

**Two Species of *Tetraonchus* (Monogenea : Tetraonchidae)
in Mongolia with a Proposal of a New Species,
T. ergensi n. sp.**

KAZUO OGAWA AND SYUZO EGUSA

*Department of Fisheries, Faculty of Agriculture,
the University of Tokyo, Tokyo, Japan*

(Received for publication; September 20, 1978)

Eighteen species have been reported in the genus *Tetraonchus*, which includes two unidentified species reported by Ergens (1971); *T. sp. 1* and *T. sp. 2*. A chance was given to us by Dr. Ergens to examine several specimens of *T. sp. 1*. Ergens (1971) presented figures of the hard parts and some comments on the systematical problem of the species, but did not refer to the measurements of the hard parts, which were indispensable for describing the species. Two specimens of *T. gvosdevi* (Spassky et Roytman, 1960), a closely related species to *T. sp. 1*, were also given by him. In the present study, descriptions are made of these two species, and *T. ergensi* n. sp. is proposed for *T. sp. 1*.

Materials and methods

Both *T. ergensi* n. sp. and *T. gvosdevi* were collected from the gills of *Brachymystax lenok* (Salmonidae) in Mongolia in 1966, fixed in ammonium picrate-glycerin, dehydrated and mounted in Canada balsam for permanent preparations. Four specimens of *T. ergensi* n. sp. were examined, in one of which the hindbody had been lost. Two specimens of *T. gvosdevi* were also redescribed for a comparative study. Terms of various body parts of *Tetraonchus* are followed by the mode in a previous paper (Ogawa and Egusa, 1978). Drawings were made with the aid of a camera lucida.

Results

Tetraonchus gvosdevi (Spassky et Roytman, 1960)

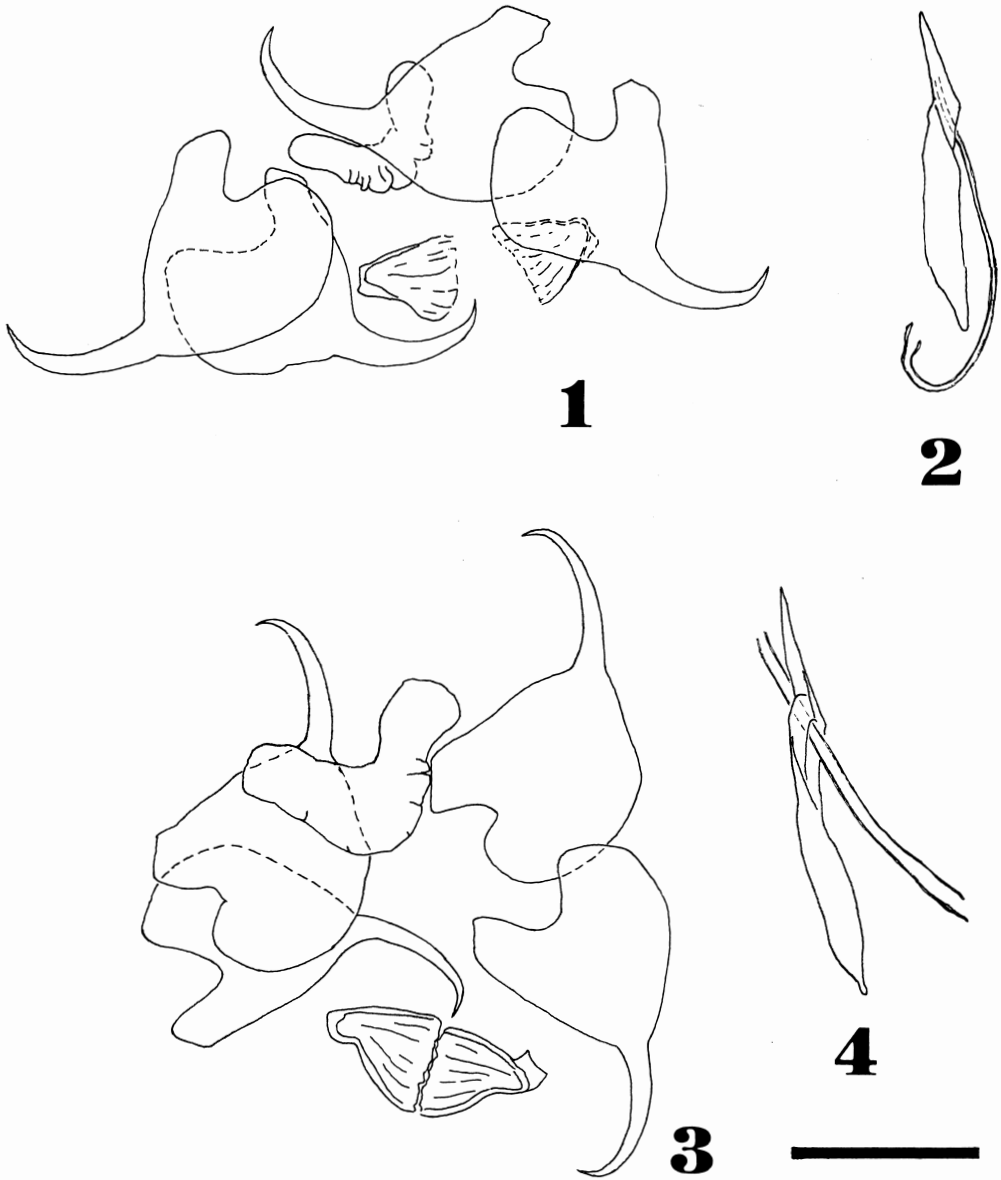
Host: *Brachymystax lenok*.

Habitat: Gill.

Locality and date: River Onon, Mongolia, Sep. 1966.

Specimens studied: Two (deposited in the Meguro Parasitological Museum, M. P. M. Coll. No. 19262 and in the authors' collection).

Redescription: The hard parts, the key of identifying the *Tetraonchus* species are redescribed. The opisthohaptoral armament for attaching itself to the host gill comprises a pair of ventral and dorsal anchors, a bar and a pair of "fan-shaped" bars (Fig. 1). The ventral anchor is 88-93 μm , mean 91 μm long. Its inner basal part (55-60 μm long) is much the same in length as its outer one (53-62 μm long). The point is 36-39 μm long with its basal width being 11-12 μm . The maximum width is 53-55 μm . The dorsal anchor is similar in shape to the ventral one, but smaller in size, being 82-87 μm , mean 85 μm long. Its inner basal part (48-54 μm long) is a little shorter than its outer one (51-55 μm long). The point is 33-35 μm long with its basal width being 11 μm . The maximum width is 55-60 μm . The bar is V-shaped, measuring 45-52 $\mu\text{m} \times$ 12-14 μm . Each "fan-shaped" bar is situated a little distant from its fellow, its



Explanation of Figures

Figs. 1-2 *Tetraonchus gvosdevi* (Spassky et Roytman, 1960). 1. Anchor complexes, dorsal view; 2. Copulatory organ. Figs. 3-4 *T. ergensi* n. sp. 3. Anchor complexes of holotype, ventral view; 4. Copulatory organ of holotype. (Scale: 50 μm)

size being 28-31 μm \times 23-25 μm . The marginal hooks are lost except their domus, which remain at their original sites.

The copulatory organ consists of the cirrus and its accessory piece (Fig. 2). The

cirrus is a long and narrow tube (1.5 μm wide) which is widened and strongly curved at the base, where it measures 7 μm wide. The accessory piece (83-85 μm long) is pointed proximally and bears a hole at the

middle where the cirrus passes.

***Tetraonchus ergensi* n. sp.**

Host: *Brachymystax lenok*.

Habitat: Gill.

Localities and dates: River Onon, Mongolia, Sep. 1966; River Tul, Mongolia, Apr. 1966.

Specimens studied: Four. (The holotype is deposited in the Meguro Parasitological Museum, M. P. M. Coll. No. 19263, and the paratypes in the Collection of the Institute of Parasitology, Czechoslovak Academy of Sciences and in the authors' collection.)

Description: The anchor complexes are shown in Fig. 3. The ventral anchor is 85–95 μm , mean 90 μm long. The inner basal part (48–54 μm long) is 3–6 μm shorter than its outer one (51–60 μm long). The point is 37–40 μm long with its basal width being 8–9 μm . The maximum width is 52–57 μm . The dorsal anchor is quite similar in shape to the ventral anchor, but a little smaller in size, measuring 80–90 μm , mean 85 μm long. Its inner and outer basal parts are almost the same in length, being 47–55 μm and 49–56 μm long, respectively. The point is 34–37 μm long with its basal width being 7–9 μm . The maximum width is 46–56 μm . The bar is V-shaped, 56–62 $\mu\text{m} \times$ 14–23 μm in size. The "fan-shaped" bars are situated very closely each other, each pair measuring 24–28 $\mu\text{m} \times$ 24–29 μm in size. The marginal hooks are absent, and their domus are preserved at their original sites.

The cirrus (78–95 μm long) is a straight or slightly arched tube, being almost uniform in width (3 μm wide) over all its length, except at the base, where, it is slightly widened (4–5 μm wide at the base). Its accessory piece is 88–110 μm , mean 100 μm long, and always longer than the cirrus (Fig. 4).

The internal morphology and other structures were not confirmed.

Discussion

The shape and size of the hard parts of

the present specimens of *T. gvosdevi* show little differences from those of this species reported so far (Ergens, 1971; Gussev *et al.*, 1962), which may lie within specific variations.

T. ergensi n. sp. is similar to *T. awakurai* Ogawa et Egusa, 1978 in the shape of the opisthohaptoral hard parts and copulatory organ, and to *T. gvosdevi* in the shape and size of the opisthohaptoral hard parts. *T. ergensi* may be distinguished from *T. awakurai* by the following points. 1) Various hard parts, especially the cirrus accessory in *T. ergensi* are considerably larger in size than the corresponding parts in *T. awakurai*. For example, the cirrus accessory is 88–110 μm , mean 100 μm long in this species, but only 69–76 μm , mean 73 μm long in *T. awakurai*. 2) In spite of no marked differences in the shape of the hard parts, the cirrus is slightly different in shape between the two species. The cirrus in this species is straight and almost uniform in width over all its length, but slightly widened at the base, while in the latter species it is gradually widened toward the base, but narrowed and slightly curved at the basal end. 3) The inner basal part of the ventral anchor is to some degree smaller in size than the outer one in this species, but almost the same in size as the outer one in the latter species, although the anchors of *Tetraonchus* may be variable in shape (Ogawa and Egusa, 1978). *T. ergensi* may also be distinguished from *T. gvosdevi* by the following points. 1) In *T. gvosdevi*, the long and narrow cirrus is strongly curved at the base, while in this species, the shorter and wider cirrus is almost straight. 2) In *T. gvosdevi*, the points of the ventral and dorsal anchors are somewhat stout, namely the bases of their points are considerably wider than those of this species. 3) In *T. gvosdevi*, the "fan-shaped" bars are situated at a short distance away from each other, but in this species, they are faced so closely as to come in contact with each other.

The specific name, *ergensi*, is dedicated to Dr. R. Ergens, Institute of Parasitology,

Czechoslovak Academy of Sciences, who first found this species.

Summary

Description is given of an unidentified monogenean *Tetraonchus* sp. 1 of Ergens (1971), parasitizing the gills of *Brachymystax lenok* (Salmonidae) in Mongolia. *T. gvosdevi* (Spassky et Roytman, 1960), a similar species to *T.* sp. 1, is also redescribed for a comparative study. The shape and size of the hard parts of the present specimens of *T. gvosdevi* show little differences from those described so far. *T.* sp. 1. resembles *T. awakurai* Ogawa et Egusa, 1978 and *T. gvosdevi*, but may be distinguished from the former species by the larger size of the hard parts and the shape of the cirrus, and from the latter species by the shape of the cirrus and more slender anchor points. *T. ergensi* n. sp. is proposed for *T.* sp. 1 of Ergens (1971) in this paper.

Acknowledgement

The present authors wish to express their sincere thanks to Dr. R. Ergens, Institute of Parasitology, Czechoslovak Academy of Sciences, Czechoslovakia for giving them a chance to examine *Tetraonchus* specimens in Mongolia and for his critical reading of this manuscript.

References

- 1) Ergens, R. (1971): The species of the genus *Tetraonchus* Diesing, 1858 (Monogenoidea) recovered from fishes of Mongolia. *Folia Parasit.*, 18, 139-148.
- 2) Gussev, A. V., Strelkov, Yu, A. and Nagibina, L. F. (1962): Class Monogenoidea (Beneden) Bykhovskii, 1937. p. 240-445 in "Key to Parasites of Freshwater Fish of the U. S. S. R." (compiled by I. E. Bykhovskaya-Pavlovskaya *et al.*) Israel Program for Scientific Translation, Jerusalem, 1964, 919 pp.
- 3) Ogawa, K. and Egusa, S. (1978): Two new species of the genus *Tetraonchus* (Monogenea: Tetraonchidae) from cultured *Oncorhynchus masou*. *Bull. Japan. Soc. Sci. Fish.*, 44, 305-312.

モンゴル産の2種の *Tetraonchus* (Monogenea)

小川和夫 江草周三

(東京大学農学部水産学科)

既に報告されている *Tetraonchus* (Monogenea) のなかで、現在まで未同定のままであった Ergens (1971) の *T.* sp. 1 を記載した。また、これと近縁の *T. gvosdevi* (Spassky et Roytman, 1960) も比較のため、あわせて再記載した。これらは、いずれもモンゴル産サケ科魚 *Brachymystax lenok* の鰓に寄生していたものである。*T. gvosdevi* は従来の記載とほぼ一致した。*T.*

sp. 1 は *T. awakurai* Ogawa et Egusa, 1978 と *T. gvosdevi* に似るが、前者とは hard parts (後固着器及び交接着器) が大きい点と陰茎の形が異なる点で、後者とは陰茎の形が異なる点と後固着器の腹鉤及び背鉤の先端部がより細い点で区別される。従って、Ergens (1971) の *T.* sp. 1 を新種と考え、*T. ergensi* n. sp. と命名した。