

## ANCYLODISCOIDINS (MONogenea: DACTYLOGYRIDAE) FROM TWO FRESHWATER FISH SPECIES OF PENINSULAR MALAYSIA\*

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**Abstract.** A new species of ancylodiscoidin, *Bifurcohaptor baungi* sp. n. from *Mystus nemurus* (Valenciennes) (Bagridae) is described. *Bychowskyella tchangi* Gussev, 1976 and *Quadriacanthus kobiensis* Ha Ky, 1968 are recorded for the first time in Peninsular Malaysia from *Clarias batrachus* (Linnaeus) (Clariidae).

This paper is part of results of our studies on parasites of freshwater fishes in the Malaysian Peninsula. The three ancylodiscoidin species constitute the first records of members of the genera *Bifurcohaptor*, *Bychowskyella* and *Quadriacanthus* of freshwater fish in the Peninsula.

## MATERIAL AND METHODS

The hosts (*Mystus nemurus* and *Clarias batrachus*) for the present study were obtained from two localities, Bukit Merah Reservoir, Perak and Tasek Bera, Pahang. The monogeneans were extracted alive from freshly removed gills, fixed and mounted on glass slides in ammonium-picrate glycerine or glycerine-jelly according to the techniques of Gussev (pers. comm.). Measurements (according to Gussev 1976) are given in micrometers; the holotype's measurement is first, followed by the minima-maxima measurements of the paratypes in parentheses. Drawings were made with the aid of a Leitz drawing device. Material of *B. tchangi* and *Q. kobiensis* was compared with the type specimens of these two species during a visit of the senior author of the Zoological Institute, Academy of Sciences of the USSR, Leningrad.

***Bifurcohaptor baungi* sp. n.**

Fig. 1

Host: *Mystus nemurus* (Valenciennes)

Localities: Tasek Bera, Pahang (type locality) and Bukit Merah Reservoir, Perak

Specimens studied: 6

Type specimens: Holotype and paratypes are in the authors' collections.

Monogeneans of size 1 909 (1 440–2 080) × 291 (160–320) with four eyespots (anterior pair is smaller), 14 very small marginal hooks 26 (25–29) long. Dorsal anchors enormous, 315 (291–340) long with knobbed basal part and short recurring point. Patches found on the upper-outer region of the basal part closely adhering to it.

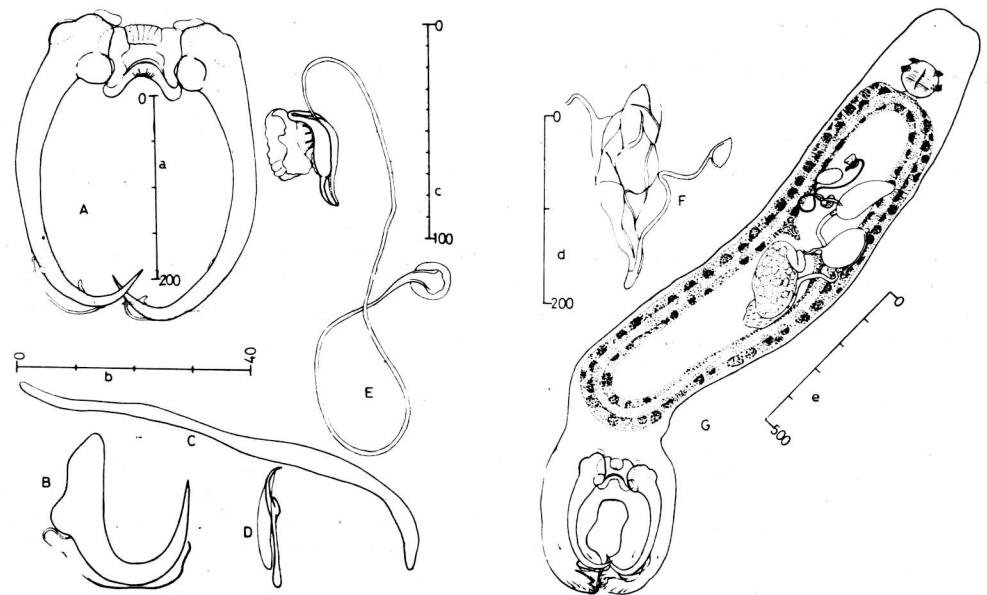
Ventral anchors 28 (25–30) long, inner root 13 (7–13) long and outer root stumpy. Dorsal bar is almost square, while ventral bar is rodlike, paired and unconnected.

Copulatory organ consists of a relatively long tube and an accessory piece which is made up of two parts, a solid part and a grooved piece. Opening into the initial part of the tube are two prostate glands and a duct from an elongated "blind" seminal vesicle which is connected by the vas deferens to an elongated testis.

Vaginal apparatus is a sclerotized funnel connected by a tube to a large pear-shaped seminal receptacle (which in some specimens are collapsed) via a sclerotized piece. A tube (which is initially well defined) connects the seminal receptacle to the ovary.

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**Differential diagnosis:** Like all the previous *Bifurcohaptor* (*B. indicus* Jain, 1958; *B. giganticus* Jain, 1958; *B. lanki* Gussev, 1976; *B. son* (Tripathi, 1959) Kulkarni, 1969; *B. vishwanathai* Agrawal et Kumar, 1977; *B. gorakhnathai* Kumar et Agrawal, 1982) the present species possesses similar type of anchors and bars, marginal hooks and vaginal apparatus differs in detailed structures.



**Fig. 1.** *Bifurcohaptor baungi* sp. n. A. Large dorsal anchors, a pair of small patches and dorsal bar, B. ventral anchor, C. ventral bar (single), D. marginal hook, E. copulatory organ, F. vaginal armament with oval seminal receptacle (which in this figure is collapsed), G. ventral view of whole specimen. (All scales in  $\mu\text{m}$ . Scale a for 1A, scale b for 1B, 1C and 1D, scale c for 1E, scale d for 1F and scale e for 1G).

The copulatory organ of the present species is different from previously described species in having longer copulatory tube and in the structure of accessory piece. The dorsal anchors of the present species are larger than all the previous *Bifurcohaptor* species except that of *B. giganticus* and *B. son*.

The present species is named *Bifurcohaptor baungi* sp. n. after the local name of the host, "Baung".

#### ***Bychowskyella tchangi* Gussev, 1976**

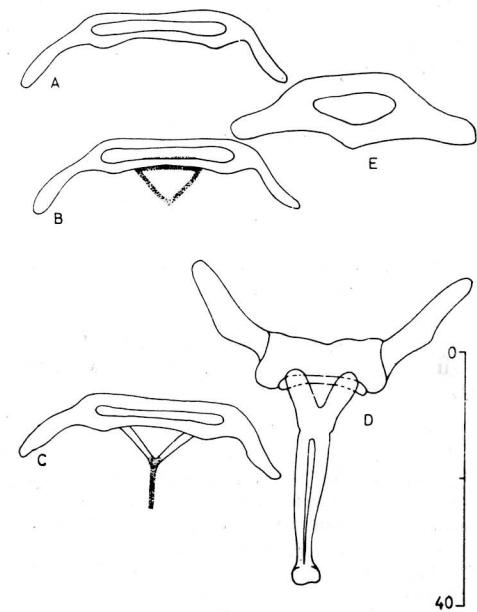
Host: *Clarias batrachus* (Linnaeus)  
Locality: Bukit Merah Reservoir, Perak  
Specimens studied: 10

The sclerites (the hard parts of the opisthaptor, vaginal armament and copulatory organ) of the present specimens are slightly larger and the dorsal bar is fenestrated. The type specimens of *B. tchangi* (from India) also possess similar type of dorsal bar.

#### ***Quadriacanthus kobiensis* Ha Ky, 1968**

Host: *Clarias batrachus* (L.)  
Locality: Bukit Merah Reservoir, Perak  
Specimens studied: 10 adult forms and 10 developing forms.

Together with the adult *Q. kobiensis* several developing forms were also collected. Different stages of development of the dorsal bar could be determined (Fig. 2A-D). At one stage of its development, the dorsal bar of this species resembles the dorsal bar of the adult *B. tchangi* (cf. Fig. 2A and 2E), however, as development progresses the typical shape is slowly assumed (Fig. 2B-D). This indicates that *Bychowskyella* and *Quadriacanthus* could be closely related. This agrees with the observation of Paperna (1979) that these two genera are related, based on the similarity between the large patches in *Quadriacanthus claridias* Paperna, 1961 and those found in *Bychowskyella* species.



**Fig. 2.** Dorsal bars (developing forms: A to C; mature form: D) of *Quadriacanthus kobiensis* Ha Ky, 1968 and *Bychowskyella tchangi* Gussev, 1976 (E) (Scale in  $\mu\text{m}$ ).

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#### ANCYLODISCOIDINAE (MONOGENEA: DACTYLOGYRIDAE) ОТ ДВУХ ПРЕСНОВОДНЫХ РЫБ ИЗ ПОЛУОСТРОВНОЙ МАЛАЙЗИИ

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**Резюме.** Описан новый вид ацилодискоидины *Bifurcohaptor baungi* sp. n. от *Mystus nemurus* (Valenciennes) (Bagridae). *Bychowskyella tchangi* Gussev, 1976 и *Quadriacanthus kobiensis* Ha Ky, 1968 впервые зарегистрированы в полуостровной Малайзии от *Clarias batrachus* (Linnaeus) (Clariidae).

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E. P. Kovaleva, A. Ya. Lysenko, D. P. Nikitin: *Urbanizatsiya i problemy epidemiologii. (Urbanization and problems of epidemiology)*. Publ. House Meditsina, Moskva 1982, 174 pp., 7 Tables. Price 0.95 R.

Urbanization, a many-sided process of the concentration of population as well as industry in towns, is a characteristic feature of the present epoch. It is accompanied by great changes in both the demographic and social structure of society, reflecting not only in the life style of humans and the influence on environment, but also in the sphere of human health. These changes become considerably manifest and pose serious problems to the public health service both in the economically developed and the developing countries, although their impact is different under different social systems. Based on the authors' own experience and on published data the present volume is an attempt to analyze the influence of urbanization processes on some most important problems of epidemiology.

The first chapter of the book discusses general aspects of the relationships between the scientific-technical revolution and the urbanization, and their influence on the spectrum of diseases, morbidity and mortality. The second chapter describes the influence of urbanization on the driving-forces of epidemic process, on the mechanism of transmission, the susceptibility of macroorganism and the properties of the causative agent. The third chapter analyzes the trends in morbidity under conditions of urbanization, its dynamics, quantitative as well as qualitative characteristics of the epidemic

process and some specific types of infections (mixed infections, infections caused by sea products). The fourth chapter covers nosocomial infections, the causes of their increasing number, the ethiological structure of causative agents and the properties of their strains, the sources of infection, routes of transmission and prophylactic measures. The last two chapters are of special interest to the parasitologist. The fifth chapter deals with the impact of urbanization on the epidemiology of transmissible and parasitic diseases, analyzes the consequences of transformation of original geobiocenoses for the vectors and the diseases transmitted by them, for the intestinal parasitoses and zoonoses. The final chapter is devoted to the problems of the introduction of infections from foreign countries. The references include only citations from selected published sources.

The materials compiled in the book have been comprehensively and logically arranged and suitable facts have been chosen for conclusions. The book proves that the problems of the impact of urbanization on the epidemic process in its diverse aspects are very urgent. The appearance of this publication is therefore to be considered useful and stimulative to the theory and practice as well.

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