

Jadwiga WIERZBICKA, Danuta GÓRA, Grażyna DUBOWSKA

Parasitology

PARASITES OF *ACERINA CERNUA* (L.)  
IN THE SZCZECIN FIRTH

PASOŻYTY JAZGARZA – *ACERINA CERNUA* (L.)  
ZALEWU SZCZECIŃSKIEGO

Institute of Ichthyology,  
Academy of Agriculture,  
Szczecin

Detailed examinations made on 124 *Acerina cernua* individuals revealed the presence of 23 parasitic species representing *Protozoa*, *Monogenea*, *Cestoda*, *Trematoda*, *Nematoda*, *Acanthocephala*, and *Crustacea*. The extent of invasion and location of parasites are described. Among the parasites found, 4 species were new for the Polish fauna, while 1 species has not been recorded so far in *A. cernua*.

INTRODUCTION

The *Acerina cernua* parasitofauna has been studied by many workers. In Czechoslovakia, the parasites of the species are considered by Vojtek (1959) and others. Molnár (1966) described a seasonal infestation of *A. cernua* in the Lake Balaton. Šulman and Černyševa (1969) carried out their studies in the Lake Seliger (USSR), while Priemer (1979) described intestinal parasites of *A. cernua* occurring in the vicinity of Berlin.

In Poland, the works dealing with the *A. cernua* parasitofauna have been most often

based on a low number of fish individuals. The first data were obtained from the Vistula Lagoon and Masurian Lake District (Wegener, 1909). Subsequently, Milicer (1938) examined 4 individuals from the Lake Wigry and found 4 parasitic species. When examining 20 individuals from the Lake Tajty, Kozicka (1953) revealed the presence of 9 species of *Protozoa*, *Cestoda*, *Trematoda*, and *Acanthocephala*. Later on, the same author studied 23 *A. cernua* individuals to find 3 metacercariae species (Kozicka, 1958) and 4 species of *Trematoda*, *Nematoda*, and *Acanthocephala* (Kozicka, 1959). In their report of the Lake Wdzydze fish health, Grabda et al. (1961) listed 10 parasitic species of various taxa in 36 *A. cernua* individuals examined. On the other hand, Grabda J. (1961), when studying 26 fish individuals from the stream of Trzebiecha (a tributary of a lake) found 5 species of parasites. Parasites of *A. cernua* from the Vistula off Warsaw are mentioned by Dąbrowska (1970).

More detailed works on the *A. cernua* parasitofauna in Poland involve some taxa only. The *Monogenea* trematodes in the Vistula were described by Prost (1957); protozoans in the Szczecin Firth *A. cernua* were worked out by Pilecka-Rapacz (1980). Wierzbicka and Wierzbicki (1973) found the presence of metacercariae *Apophallus donicus* (Skrjabin et Lindtrop, 1919) in the area. Earlier, Kozikowska (1957) recorded the *Ergasilus sieboldii* Nordman, 1832 crustaceans in the Szczecin Firth.

The studies presented were aimed at obtaining a detailed knowledge on the Szczecin Firth (*A. cernua* parasitofauna, all taxa being taken into account. The literature referred to shows that, except for the *Protozoa*, *Apophallus donicus* metacercariae, and *Ergasilus sieboldii* crustaceans, the parasites of this host have not been studied in the area.

## MATERIALS AND METHODS

The materials for parasitologic studies were caught within Sept. 5 – Nov. 27, 1980. A total of 124 *A. cernua* individuals; weighing 5–50 g and measuring 8.5/10.9 – 13.6/15.9 cm (l.c./l.t.) were examined. The bulk of the materials was obtained at the Stołczyn Fishing Station, one sample being taken on Sept. 5 at the Kamień Pomorski Fishing Station.

Fresh fishes were dissected, the following organs being examined: skin, fins, gills, muscles, swimming bladder, heart, liver, kidney, urinary bladder, and intestine. Gill and skin scraps were taken from each individual and examined under a microscope. Muscles were removed from the dorsal and caudal sections of the body. Intestines were studied using decantation. The parasites found were preserved in 75% ethyl alcohol. Some of the parasites, mostly metacercariae and protozoans, were identified live. The fixed parasites were stained in alum carmine, dehydrated in 50–100% ethyl alcohol, and placed in xylene. The specimens were mounted in Canada balsam.

## RESULTS

A total of 124 *A. cernua* individuals were examined, none being parasite-free. 23 parasitic species belonging to 7 taxa (*Protozoa*, *Monogenea*, *Cestoda*, *Trematoda*, *Nematoda*, *Acanthocephala*, and *Crustacea*) were found.

*PROTOZOA*\**Glugea acerinae* Jirovec, 1930

The species was studied in detail in 33 fish individuals, 9.1% of the fish examined being infested. Numerous to mass occurring whitish, very minute cysts were observed in the intestinal wall. The cyst length ranged within 50–320  $\mu\text{m}$ . Spores were oval, their length and width ranging within 3.8–4.6  $\mu\text{m}$  and 1.6–2.4  $\mu\text{m}$ , respectively; the apical filaments measured 52–90  $\mu\text{m}$ .

*Myxobolus magnus* Awerinzew, 1913

One of the more common *A. cernua* parasites in the area. Invasion incidence of 45.2%; invasion intensity ranging from 1 to about 40 cysts in a fish. The parasites were located in the eye hyaline body and iris. The cysts were white and measured 0.5–3 mm. Spore dimensions: 10–11.2  $\mu\text{m}$  length; 8–8.8  $\mu\text{m}$  width; 7.6–8  $\mu\text{m}$  thickness; 4–5.2  $\mu\text{m}$  apical sac length; 29–33  $\mu\text{m}$  apical filament length.

*Myxobolus muelleri* Bütschli, 1882

An additional examination of the kidney (May-Grünwald and Giemsa stained smears) in 15 fish individuals demonstrated the presence of the parasites in 14 ones (93.3% infestation). Single, more seldom numerous, spores were found in the smears.

*Trichodinella epizootica* (Raabe, 1950)

An external parasite found on gills of 14.5% of the fish individuals examined. Invasion intensity ranged from single to very numerous specimens.

*MONOGENEA**Dactylogyrus amphibothrium* Wagener, 1857

Invasion incidence of 17.7%. Under one covering glass up to 10 specimens occurring on gills were found.

---

\* Owing to the fact that parasitic protozoans of the area were worked out earlier (Pilecka-Rapacz, 1980), some species only are treated here.

### CESTODA

#### *Caryophyllaeus laticeps* (Pallas, 1781) Lühe, 1910

One of the rarest *A. cernua* parasites in the area (0.8% invasion incidence). Only 1 specimen was found in a fish intestine.

#### *Proteocephalus* sp.

A cestode occurring very seldom (0.8% infestation). A single specimen found in a fish intestine. The cestode found was a juvenile form without any strobilisation visible, which made it impossible to identify the species.

### TREMATODA

#### *Diplostomum* sp. (l.)

The metacercariae can be regarded as common *A. cernua* parasites, found in 58.1% of the fishes examined. Invasion intensity was low, a maximum of 8 specimens being found in a fish. Mean invasion intensity of the population of only 1.41 specimens in a fish. The parasites were located in the eye lens.

#### *Tyodelphys clavata* (Nordmann, 1832) Diesig, 1850 (l.)

Matacercariae less common than the ones mentioned above (30.6% infestation). Invasion incidence of the population 0.64. The maximum number of larvae in a fish reached 19. The parasites occurred in the eye hyaline body.

#### *Cotylurus platycephalus* (Creplin, 1825) Szidat, 1928 (l.)

One of the very common parasites of *A. cernua* in the area (89.5% infestation). Encysted metacercariae were found in various internal organs, most often in the heart (74%), most seldom on the swim bladder (9.7%). The metacercariae on other organs were present in 23–27% of the fishes examined. The maximum of 200 larvae was recorded in a fish.

#### *Cotylurus variegatus* (Creplin, 1825) (l.)

A species more common than the preceding one. Invasion incidence 97.6%, invasion intensity ranging from single to more than 200 cysts in a fish. The metacercariae were located most often on the swim bladder (93.5%) and peritoneal membrane (83.8%). More seldom were they observed on the urinary bladder, liver, intestine, and around the heart.

#### *Bucephalus polymorphus* Baer, 1827\* (l.)

Metacercariae of the species proved common as they were found in 68.5% of the fishes examined. The encysted larvae were being found in muscles close to the caudal fin and in

---

\* Baturo (1977) applied to the International Commission of Zoological Nomenclature for a change of the name.

the fin itself; some individuals showed the presence of the parasites on their gills and around the urinary bladder. Additionally, on intestine was found to contain an adult individual of the trematode.

*Apophallus donicus* (Skrjabin et Lindtrop, 1919) Price, 1931 (1.)

Metacercariae of the species were very common, showing the highest invasion incidence (99.2%) among the *A. cernua* parasites encountered. The encysted metacercariae were being found mainly in the caudal fin and on the dorsal side skin. The number of parasites ranged from single to very numerous cysts in a fish.

*Bunodera luciopercae* (Müller, 1776) Lühe, 1909

The trematodes were being found relatively rarely: they occurred in digestive tracts of 9.7% of the fishes examined. Invasion intensity was low (1–5 specimens), too.

*Crepidostomum farionis* (Müller, 1784) Lühe, 1909

One of the more common intestinal parasites of *A. cernua*. Invasion incidence 52.4%, a single fish individual housing up to 17 specimens; mean invasion intensity of the population 1.62.

*Nicolla skrjabini* (Ivanitzky, 1928) Dollfus, 1959

Three trematodes of the species only were found in the intestine of the fishes dissected. Invasion incidence and mean invasion intensity of the population 1.6% and 0.024, respectively.

*Phyllodistomum folium* (Olfers, 1816) Braun, 1899

The trematodes occurred in the urinary bladder of 10.4% of the fish individuals examined; invasion intensity and mean invasion intensity of the population were 5 and 0.18, respectively.

*Phyllodistomum pseudofolium* Nybelin, 1926

The species was recorded in the urinary bladder, more seldom than the previous one. Invasion incidence 5.6%; mean invasion intensity of the population and the highest number of the trematodes in a fish were 0.11 and 6, respectively.

## NEMATODA

*Capillaria petruschewskii* (Schulman, 1948)

The parasites were located in the liver. Over the period of study only eggs and encysted old nematodes were being found, the eggs being also in various stages of encystment. More rare were non-encysted eggs containing live larvae. The *A. cernua* studied showed a very high (96%) invasion incidence, many fishes containing very numerous or mass-occurring encysted eggs and nematodes.

*Eustrongylides* sp. (1.)

A rare parasite of *A. cernua* (2.4% invasion incidence). Only 6 encysted larvae were found located on the external intestinal walls of 3 fish individuals. The nematodes were 2.5–3 cm long.

## ACANTHOCEPHALA

*Acanthocephalus anguillae* (Müller, 1780) Lühe, 1911

An intestinal parasite, very rare in the materials studied. A single fish was found to contain 3 individuals (0.8%) of the species, mean invasion intensity of the population being 0.024.

*Acanthocephala lucii* (Müller, 1776) Lühe, 1911

Slightly more common acanthocephalans than the preceding species (4% invasion incidence), 1–5 parasites being found in the intestine. Mean invasion intensity of the population reached 0.1.

## CRUSTACEA

*Ergasilus sieboldi* Nordmann, 1832

A single, mature female was found on gills (0.8% invasion incidence).

## DISCUSSION

The parasitic fauna of *A. cernua* in the Szczecin Firth was found to be diversified both qualitatively and quantitatively. Parasites belonging to the following taxa were encountered: *Protozoa* (4 species); *Monogenea* (1); *Cestoda* (2); *Trematoda* (11); *Nematoda* (2); *Acanthocephala* (2); and *Crustacea* (1). The extent of infestation with different species varied (0.8–99.2%). The species found can be divided into several groups based on the extent of infestation.

The following species turned out very rare: *Caryophyllaeus laticeps*, *Proteocephalus* sp., *Nicola skrjabini*, *Eustrongylides* sp., *Acanthocephalus anguillae*, and *Ergasilus sieboldi*. The cestode *Caryophyllaeus laticeps* is an accidental parasite in *A. cernua*, so far unknown in the species. The literature seldom mentions *Eustrongylides* sp. nematodes in the host under study: they were recorded by Molnár (1966) in the Lake Balaton and by Grabda E. et al. (1961) in the Lake Wdzydze. *Acanthocephalus anguillae* as a parasite occurring in *A. cernua* was mentioned by Byhovskij (1962) only. On the other hand, *Proteocephalus* sp. cestodes were being commonly found by some authors: Molnár (1966) recorded a 6.2–100% invasion incidence, depending on a season, in the Lake Balaton. According to that author, the trematodes *Nicola skrjabini* occurred in 37.5–83.3% of the *A. cernua* examined, while Vojtek (1959) found them in 90.9% of his fishes. The

crustaceans *Ergasilus sieboldi* were being seldom found in the Szczecin Lagoon *A. cernua* (Kozikowska, 1957), while Šulman and Černyševa (1969) found them in 80% of their *A. cernua* in the Lake Seliger and Molnár (1966) states 0–67.4% invasion incidences in various seasons.

Other relatively rare parasites were *Glugea acerinae*, *Bunodera luciopercae*, *Phyllodistomum folium*, *Ph. pseudofolium*, and *Acanthocephalus lucii*, their invasion incidences varying from 4 to 10.4%. The trematodes *Phyllodistomum folium* have not so far been recorded in the host discussed in Poland. Their presence is mentioned by Byhovskij (1962). They are, however, common parasites of certain cyprinids in the Lake Dąbie (Wierzbicka, 1977), hence a possibility of their occurrence in *A. cernua*. The extent of *Ph. pseudofolium* invasion is similar to the data from the Lake Seliger (Šulman and Černyševa, 1969) and from the Dnieper (Koval, 1969). The species has been unknown to date from Poland. The *A. cernua* infestation with *Bunodera luciopercae* in the Szczecin Firth does not differ from that observed by other authors (Kozicka, 1959; Vojtek, 1959; Grabda E. et al., 1961; Šulman and Černyševa, 1969). It is only Priemer (1979) who recorded a somewhat lower extent of infestation. On the other hand, *Acanthocephalus lucii* was much more common in *A. cernua* from other water bodies (Kozicka, 1953; 1959; Grabda E. et al., 1961). Molnár (1966) found the invasion incidence of these acanthocephalans in winter to be similar to that in the Szczecin Firth. The protozoans *Glugea acerinae* in *A. cernua* from Czechoslovakia were discussed by Ergens and Lom (1970), the species being new for the fauna of Poland.

3 other species: *Trichodinella epizootica*, *Dactylogyrus amphibothrium*, and metacercariae of *Tylodelphys clavata* were more common in the fishes examined, their invasion incidences reaching 14.5–30.6%. *Trichodinella epizootica* in the host was described from the Szczecin Firth by Pilecka-Rapacz (1980); Šulman and Černyševa (1969) recorded a 46.6% invasion incidence in the Lake Seliger. *Dactylogyrus amphibothrium* is a specific parasite of *A. cernua* (Prost, 1957). Many authors recorded much heavier infestation with the species than that found in the Szczecin Firth (Vojtek, 1959; Molnár, 1966; Šulman and Černyševa, 1969), which may be accounted for by different environmental conditions. *Tylodelphys clavata* metacercariae are frequently mentioned in the literature as the *A. cernua* parasites. Grabda E. et al. (1961) recorded a 50% incidence with a simultaneous high invasion intensity, while Kozicka (1958) observed a 100% infestation in the Lake Družno and up to 500 metacercariae in a single fish individual. On the other hand, Molnár (1966) found the invasion incidence and intensity to be both low.

Common parasites of *A. cernua* in the area of study were *Myxobolus magnus*, *Diplostomum* sp., *Crepidostomum farionis*, and *Bucephalus polymorphus*. These species invasion incidences reached 45.2–68.5%. The protozoans *Myxobolus magnus* have been relatively seldom recorded by the literature. Byhovskij (1962) lists them among the *A. cernua* parasites, while Šulman and Černyševa (1969) observed 20% of their *A. cernua* to be affected. To date, the species has not been observed in Poland. According to the available literature, *Bucephalus polymorphus* is also a rare parasite of the host under

study. Adult forms in Poland were found by Kozicka (1955) only, while the metacercariae were being frequently encountered in cyprinids (Vojtek, 1959; Grabda and Grabda, 1967; Wierzbicka, 1977). The data on the infestation with *Diplostomum* sp. metacercariae are similar to those given by Kozicka (1953) and Grabda E. et al. (1961), Molnár (1966) and Kozicka (1958) observing lower invasion incidences. *Crepidostomum farionis* trematodes have not been so far found in the fish species studied. They parasitise mainly salmonids, more seldom other fish. According to Ślusarski (1958), the parasites were being found in the USSR in 1952 by Zahvatkin and Petruševskij in *Acerina schraetser* (L.).

Metacercariae of *Cotylurus platycephalus*, *C. variegatus*, and *Apophallus donicus* as well as protozoans *Myxobolus muelleri* were very common in the *A. cernua* examined (invasion incidences of 89.5–99.2%). *Cotylurus platycephalus* is also a common parasite of percids in Masurian lakes (Niewiadomska, 1970). Biology of the species was worked out in detail by Odening et al. (1970). Metacercariae of *C. variegatus* were frequently recorded in *A. cernua* by Odening and Bockhardt (1971) who described the parasite's life history. Vojtek (1959) found a lower invasion incidence (42.8%). The *Cotylurus* species mentioned were observed in *A. cernua* and other fish by Swennen et al. (1979). Those authors followed the life cycle of the parasites. The data obtained on the metacercariae of *Apophallus donicus* show a marked resemblance to the data provided by Wierzbicka and Wierzbicki (1973) who found a 100% infestation of *A. cernua* of the area. A slightly weaker invasion was recorded by Vojtek (1959). Biology of the species was described by Odening (1973). *Myxobolus muelleri* was found in the kidney and on the operculum of *A. cernua* (13.3%) by Šulman and Černyševa (1969).

*Capillaria petruschevskii* also proved to be a common parasite of the fishes examined. However, only the eggs and old encysted nematodes were being found. Vojtek (1959) found the encysted eggs in the liver of *Perca fluviatilis* L. The parasite species in question was mentioned as occurring in percids, certain cyprinids, and salmonids by Kutzer and Otte (1966) who described biology and pathology of the parasite. Moreover, Byhovskij (1962) writes about its occurrence in, i.a., the fish species under study. The nematodes have not been so far recorded in Poland. During our studies a mass infestation of the liver was observed fairly frequently, the liver showing a changed coloration and texture.

## CONCLUSIONS

1. The Szczecin Firth *Acerina cernua* showed the presence of 23 parasitic species representing various taxa. The parasites affected the fish to a varying extent, depending on a species.
2. Trematoda was the taxon represented by the highest number of species (11), as many as 6 species being represented by metacercariae.
3. Most metacercariae found and *Capillaria petruschewskii* are the species most common in *A. cernua* of the area.



4. Very rare parasites of the Szczecin Lagoon. *A. cernua* were the species belonging to *Cestoda*, *Acanthocephala*, and *Crustacea*.
5. *Caryophyllaeus laticeps* and *Crepidostomum farionis* have not been so far recorded in *A. cernua*. The cestode *C. laticeps* is, however, an accidental parasite of the fish species under study.
6. *Glugea acerinae*, *Myxobolus magnus*, *Phyllodistomum pseudofolium*, and *Capillaria petruschewskii* are new for the fauna of Poland. *Myxobolus muelleri* and *Phyllodistomum folium* have not been so far recorded in *A. cernua* from Poland.

## REFERENCES

- Baturo B., 1977: *Bucephalus polymorphus* Baer, 1827 and *Rhipidocotyle illense* (Ziegler, 1883) (Trematoda, Bucephalidae): morphology and biology of developmental stages. — *Acta parasit. pol.*, 24, 20: 203–220.
- Byhovskij B.E. (Ed.), 1962: *Opredelitel parazitov presnovodnyh ryb SSSR*. — Izd. AN SSSR, Moskva–Leningrad.
- Dąbrowska Z., 1970: Fish Parasites of the Vistula River near Warszawa. — *Acta parasit. pol.*, 17, 21: 189–193.
- Ergens R., Lom J., 1970: *Puvodci parazitárních nemocí ryb*. — Nakl. Českoslov. Akad. Ved., Praha. (in Czech).
- Grabda E., Grabda J., 1967: Masowa inwazja metacerkarii *Bucephalus polymorphus* Baer, 1827 w oku leszcza — *Abramis brama* (L.). [Mass incidence of *Bucephalus polymorphus* Baer, 1827 metacercariae in the eye of *Abramis brama* (L.)]. — *Wiad. parazyt.*, 13, 6: 733–735.
- Grabda E., Grabda J., Wierzbicki K., 1961: Pasożyty i choroby ryb w jeziorze Wdzydze. [Parasites and fish diseases in Wdzydze Lake]. — *Rocz. Nauk roln.*, D, 93: 239–266.
- Grabda J., 1961: Zdrowotność ryb w potoku Trzebiocha. [The health of fish in Trzebiocha Stream]. — *Rocz. Nauk roln.*, D, 93: 445–459.
- Koval V.P., 1969: Trematodi rodu *Phyllodistomum* Braun, 1899 v ribah URSR. — *Visnik Kiivsk. Univ.*, Ser. biol., 11: 167–174 [in Russian].
- Kozicka J., 1953: Pasożyty ryb w jeziorze Tajty. [Fish Parasites in Lake Tajty]. — *Rocz. Nauk roln.*, D, 67: 171–186.
- Kozicka J., 1958: Diseases of fishes of Družno Lake (Parasitofauna of the biocoenosis of Družno Lake — part VII). — *Acta parasit. pol.*, 6, 20: 393–432.
- Kozicka J., 1959: Parasites of fishes of Družno Lake (Parasitofauna of the biocoenosis of Družno Lake — part VIII). — *Acta parasit. pol.*, 7, 1: 1–72.
- Kozikowska Z., 1957: Skorupiaki pasożytnicze (Crustacea parasitica) Polski, część I. Pasożyty wód ujściowych Odry. [Crustacés parasites (Crustacea parasitica) de la Pologne, Part I. Les parasites des poissons de l'embouchure de l'Odra]. — *Zool. Polon.*, 8, 2–3: 217–270.
- Kutzer E., Otto E., 1966: *Capillaria petruschewskii* (Schulman, 1948): Morphologie, Biologie und pathogene Bedeutung. — *Z. Parasitenk.*, 28: 16–30.
- Milicer W., 1938: Über die parasitischen Würmer aus den Fischen des Wigry-sees. — *Arch. Hydrobiol. Ryb.*, Suwałki, 11: 96–117.
- Molnár K., 1966: Untersuchungen über die jahreszeitlichen Schwankungen in der Parasitenfauna des Kaulbarsches und des Zanders im Balaton mit besonderer Berücksichtigung der Gattung *Proteocephalus*. — *Angew. Parasitol.*, 7, 2: 65–77.
- Niewiadomska K., 1970: On the validity of *Cotylurus platycephalus* (Creplin, 1825) and *C. cucullus*

- (Thoss, 1897) [= *C. communis* (Hughes, 1928)] (Trematoda, Strigeidae). – *Acta parasit. pol.*, 18, 6: 57–70.
- Odening K., 1973: Der Lebenszyklus des Trematoden *Apophallus donicus* in Berlin im Vergleich zu *A. muehlingi*. – *Biol. Zentralb.*, 92, 4: 455–494.
- Odening K., Bockhardt I., 1971: Der Lebenszyklus des Trematoden *Cotylurus variegatus* im Spree-Havel-Seengebiet. – *Biol. Zentralb.*, 90, 1: 49–84.
- Odening K., Mattheis T., Bockhardt I., 1970: Der Lebenszyklus von *Cotylurus c. cucullus* (Thoss) (Trematoda, Strigeida) im Raum Berlin. – *Zool. Jb. Syst.*, 97: 125–198.
- Pilecka-Rapacz M., 1980: Pierwotniaki ryb z rodziny Percidae Zalewu Szczecińskiego. [Protozoan parasites of the Szczecin Firth Percidae]. – *Zeszyty Nauk. Akad. Roln. Szczecin, ser. Rybactwo Morskie*, 82: 75–86.
- Priemer J., 1979: Darmhelminthen von *Perca fluviatilis* L. und *Acerina cernua* (L.) (Pisces) aus Gewässern des Berliner Randgebietes. – *Zool. Anz., Jena*, 203, 3/4: 241–253.
- Prost M., 1957: Monogenoidea skrzeli ryb Wisły. [Monogenoidea of gills of fishes of Vistula]. – *Acta parasit. pol.*, 5, 14: 299–395.
- Swennen C., Heessen H.J.L., Höcker A.W.M., 1979: Occurrence and Biology of the Trematodes *Cotylurus* (*Ichthyocotylurus*) *erraticus*, *C. (I.) variegatus* and *C. (I.) platycephalus* (Digenea: Strigeidae) in the Netherlands. – *Netherlands Journal of Sea Research*, 13, 2: 161–191.
- Šulman R.E., Černyševa N.B., 1969: Parazitofauna otdelnykh vidov ryb ozera Seliger. – In: *Ekologo-parazitologičeskie issledovanija na ozere Seliger* (Ed. J.I. Poljanskij), Izd. Leningrad. Univ.: 59–87 [in Russian].
- Ślusarski W., 1958: Formy ostateczne Digenea z ryb łososiowatych (Salmonidae) dorzecza Wisły i południowego Bałtyku. [The adult Digenea from Salmonidae of the basin of the Vistula and of the South Baltic]. – *Acta parasit. pol.*, 6, 22: 247–528.
- Vojtek J., 1959: Příspěvek k poznání helmintofauny ryb v okolí Komárna. – *Spisy přir. Fak. Univ. Brne*, 12: 437–465 [in Czech].
- Wegener G., 1909: Die Ektoparasiten der Fische Ostpreussens. – *Schr. phys. ökon. Ges., Königsberg*, 50: 195–286.
- Wierzbicka J., 1977: Trematodes of *Abramis brama*, *A. ballerus*, and *Blicca bjoernna* from the Dąbie lake, Poland. – *Acta parasit. pol.*, 25, 1: 1–16.
- Wierzbicka J., Wierzbicki K., 1973: Metacerkariae of the genus *Apophallus* Lühe, 1909 (Trematoda: Heterophyidae) in Western Pomerania of Poland. – *Acta ichthyol. et piscat.*, 3, 1: 75–89.

Translated: Dr. T. Radziejewska

J. Wierzbicka,  
D. Góra,  
G. Dubowska

#### PASOŻYTY JAZGARZA – *ACERINA CERNUA* (L.) ZALEWU SZCZECIŃSKIEGO

##### Streszczenie

Badania prowadzono w okresie od 5.09 do 27.11.1980 roku. Łącznie przebadano 124 jazgarze, u których stwierdzono występowanie 23 gatunków pasożytów należących do Protozoa (4 gatunki), Monogenea (1), Cestoda (2), Trematoda (11), Nematoda (2), Acanthocephala (2) i Crustacea (1).

Zarażenie poszczególnymi pasożytami było bardzo różne (0,8–99,2%). Większość znalezionych metacerkarii oraz *Capillaria petruschewskii* to gatunki występujące najczęściej u jazgarzy w tym środowisku. Do bardzo rzadkich pasożytów tego żywiciela w Zalewie Szczecińskim należą *Cestoda*, *Acanthocephala* i *Crustacea*.

Pierwotniaki *Glugea acerinae* i *Myxobolus magnus* oraz przywry *Phyllodistomum pseudofolium* i niciel *Capillaria petruschewskii* są nowe dla fauny Polski, natomiast przywry *Crepidostomum farionis* nie były dotychczas notowane w literaturze u tego żywiciela. Poza tym *Myxobolus muelleri* i *Phyllodistomum folium* nie stwierdzano u jazgarzy na terenach Polski.

И. Вежбицка, Д. Гура, Г. Дубовска

ПАРАЗИТЫ ЕРША - ACERINA CERNUA (L.) ЩЕЦИНСКОГО ЗАЛИВА

Р е з ю м е

Исследования проводили в период 5.09 - 27.11.1980г. В общем исследовали 124 ерша, в которых нашли 23 вида паразитов принадлежащих до Protozoa (4 виды), Monogenea(1), Cestoda (2), Trematoda (11), Nematoda (2), Acanthocephala (2), Crustacea (1).

Заражение отдельными паразитами сильно отличалось (0,8–99,2%). Большинство найденных метатеркарии а также *Capillaria petruschewskii* это виды чаще всего встречаемые у ерша в этой среде. К очень редким паразитам этого хозяина в Щецинском заливе принадлежат *Cestoda*, *Acanthocephala*, *Crustacea*. Простейшие *Glugea acerinae* и *Myxobolus magnus* а также трематоды *Phyllodistomum pseudofolium* и нематоды *Capillaria petruschewskii* являются новыми для фауны Польши а трематоды *Crepidostomum farionis* до сих пор не отмечали в литературе у этого хозяина. Кроме этого *Myxobolus muelleri* и *Phyllodistomum folium* не были обнаружены раньше у ерша в водах Польши.

Перевод: Dr Józef Domagała

Authors' address:  
Instytut Ichtiologii A.R.  
71-550 Szczecin  
ul. Kazimierza Królewicza 4  
Polska (Poland)

Received: 14 April 1982