seen in the first four species. However, these values are much lower than those reported with stable isotopes (100-30,000).⁴ It is observed generally that with species 5, 6 and 7 much more illumination time is required to reach equilibrium and it is difficult to get K values by rearing experiments. The effect of decreasing pH is in general to lower the K values by as much as 92% (Sp. 1, 2 and 8) which may be attributed to some anion exchange reactions taking place at the surface of algæ involving iodine. Seasonal variations, size and/or age of organisms also seem to have affected the uptake but not of any significance.⁵ However, stable iodine if deliberately added to the solution (100 µg. of stable I₂/litre) brought down the K values⁵ by 90%.

Temperature and illumination enhance the enrichment in general by a factor of about 2, with *Myriogloea* and *Cystoseira* species, the light illumination has a profound influence on the iodine enrichment as can be seen from Table II. This may be attributed to a direct photo-increase in the rate of biological processes taking place under these conditions.

TABLE II

Enrichment of iodine-131 and light illumination in selected marine algal species

Algal species	Enrichment factor, K _{light} illumination (lux), 1 hr. sunlight			
	10,000	20,000	30,000	40,000
1. <i>Aspergopsis</i> sp. ..	253	284	318	330
2. <i>Myriogloea</i> sci. ..	270	335	395	462
3. <i>Cystoseira</i> ind. ..	215	279	345	387
4. <i>Cladophora</i> monu.	180	234	285	342
5. <i>Sargassum</i> Johns	90	122	143	159

It appears from Table II that iodine enrichment from sea-water using *Cystoseira* ind. (or seasonally available *Myriogloea* sp.) species which are available throughout the year can be profitably brought about under artificial conditions by varying the light illumination and environment, thereby enhancing the rate of biological processes in the system.

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PRESENCE OF A CARTILAGINOUS SUPPORT IN THE HEART OF *PTYAS MUCOSUS* (LINN.)

A CARTILAGINOUS support in the heart of chelonians, lacertilians and crocodilians is reported to be frequently present,² but there are few such reports of the presence of a cartilaginous support in the ophidian heart. However, such a cartilaginous support in the heart of *Typhlops braminus*, in which it is small, rod-like, and lies in the vicinity of the pocket valves of the aortic trunks, has been reported.¹

While investigating the problem of blood circulation in reptiles, I found the presence of a fairly large hyaline cartilage (Fig. 1), in

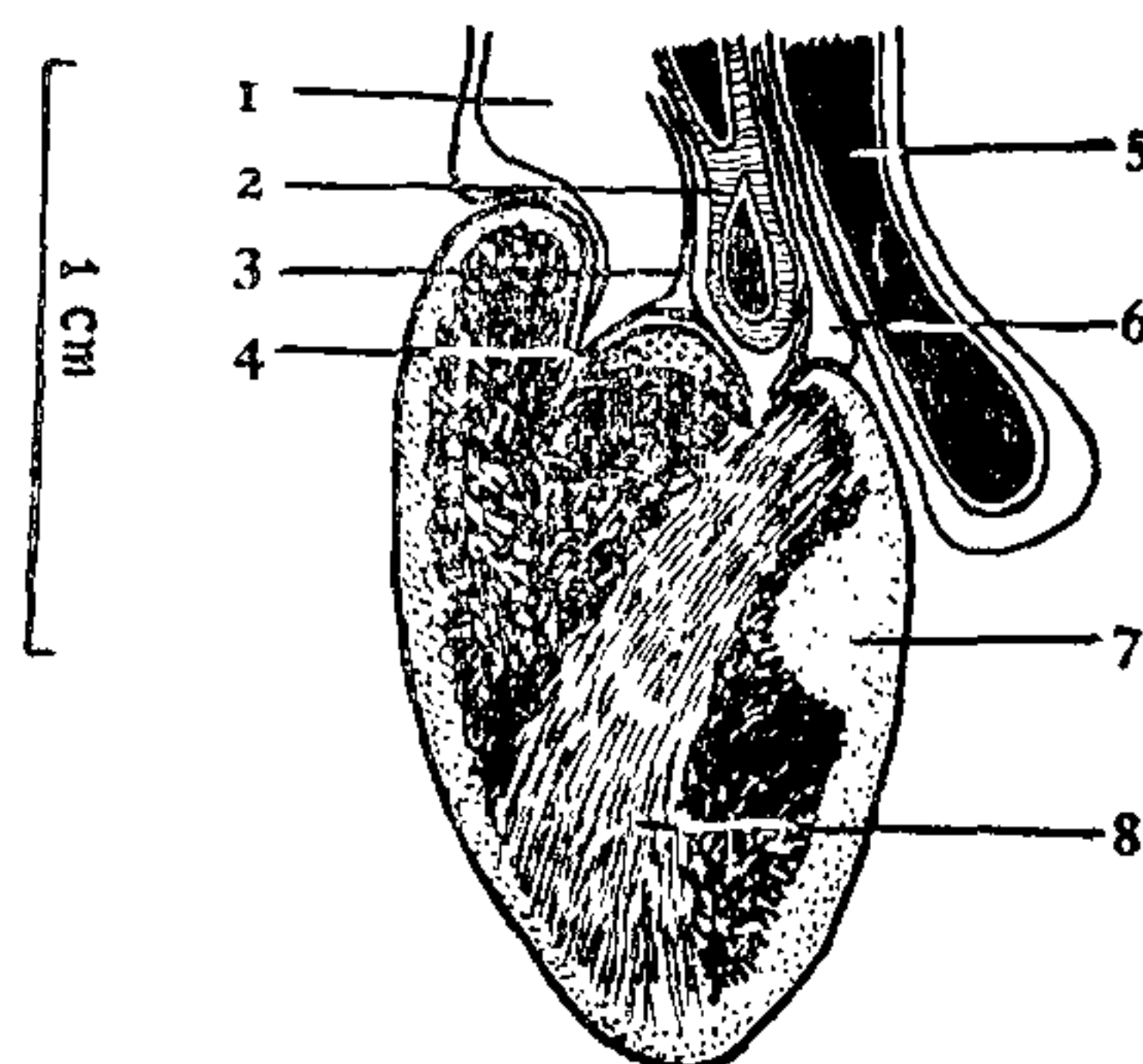


FIG. 1. Dissection of heart of *Ptyas mucosus* from the dorsal side. 1. Left auricle; 2. Systemico-carotid arch; 3. Interauricular septum; 4. Cartilage; 5. Right pre-caval and the post-caval; 6. Right auricle; 7. Interventricular septum; 8. The vertical septum.

the heart of *Ptyas mucosus*. This cartilaginous support is dome-shaped and is uniformly thick around its margin but somewhat thinner centrally. It is located dorsal to the anterior edge of the interventricular septum and slightly to the right of the right systemico-carotid arch opening. It is placed more or

less juxtaposed to the valve bearing end of the inter-auricular septum. The concavity of the cartilage faces cavum dorsale of the ventricular cavity.

Such a shape of the cartilaginous support in a reptilian heart appears singular, being neither unifocal as in *Chelonia* or in *Lacertilia* nor multifocal as in *Crocodylia*.²

A satisfactory functional interpretation of such a cartilage becomes rather difficult. However, disposed as it is in *Ptyas mucosus*, the cartilage appears to impart some degree of rigidity to the valve-bearing end of the inter-auricular septum, preventing it from collapsing during the ventricular systole.

Apart from imparting a regional support to the part of the heart where it lies, there does not appear to be any other vital function assignable to it.

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ON *TRICHOMONAS GALLINAE* (RIVOLTA)—(PROTOZOA: MASTIGOPHORA) FROM THE INDIAN PARIAH KITE

THE parasitic flagellate *Trichomonas gallinae* (Rivolta) Stabler, commonly infesting the upper digestive tract of avian hosts, has been reported from about twenty species of birds (Stabler¹; Zwart⁵) since its discovery by Rivolta in Italy. Mohteda² recorded this parasite from a fowl in Hyderabad Deccan (Andhra Pradesh) India. The object of this note is to place on record this species collected by the author from a new avian host *Milvus migrans govinda* Sykes, commonly known as the Indian Pariah Kite, and to discuss the variations observed in the form occurring in this host.

An examination of the saline smears from the buccal and the anterior region of the oesophagus of a living bird collected from Calcutta City (West Bengal) in November, 1959 revealed the presence of minute pear-shaped bodies jumping about in field of observation. Subsequently, two more birds were collected and examined, but they failed to show any

infestation by these parasites. The following observations are mainly based on the study of the expanded specimens fixed in Schaudinn's fluid and stained in Heidenhain's iron-haematoxylin. All the measurements given here were taken with the aid of a calibrated ocular micrometer.

Body pear-shaped; length 9 to 12.5 μ and breadth 4-8 μ , having an average size of 11.5 by 6.5 μ . In the majority of specimens one or two vacuoles are located at the anterior half by the side of the nucleus. The blepharoplast is at the anterior end from which originate four flagella of equal length ranging from 9-10.5 μ . The undulating membrane is very delicate and extends only upto the middle of the body. The membranellar filament stops short at the tip of the membrane. The costa is slender. The axostyle is thin, hollow and projects slightly beyond the body. There is no chromatin at the point of its emergence from the body.

The nucleus is oval-shaped, measuring 4.5 by 2.5 μ , has a central endosome and is located at the anterior third of the body. The parabasal is an elongated 's'-shaped body and extends a little beyond the nucleus. A long parabasal fibril (very faintly seen in stained specimens) extends from the parabasal body. The chromatin granules are very few in number.

Taxonomic position.—Class: Mastigophora; Sub-class: Zoomastigia; Order: Trichomonadida; Family: Trichomonadidae Wenyon; Genus: *Trichomonas* Donne' (Classification followed here is based on Kudo¹).

The size and the structural details of the specimens examined by the author closely resemble and fall within the range of forms known from the other species of avian hosts, especially the ones reported from the American Golden Eagle *Agula chrysaetos canadensis* (Linnaeus) by Stabler. The notable characters of the forms occurring in the pariah kite are the delicate nature of its undulating membrane presence of vacuoles in the anterior region, presence of a few chromatin granules and the extended parabasal body beyond the nucleus.

This is the first record of this species from the Indian Pariah Kite, *Milvus migrans govinda* Sykes. As no published account has so far been come across in literature of this parasite in this avian host, the author has made a fresh