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Short Communications

PARASITIC COPEPODS OF SOME FISH SPECIES FROM MONGOLIA*)

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Abstract. A systematic evaluation is given of parasitic copepods collected from April till September 1966 in Mongolia. The material examined is deposited in the Institute of Parasitology, Czechoslovak Academy of Sciences in Prague and in the Biological Institute of the Mongolian Academy of Sciences in Ulan Bator.

MATERIAL AND METHODS

We examined 354 specimens of fishes from the localities: Water basin of the River Selega: 1. River Tul near Ulan Bator; 2. River Tul near the settlement Songino; 3. Lake Tirkhin tsagan and its tributaries; 4. Lake Khubsugul; 5. Lake Ugiy nur;
Water basin of the River Yenisei: 6. Lake Dod tsagan and its tributories;
Water basin of the River Amur: 7. Lake Buyr nur; 8. River Khalkhingol; 9. River Onon.

Of the specimens examined 45 were found to be parasitized by copepods. The parasites were fixed in 4% formalin; permanent mounts of their individual determining signs were made with ammonium-picrate and glycerine.

RESULTS

We found a total of 9 species of parasitic copepods belonging to 5 genera. A list of these species, completed in some instances with brief descriptions and drawings is given in the following text:

GENUS *ERGASILUS* NORDMANN, 1832

1. *Ergasilus sieboldi* Nordmann, 1832 — Fig. 1 A

Host: *Esox lucius* L.; location: gills; locality: Lake Ugiy nur; intensity of infection: 2 specimens.

These specimens were of the same size and shape as those described by NORDMANN (1832).

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2. *Ergasilus scalaris* Markevich, 1940 Fig. 1 B

Host: *Parasilurus asotus* L.; location: gills; locality: Lake Buyr nur; intensity of infection: 11 specimens.

These parasites are in complete agreement with the original description by Markevich (1940) which we are completing with several additional data: overall length of body 1.1—1.5 mm, length of first and second segment of 0.59—0.60 mm,

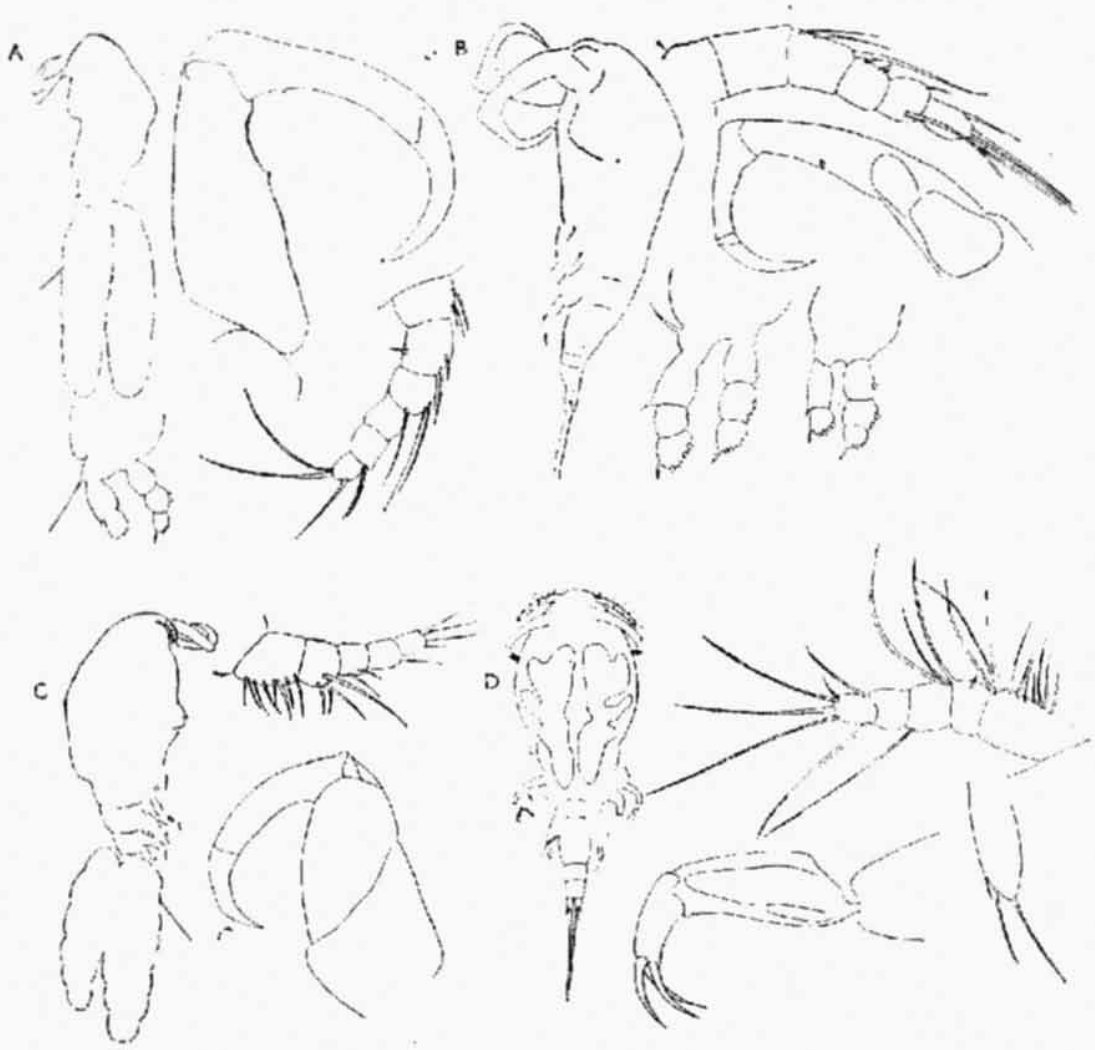

Fig. 1. A — *Ergasilus sieboldi* Nordmann, 1832 (overall view of body, antennae II, antennae I, swimming feet of fourth pair). B — *Ergasilus scalaris* Markevich, 1940 (overall view, antennae I, antennae II, swimming feet of third and fourth pair). C — *Ergasilus tumidus* Markevich, 1940 (overall view, antennae II). D — *Paraergasilus brevidigitus* Yin, 1954 (overall view, antennae I, antennae II, swimming feet of fifth pair).

length of 3rd segment of a_2 0.24—0.25 mm, length of fourth segment 0.19—0.20 mm. Maximum width of a_2 0.11 mm. Antenullae (a_1) clearly 6-segmented, length 0.24 to 0.25 mm, i.e. approximately 4 times smaller than a_2.

3. *Ergasilus tumidus* Markevich, 1940 Fig. 1 C

Host: *Acanthorhodeus* sp.; location: gills; locality: Lake Buyr nur, River Khalkhingol; intensity of infection: 1—12 specimens.

Our specimens differ from all specimens of this species described until the present only in the overall length of the body which was 0.54—0.78 mm in our material while MARKEVICH (1940) reported 0.5—0.69 mm. Antennae I 5-segmented, length 0.101—0.104 mm. Length of third and fourth segment of antennae II 0.11 mm.

GENUS *PARAERGASILUS* MARKEVICH, 1937

4. *Paraergasilus brevidigitus* Yin, 1954 Fig. 1 D

Host: *Leuciscus waleckii* Dybowski; location: nostrils; locality: Lake Buyr nur; intensity of infection: 1—4 specimens.

Overall length 0.52—0.68 mm, antennae I clearly 5-segmented, length 0.125 to 0.132 mm, length of spines on the last segment of antennae II 0.042—0.049 mm, length of last segment of antennae II 0.049 mm. Length of cephalic processes 0.107—0.113 mm. Swimming feet V with 3 setae (YIN WEN-YING 1954, erroneously gives 2 setae). *Leuciscus waleckii* is a new host of this species.

GENUS *BASANISTES* NORDMANN, 1832

5. *Basanistes woskoboinikovi* Markevich, 1936

Host: *Hucho taimen* Pallas, *Brachymystax lenok* Pallas; location: internal surface of operculum; locality: River Tul near Ulan Bator, Lake Dod tsagan; intensity of infection: 2—16 specimens.

The shape of our specimens is the same as that described by MARKEVICH (1936). Body length 4.3—5.2 mm, length of egg sacs 3—4.5 mm. *Brachymystax lenok* is a new host of this parasite.

6. *Basanistes briani* Markevich, 1936

Host: *Brachymystax lenok* Pallas; location: inner surface of operculum; locality: River Tul near Ulan Bator, Lake Tirkhin tsagan, Lake Khubsugul, River Onon; intensity of infection: 1—5 specimens.

Our specimens do not differ from the descriptions of this species.

GENUS, *SALMINCOLA* WILSON 1915

7. *Salmincola thymalli baicalensis* Messjatzeff, 1926

Host: *Thymallus arcticus* Pallas; location: gills; locality: Tul near Ulan Bator, Lake Tirkhin tsagan, Lake Dod tsagan, Lake Khubsugul; intensity of infection: 1—21 specimens.

Our description of this species is in accord with that given by MESSATZEFF (1926); body length 2.8—3.3 mm, length of egg sacs 2.6—3.1 mm.

8. *Tracheliastes longicollis* Markevich, 1940

Host: *Pseudaspius leptocephalus* Dybowski: location: fins; locality: Lake Buyr nur; intensity of infection: 1—2 specimens.

Our specimens differed from those described by MARKEVICH (1940) in the following determining features: Length of arms 2.1—2.3 mm, length of cephalothorax 3.9—4.2 mm, length of trunk 3.2—3.6 mm, length of egg sacs 3.2—3.4 mm.

9. *Tracheliastes polycolpus* Nordmann, 1832

Host: *Leuciscus l. baicalensis* Dybowski, *Leuciscus waleckii* Dybowski, *Phoxinus percnurus* Pallas; location: fins; locality: River Tul near Ulan Bator, River Tul near the settlement Songino, River Khalkhingol; intensity of infection: 1—2 specimens.

All our findings are in agreement with the original description of this species by NORDMANN (1832), to which we are adding the results of our measurings. Length of body 5 to 6 mm, length of arms 2.3—2.6 mm, length of cephalothorax 2.1 to 2.3 mm, length of egg sacs 3.9—4.1 mm. *Phoxinus percnurus* is a new host of this parasite.

Our list of parasites is incomplete, because these were collected off the main season of their occurrence. This paper presents, however, the first information on parasitic copepods collected in Mongolia and adds to the knowledge on their zoographical distribution. Some of the copepod species were found in new hosts.

REFERENCES

BERG L. S., (Freshwater fishes of the U.S.S.R. and neighbouring countries). Publ. House of the AN SSSR. Moscow—Leningrad, 1949. (In Russian.)

BYKHOVSKY B. E. et al., (Key to parasites of freshwater fish of the U.S.S.R.). Publ. House of the AN SSSR, Moscow—Leningrad, 1962. (In Russian.)

ERGENS R., DULMAA A., Monogenoidea from the genus *Phoxinus* (Cyprinidae) from Mongolia. Folia parasit. (Praha) 14: 321—333, 1967.

MARKEVICH A. P., II genere *Basanistes* Nordmann, 1832. Atti Soc. Ital. Sc. Nat. Milano 75: 227—242, 1936.

—, (New species of parasitic copepods.) Dopovidi AN U.S.S.R. 11: 11—21, 1940. (In Russian.)

—, (Parasitic copepods of fishes of the U.S.S.R.). Publ. House of the AN Ukrain. S.S.R., Kiev, 1956. (In Russian.)

MESSJATZEFF L., Parasitische Copepoden aus dem Baikalsee. Arch. Naturgesch. Abt. 92: 120—134, 1926.

NORDMANN A., Mikrographische Beiträge zur Naturgeschichte der wirbellosen Tiere. Heft 11, Berlin 1932, 150 S., 10 Taf.

YIN WEN-YING, *Paraergasilus*, a genus of parasitic copepods new to China, with two species from pond-fishes. Acta Zool. Sinica 6: 23—32, 1954.

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