THREE SPECIES OF *GYRODACTYLUS NORDMANN, 1832* RECORDED FOR THE FIRST TIME FROM ROMANIA

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During the parasitological investigation of two species of fishes, *Orthrias barbatulus* and *Barbus peloponesius* originated from Moldova and Vilsan rivers, we found four species of *Gyrodactylus*. Among these, *G. katarineri* Malmberg, 1964, *G. barbi* Ergens, 1976 and *G. jiroveci* Ergens et Bychowsky, 1967, are recorded for the first time in Romanian waters. Another species, *G. malmbergi*, represents a second report.

**MATERIAL AND METHODS**

The skin, gills and fins of fifteen fishes (ten representatives of *B. peloponesius* and five of *O. barbatulus*) were examined. The parasites were fixed in a mixture of glicerine and ammonium picrate and then mounted in glycerine-gelatine. Themicroscopical observations were made with the aid phase contrast and illustrations were drawn using a camera lucida. All the measurements of hard parts of opisthaptor are given in millimeters.

*Gyrodactylus katharineri* Malmberg, 1964 (Fig. 1)

*Host*: *Barbus peloponesius* Economidis (Syn: *B. meridionalis* peteny Haek).

*Locality*: Vilsan River (Bradet)

*Location*: fins and skin

*Material*: Five specimens of parasites were collected from this host. Overall length of anchors was 0.089-0.096 mm, length of basal part of anchors 0.053-0.072 mm, of point 0.036-0.048 mm and of roat 0.024-0.031 mm.
The ventral connecting bar is characterised by well developed lateral processes. The length of lateral processes is 0.019–0.029 mm, exceeding the length of the bar proper, the length of which is 0.008–0.010 mm. The width of ventral connecting bar is 0.034–0.043 mm. The membranous extension of ventral connecting bar measures 0.020–0.025 mm. The dimensions of dorsal connecting bar are 0.002–0.004 × 0.025–0.030 mm. The total length of marginal hook is 0.035–0.049 mm and the hook proper measures 0.008–0.009 mm.

The main host of *G. katharineri* is *Cyprinus carpio*, but this species of parasite may occur on the other cypridids host that represent “temporari substratum” (Ergens, 1983), on which this parasite, only temporarily survives.

*B. peloponesius* would belong to this kind of host. In Romania it is the first report of the occurrence of *G. katharineri*. This species was previously recorded on *Cyprinus carpio, Carassius carassius, C. auratus gibelio, Barbus barbus, Barbus peloponesius, Scardinius erithrophthalmus*.

Fig. 1 – *Gyrodactylus katharineri* Malmberg, 1964. Scleratized parts of the opisthaptor.

Scales (1 part = 0.01 mm): A – for anchors; B – for hook proper.
**Gobio gobio, Varhichorinus capoeta, Alburnus alburnus, Ctenopharyngodon idella** and **Hypophthalmichtis molitrix** in the areal of these hosts from Europe and Asia (Gussev, 1985).

**Gyrodactylus barbi** Ergens, 1970 (Fig. 2).

*Host:* *Barbus peloponesius*

*Locality:* Vilsan River (Bradet)

*Location:* fins

*Material:* Only two specimens of this species described by Ergens in 1970 was found on the fins of a *B. peloponesius*. All morphological and metrical data obtained from these specimens are in the range of variability of the species and are given in Table 1. *G. barbi* Ergens 1970 is recorded for the first time in Romania. This species was previously mentioned on *Barbus barbus*, *B. meridionalis peteny* and *B. lacerta cyri* from basins of Black and Caspian Sea.

Another species, *G. malmbergi* Ergens, 1961 (Fig. 2) was collected from the fins and skin of *B. peloponesius* from Moldova River (near Fălticeni). *G. malmbergi* was previously recorded in Romania by Aioanei (1994) on the same host from Vilsan River basin.

**Metrical values of the hard parts of opisthaptor of the recorded Gyrodactylus species**

<table>
<thead>
<tr>
<th>Measured elements</th>
<th>Host</th>
<th>Orthrias barbatus</th>
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<tbody>
<tr>
<td></td>
<td><em>Barbus peloponesius</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td><em>G. barbi</em></td>
<td></td>
</tr>
<tr>
<td>Total length of anchors</td>
<td>0.039–0.096</td>
<td>0.055–0.067</td>
</tr>
<tr>
<td>Length of shaft</td>
<td>0.033–0.092</td>
<td>0.040–0.043</td>
</tr>
<tr>
<td>Length of root</td>
<td>0.025–0.051</td>
<td>0.018–0.020</td>
</tr>
<tr>
<td>Length of point</td>
<td>0.036–0.058</td>
<td></td>
</tr>
<tr>
<td>Length of vertical bar</td>
<td>0.038–0.097</td>
<td>0.036–0.037</td>
</tr>
<tr>
<td>Width of vertical bar</td>
<td>0.025–0.035</td>
<td></td>
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<tr>
<td>Length of extensions of vertical bar</td>
<td>0.020–0.025</td>
<td></td>
</tr>
<tr>
<td>Length of dorsal bar</td>
<td>0.026–0.035</td>
<td></td>
</tr>
<tr>
<td>Width of dorsal bar</td>
<td>0.025–0.050</td>
<td></td>
</tr>
<tr>
<td>Total length of marginal hooks</td>
<td>0.030–0.084</td>
<td></td>
</tr>
<tr>
<td>Length of hook proper</td>
<td>0.004–0.070</td>
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</table>
Fig. 2 – *Gyrodactylus harbi*, Ergens. 1976. Hard parts of the opisthaptor:
Scales (1 part = 0.01 mm): A – for anchors; B – for hook proper.

Fig. 3 – *Gyrodactylus malmbergi* Ergens. 1961 from Vilsan River. Hard parts of opisthaptor.
Scales (1 part = 0.01): A – for anchors; B – for hook proper.
**SPECIES OF GYRODACTYLUS FROM ROMANIA**

*G. markewitschi* Kulakovskaia, 1952 represents a characteristic species on barbels (*B. barbus*, *B. peloponesius* and *B. tauricus*), but Angelescu (1974) found this species of parasite on *Gymnocephalus cernuus* from the Baziaș (Ion Gateș area) (Fig. 4). However, neither the description nor the figuring of *G. markewitschi*, given by Angelescu (1974), permit us to say that it is a correct identification. In addition, *G. cernuus* is an unusual host for *G. markewitschi*.

**Gyrodactylus jiroveci** Ergens et Bychowsky, 1967 (Fig. 5)

*Host:* Orthrias barbatulus  
*Locality:* Moldova River (near Fălticeni)  
*Locations:* fins, skin and gills.  
*Material:* A great number of specimens of this species were found on its characteristic host. The measurements are based on fifteen specimens.

This parasite is mentioned for the first time in Romanian waters, although it seems that it was collected from *Gobio gobio carpathicus* (leg. Bănărescu) in Sebeș River, but was misidentified by E. Roman-Chiriac (1960) as *G. iuhei*. All these specimens collected by us are similar and biometrically conformable to *G. jiroveci* Ergens et Bychowsky, 1967. It seems that *G. gobio carpathicus* is an occasional host for this species, because all members of the morphological group *G. nemachili* (except *G. mongolicus*) were recorded only from Cobitidae (Ergens and Bychowsky, 1967).

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Fig. 4 – *Gyrodactylus markewitschi* Kulakovskaia, 1952 recorded by Angelescu (1974) on *Gymnocephalus cernuus*. 
In fact, there are more close related species characterised by the same type of haptoral armament, which are specific for Noemacheilinae. According to Ergens and Bychowsky (1967) this morphological group can be divided into two subgroups. *G. jiroveci* would belong to a subgroup with European distribution. The other subgroup represented by *G. nemachili*, *G. pseudonemachili* and *G. paranemachili* is spread in the High Asian subregion on the *Triplophysa* genus (*Nemacheilinae*). There is a consistency between these subgroups regarding the morphological and distribution features. But, recently, M. Prost (1989) found on *O. barbatulus* the species *G. pseudonemachili*, parasite which belong to the subgroup characterising the *Triplophysa strauchi* and *T. dorsalis* spreaded in High Asian subregion.

TREI SPECII DE *GYRODACTYLUS NORDMANN, 1832* SEMNALATE PENTRU PRIMA DATĂ ÎN ROMÂNIA

REZUMAT

Sunt semnalate pentru prima dată în apele României *G. katharineri* şi *G. barbi*, ce parazitează pe înotătoarele şi tegumentul de *Barbus peloponesius* Economidis (*Cyprinidae*) şi respectiv *G. jiroveci*, parazit caracteristic al înotătoarelor de *Orthrias barbatulus* (*Cobitidae*).
REFERENCES


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