

The Systematico-Faunistical Survey of the Trematode Fauna of Hungarian Bats. I.

By I. MATSKÁSI, Budapest

In the course of researches conducted in the Parasitological Collection of the Hungarian Natural History Museum and aiming at the exploration of the Hungarian Helminthofauna, we have envisaged a survey of the Trematode fauna parasitizing our home bat species.

The present paper submits a systematico-faunistical survey of the Trematode material deposited in our collection.

A part of the material was collected by GY. TOPÁL; I should like to express my gratitude for the identification of the bats and the cession of the parasite material also in this place. From a parasitological point of view, 166 bat specimens, collected in 22 localities, had been examined hitherto, namely the following species:

Rhinolophus hipposideros, *Rhinolophus ferrumequinum*, *Myotis myotis*, *Myotis oxygnathus*, *Myotis daubentoni*, *Myotis dasycneme*, *Myotis nattereri*, *Miniopterus schreibersi*, *Plecotus auritus*, *Plecotus austriacus*, *Pipistrellus pipistrellus*, *Nyctalus leisleri*, *Nyctalus noctula*, *Barbastella barbastellus*, *Eptesicus serotinus*.

The Trematodes of Hungarian bats had first been discussed by MÖDLINGER (1930). The paper was of pioneer importance in the exposition of the Trematode fauna of our home bats, describing 12 Trematode species from 5 localities. Of the 12 species 4 proved to be new, introduced under the names *Prosotocus vespertilionis*, *Distomum mehelyi*, *Distomum trigonostomum*, and *Distomum amphoraeformis*.

During the subsequent years some new Trematode species had been described and in the wake of intense researches the Trematode fauna of bats became known in a number of European countries. Further investigations of our home fauna were also needed, promising the discovery of numerous new species. At the same time, owing to the advances in systematics and changes in nomenclature, it became possible to relegate to the correct generic taxa the Trematode species discussed in MÖDLINGER's work, that is, the publication of the accepted coupling of the names.

Familia: **Mesotretidae** POCHE, 1926

Genus: **Mesotretes** BRAUN, 1900

Mesotretes peregrinus (BRAUN, 1900) BRAUN, 1900 (Fig. 1)

Syn.: *Distoma peregrinum* BRAUN, 1900.

Hosts: *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, *Miniopterus schreibersi*, *Pipistrellus pipistrellus*.

Distribution: Italy (Genoa), France, Switzerland, Soviet Union (Tadzikisthan), Turkey (Istanbul), Czechoslovakia.

Besides *Plagiorchis vespertilionis*, the biggest bat Trematode. Length of body 4.524 mm, breadth of body 0.884 mm. Body elongate. Cuticle with spines on anterior part of body. Oral sucker 0.175 × 0.280 mm, round, situated terminally. Muscular pharynx 0.13 × 0.15 mm, followed by short oesophagus branching into two caeca.

Caeca almost reaching caudal end of body. Ventral sucker large, round, situated at end of first third of body, more extensive than oral sucker, 0.43×0.416 mm. Two elongate, crescentiform, inwardly arcuate testes located behind ventral sucker. Posterior one slightly bigger than anterior one, 1.352×0.218 mm and 1.222×0.218 mm respectively. Oval ovarium 0.364×0.202 mm, lying immediately behind, and adjacent to, posterior testis. Vitellaria extending from ventral sucker to posterior end of body. Vitellary groups, consisting of small follicles and situated on both sides of body, covering caeca. Cirrus pouch curved into S-shape, lying between anterior testis and ventral sucker, 0.582 mm long and 0.187 mm wide. Genital pore opening behind ventral sucker, in median line of body. Uterus full with eggs, filling posterior end of body, then extending anteriorad between testes to genital pore. Eggs oval, 0.052×0.020 mm.

One specimen found in the small intestine of a *Miniopterus schreibersi* female: István Cave, Lillafüred, 27 Febr., 1966.

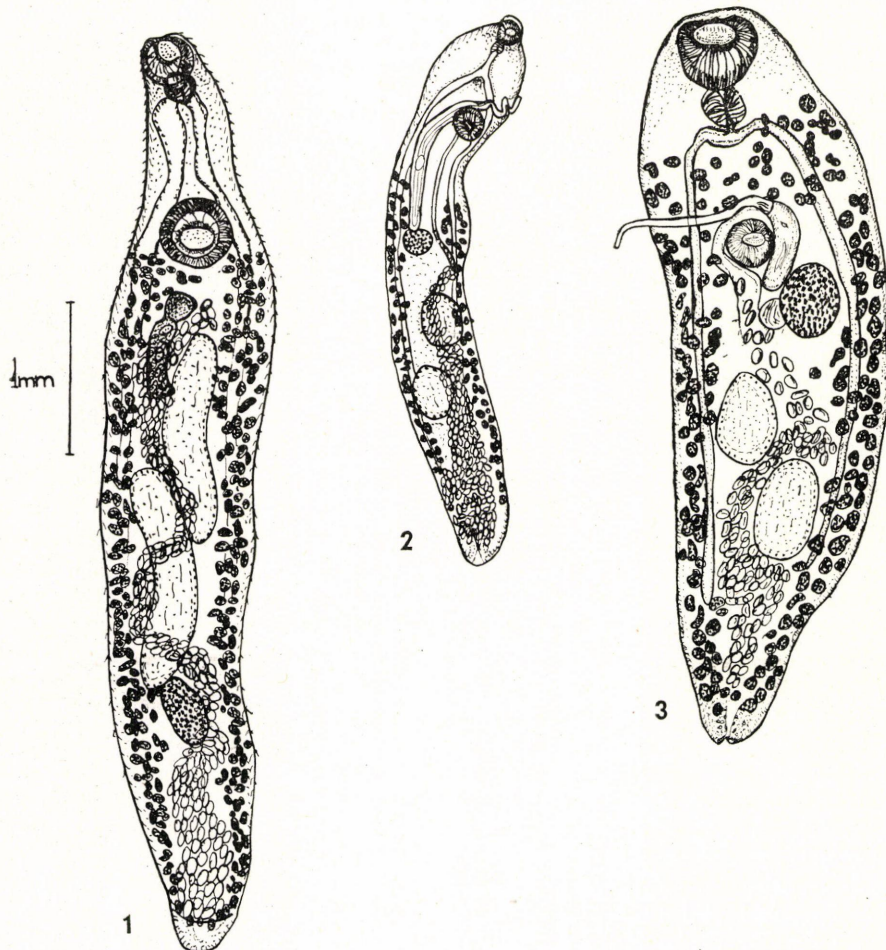


Fig. 1. *Mesotretes peregrinus* BRAUN, 1900; Fig. 2. *Plagiorchis vespertilionis* (MÜLLER, 1784);
Fig. 3. *Plagiorchis asperus* STOSSICH, 1904

Familia: **Plagiorechididae** LÜHE, 1901, emend. WARD, 1917
 Subfamilia: **Plagiorechidinae** LÜHE, 1901, emend. PRATT, 1902

Genus: **Plagiorechis** Lühe, 1899

Plagiorechis (Plagiorechis) vespertilionis (MÜLLER, 1784) BRAUN, 1900 (Fig. 2)

Syn.: *Fasciola vespertilionis* (MÜLLER, 1784) MÜLLER, 1784; *Distomum vespertilionis* MÜLLER, 1784; *Fasciola picta* RUDOLPHI, 1802; *Distoma vespertilionis* (MÜLLER, 1784) ZEDER, 1803; *Distoma lima* RUDOLPHI, 1809; *Distoma (Brachylaimus) lima* STOSSICH, 1892; *Plagiorechis lima* LÜHE, 1899; *Plagiorechis micracanthos* MACY, 1931; *Plagiorechis koreanus* OGATA, 1938; *Choristogonoporus lima* (VAN BENEDEEN, 1873) STUNKARD, 1936; *Plagiorechis magnacotylus* PARK, 1939; *Plagiorechis eptesici* OGATA, 1940; *Plagiorechis yoshidensis* OGATA, 1942; *Plagiorechoides rhinolophi* PARK, 1939; *Plagiorechis felineus* PLOTNIKOV, 1933.

Hosts: *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, *Rhinolophus cornutus*, *Tadarida brasiliensis*, *Myotis emarginatus*, *Myotis mystacinus*, *Myotis nattereri*, *Myotis bechsteini*, *Myotis oxygnathus*, *Myotis myotis*, *Myotis daubentoni*, *Myotis dasycneme*, *Myotis lucifugus*, *Vespertilio murinus*, *Vespertilio superans*, *Eptesicus nilssoni*, *Eptesicus serotinus*, *Eptesicus fuscus*, *Nyctalus noctula*, *Nyctalus lasiopterus*, *Pipistrellus pipistrellus*, *Pipistrellus abramus*, *Pipistrellus kuhli*, *Pipistrellus savii*, *Pipistrellus subflavus*, *Plecotus auritus*, *Plecotus austriacus*, *Miniopterus schreibersi*, *Molossus nasutus*, *Molossus rufus*, *Nyctinomus teniotis*.

Distribution: Europe, Asia, North America, Brasilia, North Africa.

One of the biggest bat Trematodes. Length of body 1.352–3.322 mm, breadth of body 0.260×0.91 mm. Small-sized specimens generally not sexually mature yet. Body elongate, lanceolate. Cuticle covered with spines on anterior part of body. Oral sucker situated subterminally, fairly oval, $0.135-0.228 \times 0.114-0.213$ mm. Length of strongly developed, elongate, cylindrical pharynx 0.052–0.124 mm, width 0.046–0.098 mm. Extremely short oesophagus continuing in exceedingly long caeca, approaching but not reaching posterior end of body. Rounded ventral sucker $0.093-0.218 \times 0.062-0.223$ mm, generally of identical size with oral sucker and invariably situated in first third of body.

Ovarium $0.093-0.244 \times 0.052-0.254$ mm, largely round, situated slightly laterally, at a relatively long distance behind ventral sucker.

Testes, situated rather diagonally to, and behind, one another, located between ventral sucker and posterior end of body. Anterior testis $0.114-0.421 \times 0.062-0.358$ mm, posterior one $0.109-0.457 \times 0.088-0.338$ mm, both oval. Vitellaria extending along both sides of body, from caudal end almost to level of ventral sucker but never more anteriorad beyond its anterior portion. Vitellaria consisting of many minute follicles covering caeca, indeed, frequently found also between two caeca. Cirrus pouch relatively large, located between ovary and ventral sucker, elongate, decurrent usually in an "S" curve anteriorad on right side of ventral sucker, terminating on left side in front of it in evaginable cirrus. Cirrus pouch $0.598-1.014 \times 0.078-0.119$ mm.

Genital pore opening immediately anteriorly of ventral sucker. Uterus extending from caudal end of body to genital pore. Eggs oval, yellowish brown, $0.026-0.036 \times 0.010-0.015$ mm.

Plagiorechis vespertilionis is one of the most frequent bat Trematodes. My material comprises 136 specimens originating from the following hosts:
Myotis myotis, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 1 spec.
Myotis myotis, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis myotis, 1 ♀, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis daubentoni, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 4 spec.

- Myotis daubentoni*, 5 ♂, Abaliget Cave, 9 Febr., 1955, 13-1-3-5-1 spec.
Myotis daubentoni, 1 ♀, Abaliget Cave, 9 Febr., 1955, 26 spec.
Myotis nattereri, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis nattereri, 1 ♀, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis dasycneme, 4, Abaliget Cave, 9 Febr., 1955, 8-6-9-5 spec.
Rhinolophus ferrumequinum, 1, Abaliget Cave, 9 Febr., 1955, 1 spec.
Rhinolophus ferrumequinum, 1 ♀, Miskolc-Tapolca, 26 Febr., 1966, 41 spec.
Miniopterus schreibersi, 2 ♂, István Cave, Lillafüred, 27 Febr., 1966, 1 spec. each.
Nyctalus noctula, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 3 spec.
Nyctalus noctula, 1 ♂, Budapest, 5 Jan., 1966, 1 spec.
Plecotus auritus, 1, Abaliget Cave, 9 Febr., 1955, 1 spec.
Nyctalus leisleri, 1, Kisszépálma-pusztá, Fenyőfő, 25 May, 1965, 1 spec.

Plagiorechis (Multiglandularis) asperus STROSSICH, 1904 (Fig. 3)

Hosts: *Plecotus auritus*, *Barbastella barbastellus*, *Nyctalus lasiopterus*, *Miniopterus schreibersi*.

Distribution: Italy (Istrian Peninsula), Switzerland, Czechoslovakia.

An elongate Trematode, with especially the anterior end of the body rounded. Length of body 0.936–1.580 mm, maximum width 0.364–0.468 mm. Cuticle with weak spines at most on anterior part of body. Oval oral sucker situated subterminally, 0.156–0.171 mm and 0.124–0.166 mm respectively. Pharynx extremely well developed, 0.078–0.088 mm long, 0.098 mm wide, emitting very short oesophagus bifurcating rectangularly into two caeca. Caeca extending posteriorad on two sides of body, but not reaching caudal end. Ventral sucker 0.104–0.109 × 0.104–0.114 mm, smaller than oral sucker, round. Large, elliptical testes situated diagonally to, and behind, one another in posterior half of body. Right testis 0.145–0.208 × 0.101–0.124 mm, left testis 0.156–0.213 × 0.104–0.156 mm.

Oval ovarium situated laterally between ventral sucker and anterior testis, 0.104–0.150 × 0.104–0.130 mm. Uteral branches filling posterior end of body, extending anteriorad and reaching ventral sucker. Genital pore immediately in front, and situated medially, of ventral sucker. Elongate cirrus pouch flanked by ovarium and ventral sucker, then sweeping round ventral sucker, advancing, curving, and terminating in evaginable cirrus; 0.401 × 0.078 mm. Location of vitellaria most characteristic: great number of small follicles situated on two sides of body, frequently also in area of caeca, indeed, also at site of bifurcation and ventral sucker. Follicles extending from pharynx to caudal end of body, forming two lateral groups. Eggs 0.026 × 0.010–0.015 mm, yellow.

My material comprises three specimens from the following bat species:
Myotis oxygnathus, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 2 spec.
Myotis myotis, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 1 spec.

Familia: **Lecithodendriidae** ODHNER, 1910

Subfamilia: **Lecithodendriinae** LÜHE, 1901

Genus: **Lecithodendrium** LOOSS, 1896

Lecithodendrium (L.) linstowi DOLLFUS, 1931 (Fig. 4)

Syn: *Distoma ascidia* LINSTOW, 1884, 1887, et LOOS, 1894, 1898, nec VAN BENEDEN; *Lecithodendrium lagena* MÖDLINGER, 1930, nec BRANDES, 1888; *Mesodendrium moedlingeri* OZAKI, 1929; *Lecithodendrium (L.) moedlingeri* (PANDE, 1935); *Lecithodendrium breckenridgei* MACY, 1936; *Lecithodendrium granulosum* RYSAVY, 1956, nec LOOSS, 1907;

Lecithodendrium minutum GUPTA et BHARDWAJ, 1958; *Lecithodendrium granulosum* SOLTYS, 1959, nec LOOSS, 1907; *Lecithodendrium rysavyi* DUBOIS, 1960.

Hosts: *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, *Rhinolophus euryale*, *Myotis myotis*, *Myotis oxygnathus*, *Myotis emarginatus*, *Myotis mystacinus*, *Myotis nattereri*, *Myotis daubentoni*, *Myotis dasycneme*, *Vespertilio murinus*, *Eptesicus nilssoni*, *Eptesicus serotinus*, *Nyctalus leisleri*, *Nyctalus noctula*, *Pipistrellus pipistrellus*, *Plecotus auritus*,

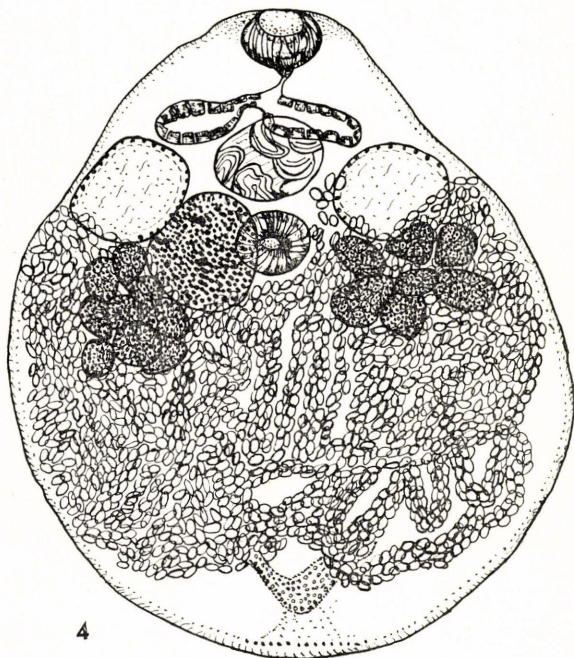


Fig. 4. *Lecithodendrium linstowi* DOLLFUS, 1931

Plecotus austriacus, *Miniopterus schreibersi*, *Pipistrellus nathusii*, *Pipistrellus subflavus*, *Pipistrellus kuhli*, *Barbastella barbastellus*, *Rhinopoma microphyllum*, *Megaderma lyra*, *Asellia tridens*, *Tadarida taeniotis*, *Scotophilus heathi*.

A flatworm of extremely varying form; depending on the rate of contraction, oval, pyriform, sacculiform, or flaskshaped. Length of body 0.335–0.950 mm, width of body 0.245–0.575 mm, though these dimensions extremely variable.

Generally tapering toward oral sucker, animal of a characteristic lageniform shape. Cuticle smooth. Oral sucker small, $0.045-0.092 \times 0.035$ mm, round, eventually slightly oval, followed by small pharynx. Relatively long oesophagus continuing in two short caeca extending largely horizontally toward two sides of body. Ventral sucker round, $0.062-0.077 \times 0.057-0.080$ mm, situated preequatorially. Oral sucker surrounded by many cuticular glands.

Testes situated symmetrically at height of area between ventral sucker and caeca. Round, oval, or slightly angular, left testis $0.075-0.115 \times 0.060-0.120$ mm, right testis $0.070-0.120 \times 0.047-0.100$ mm. Strongly developed vesicula seminalis and prostata complex occupying area between caeca and ventral sucker; generally ellipsoidal, $0.050-0.117 \times 0.065-0.273$ mm. Genital pore situated also here.

Location of ovarium varying, occurring as well between ventral sucker and either one of testes as anteriorly of ventral sucker or occasionally behind it; most

frequently, however, situated between ventral sucker and right testis. Ovarium 0.085—0.125 × 0.075—0.112 mm.

Vitellaria behind testes, a generic feature. Number of follicles and location as related to each other constituting important specific characteristics. In case of *Lecithodendrium linstowi*, invariably taking a rosette form, with 9 follicles on right side and 7 on left. Uterus filling posterior part of body; eggs 0.015—0.020 × 0.007—0.010 mm. yellow.

Our collection comprises 90 specimens from the following bat species and localities: *Rhinolophus ferrumequinum*, 2 ♂, Leány Cave, Pilis, 16 Febr., 1966, 36 and 2 specimens respectively.

Rhinolophus ferrumequinum, 1 ♀, Miskolc-Tapolca, 26 Febr., 1966, 3 spec.

Rhinolophus hipposideros, 1, Abaliget Cave, 9 Febr., 1955, 5 spec.

Myotis oxygnathus, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 7 and 1 spec. resp.

Myotis oxygnathus, 2 ♂, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 1 and 2 spec. resp.

Myotis oxygnathus, 1 ♀, Leány Cave, Pilis, 16 Febr., 1966, 2 spec.

Myotis myotis, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 1 spec.

Myotis nattereri, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 7 spec.

Myotis daubentoni, 1, Abaliget Cave, 9 Febr., 1955, 8 spec.

Nyctalus noctula, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 1 spec.

Nyctalus leisleri, 1 ♀, Kiszépalma-puszta, 25 May, 1965, 6 spec.

Miniopterus schreibersi 2 ♀, István Cave, Lillafüred, 27 Febr., 1966, 2 and 1 spec. resp.

Miniopterus schreibersi 1 ♂, István Cave, Lillafüred, 27 Febr., 1955, 3 spec.

Lecithodendrium (L.) *granulosum* Looss, 1907 (Fig. 5)

Syn: *Lecithodendrium lagena* (BRANDES) in LOOSS, 1899; *Mesodendrium granulosum* FAUST, 1919; *Lecithodendrium* (L.) *hovorkai* MITUCH, 1959.

Hosts: *Rhinolophus ferrumequinum*, *Rhinolophus clivosus*, *Myotis mystacinus*, *Myotis myotis*, *Myotis daubentoni*, *Eptesicus nilssoni*, *Eptesicus serotinus*, *Pipistrellus kuhli*, *Nycteris thebaica*, *Plecotus auritus*, *Miniopterus schreibersi*, *Taphozous perforatus*.

Distribution: North Africa, Czechoslovakia, Poland.

A small-sized Trematode; oval, fusiform, or pyriform, attenuating toward oral sucker. Length of body 0.400—0.732 mm, width of body 0.300—0.465 mm. Terminal oral sucker 0.045—0.065 × 0.045—0.070 mm. Muscular pharynx circular, 0.032—0.065 × 0.032—0.037 mm. Extremely short oesophagus branching into two, largely horizontal, short caeca. Ventral sucker slightly larger than oral sucker, 0.065—0.075 × 0.070—0.075 mm. Oval testes situated paraacetabularly, right testis 0.050—0.137 × 0.057—0.090 mm, left testis 0.045—0.130 × 0.050—0.125 mm. Extensive bursa copulatrix situated between ventral sucker and caeca, 0.100—0.275 × 0.082—0.100 mm.

Location of ovarium varying, in some cases anteriorly, in others posteriorly, of ventral sucker; 0.062—0.275 × 0.050—0.100 mm. Position of vitellaria highly characteristic. In contrast with *Lecithodendrium linstowi*, follicles appearing as an irregular mass and in two groups behind testes, in greater numbers than in *L. linstowi* and not separated into a rosette. Uterus, completely filled with eggs, occupying entire area behind testes. Eggs yellow, 0.012—0.015 × 0.005—0.007 mm.

My material consists of 182 specimens from the following bat species and localities:

Rhinolophus ferrumequinum, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 2 spec.

Rhinolophus hipposideros, 1, Abaliget Cave, 9 Febr., 1955, 15 spec.

Myotis oxygnathus, 2 ♀, Leány Cave, Pilis, 16 Febr., 1966, 3 and 1 spec., resp.

Myotis oxygnathus, 1 ♂, Legény Cave, 17 Febr., 1966, 1 spec.

Myotis oxygnathus, 1 ♂, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 6 spec.

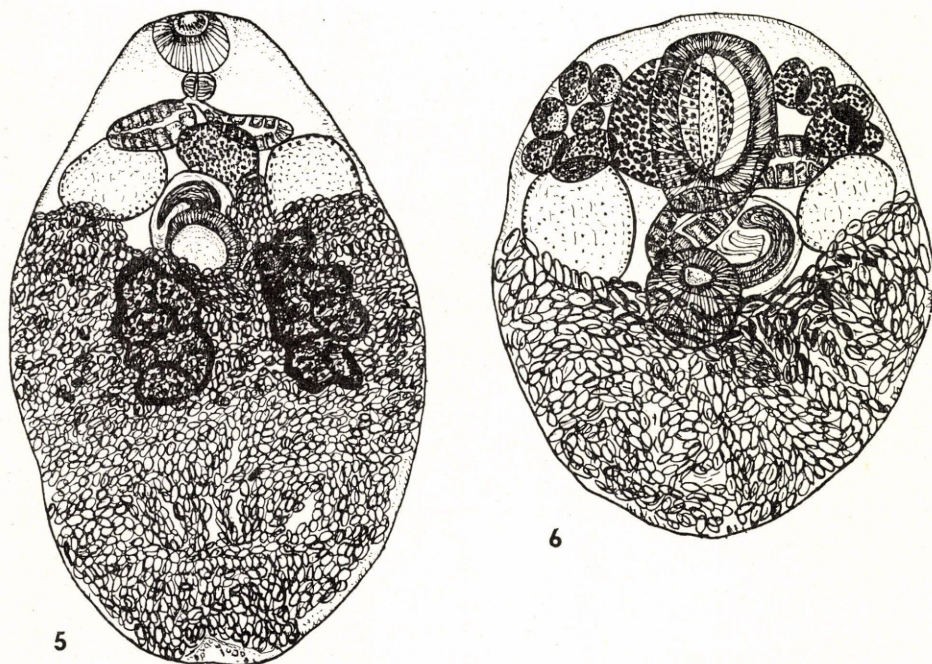


Fig. 5. *Lecithodendrium granulosum* LOOSS, 1907; Fig. 6. *Prosthodendrium chilostomum* (MEHLIS, 1831)

- Myotis oxygnathus*, 1 ♀, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 1 spec.
Myotis oxygnathus, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 3 spec.
Myotis nattereri, 1 ♀, Leány Cave, Pilis, 16 Febr., 1966, 6 spec.
Myotis nattereri, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Nyctalus noctula, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 1 spec.
Nyctalus noctula, 1 ♂, Budapest, 5 Jan., 1966, 3 spec.
Pipistrellus pipistrellus, 1, Szeleta Cave, Lillafüred, 27 Jan., 1959, 5 spec.
Miniopterus schreibersi, 5 ♂, István Cave, Lillafüred, 27 Febr., 1966, 2-1-3-38-1 spec., respectively.
Miniopterus schreibersi, 4 ♀, István Cave, Lillafüred, 27 Febr., 1966, 23-24-21-21 spec., respectively.
Miniopterus schreibersi, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 1 spec.

Subfamilia: **Prosthodendriinae** YAMAGUTI, 1958

Genus: **Prosthodendrium** DOLLFUS, 1931

Prosthodendrium (P.) chilostomum (MEHLIS, 1831) (Fig. 6)

Syn.: *Distoma chilostomum* MEHLIS, 1831; *Distoma ascidioides* VAN BENEDEN, 1873; *Distomum ascidioides* LINSTOW, 1885; *Distomum (Dicrocoelium) chilostomum* STOSSICH, 1892; *Lecithodendrium ascidioides* LOOSS, 1899; *Lecithodendrium chilostomum* SKRJABIN, 1915; *Paralecithodendrium chilostomum* JOYEUX & ISOBÉ, 1925; *Longitrema cordiforme lazmi* BHALERAJ, 1926; *Lecithodendrium kitazawai* OGATA, 1939; *Prosthodendrium piri-forme* YAMAGUTI, 1939; *Prosthodendrium oligolecithum* MANTER & DEBUS, 1945; *Travassodendrium rhinolophi* RYSAVY, 1956; *Travassodendrium raabei* SOLTYS, 1959.

Hosts: *Rhinolophus hipposideros*, *Rhinolophus ferrumequinum*, *Myotis mystacinus*, *Myotis emarginatus*, *Myotis myotis*, *Myotis nattereri*, *Myotis daubentonii*, *Myotis oxygnathus*, *Myotis bechsteini*, *Myotis californicus*, *Vespertilio murinus*, *Eptesicus nilssonii*,

Eptesicus serotinus, *Nyctalus noctula*, *Nyctalus leisleri*, *Nyctalus lasiopterus*, *Pipistrellus pipistrellus*, *Plecotus auritus*, *Miniopterus schreibersi*, *Plecotus subflavus*, *Nyctinomus plicatus*.

Distribution: Europe, Japan, Burma, USA.

A small-sized Trematode, oval or rounded according to the rate of contraction. Length of body 0.370–0.775 mm, width of body 0.270–0.450 mm. Cuticle smooth. Oral sucker very large, oval, subterminally situated, most characteristic of this species. Length of longitudinal axis of oral sucker (0.120–0.175 mm) frequently attaining one-third of length of body; transversal axis 0.120–0.137 mm. Pharynx round, 0.032–0.045 × 0.035–0.050 mm; oesophagus extremely short, frequently indiscernible. Caeca short, not extending beyond level of testes. Ventral sucker round, considerably smaller than oral sucker, 0.075–0.095 × 0.082–0.095 mm. Testes situated para- or slightly preacetabularly, right testis 0.075–0.120 × 0.070–0.125 mm, left testis 0.095–0.120 × 0.080–0.120 mm; generally oval. Bulky and oval bursa copulatrix (0.112–0.133 × 0.110–0.162 mm) situated between ventral sucker and caecal bifurcation.

Situation of ovarium a specific characteristic; appearing usually on right side, anteriorly of right testis, but even if medial, immediately adjacent to oral sucker and frequently covering also caeca. Dimensions: 0.092–0.120 × 0.075–0.117 mm. Vitellaria constituting two groups bilaterally, between oral sucker and testes, one group comprising 5–10 follicles. Uterus, full with eggs, entirely occupying posterior half of body, advancing to posterior end of testes and ventral sucker respectively. Eggs yellow or dark brown, 0.015–0.030 × 0.010–0.015 mm.

Our collection comprises 202 specimens, derived from the following hosts and localities:

- Rhinolophus hipposideros*, 1, Abaliget Cave, 9 Febr., 1955, 1 spec.
Rhinolophus hipposideros, 1 ♂, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 2 spec.
Rhinolophus ferrumequinum, 1, Abaliget Cave, 9 Febr., 1955, 8 spec.
Rhinolophus ferrumequinum, 1, István Cave, Lillafüred, 27 Jan., 1959, 3 spec.
Rhinolophus ferrumequinum, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 32 spec.
Myotis oxygnathus, 1, Hévíz, 8 July, 1958, 5 spec.
Myotis oxygnathus, 1, Pálvölgy Cave, Budapest, 17 Jan., 1957, 1 sp.
Myotis oxygnathus, 2 ♀, Leány Cave, Pilis, 16 Febr., 1966, 1–1 sp.
Myotis oxygnathus, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 3 spec.
Myotis oxygnathus, 1, Abaliget Cave, 19 Dec., 1957, 3 spec.
Myotis oxygnathus, 1 ♂, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 7 spec.
Myotis myotis, 2 ♂, Leány Cave, Pilis, 16 Febr., 1966, 7 and 1 spec. resp.
Myotis myotis, 1 ♀, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis nattereri, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 1 spec.
Myotis nattereri, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 1 spec.
Myotis daubentoni, 1, Abaliget Cave, 9 Febr., 1955, 6 spec.
Myotis daubentoni, 1, Abaliget Cave, 9 Febr., 1955, 1 spec.
Myotis dasycneme, 1, Abaliget Cave, 19 Dec., 1957, 1 spec.
Nyctalus noctula, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 3 spec.
Nyctalus leisleri, 1, Kisszépálpuszta, Fenyőfő, 25 May, 1965, 2 spec.
Miniopterus schreibersi, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 6 spec.
Miniopterus schreibersi, 4 ♂, István Cave, Lillafüred, 27 Febr., 1966, 38–6–1–14 spec., resp.
Miniopterus schreibersi, 3 ♀, István Cave, Lillafüred, 27 Febr., 1966, 3–2–22 spec., resp.
Miniopterus schreibersi, 1, Pisznice Cave, Gerecse, 24 July, 1958, 1 spec.

Prosthodendrium (P.) *ascidia* (VAN BENEDEN, 1873) (Fig. 7)

Syn.: *Distoma ascidia* VAN BENEDEN, 1873; *Distoma lagena* BRANDES, 1888; *Lecithodendrium ascidia* FAUST, 1919; *Lecithodendrium laguncula* STILES & NOLAN, 1931; *Lecithodendrium dinanatum* BHALERAO, 1926.

Hosts: *Rhinolophus ferrumequinum*, *Rhinolophus hipposideros*, *Myotis mystacinus*, *Myotis emarginatus*, *Myotis daubentoni*, *Myotis dasycneme*, *Vespertilio murinus*, *Eptesicus serotinus*, *Pipistrellus pipistrellus*, *Pipistrellus nathusii*, *Pipistrellus kuhli*, *Plecotus auritus*, *Tadarida taeniotis*.

Distribution: Europe, Burma.

The "ascidian" form of this Trematode, tapering toward the head, is most characteristic. Length of body 0.675–0.825 mm, greatest body width 0.370–0.600 mm. Oral sucker situated terminally, 0.075 mm long, 0.070–0.090 mm wide, frequently U-shaped, hardly or not larger than ventral sucker. Pharynx round, 0.015–0.025 × 0.025–0.037 mm, generally immediately followed by caeca, but occasionally also a very short oesophagus discernible. Caeca very short, reaching at most to anterior part of testes. Ventral sucker round, 0.075–0.082 × 0.075–0.080 mm. Testes oval, para- or preacetabular, right testis 0.110–0.115 × 0.100–0.137 mm, left testis 0.101–0.130 × 0.077–0.150 mm. Very voluminous round bursa copulatrix situated anteriorly of ventral sucker, 0.070–0.120 × 0.075–0.100 mm. Round ovary lying medially in front of ventral sucker, often covering bursa copulatrix but never caeca (as in *P. chilostomum*); 0.075–0.145 mm.

Two groups of vitellaria occupying area between oral sucker and testes. Number of follicles varying between 6 and 12, rather bulky. Uterus occupying posterior part of body, advancing anteriorad to height of ventral sucker and testes. Genital pore opening medially, anteriorly of ventral sucker. Eggs 0.015–0.022 × 0.005–0.012 mm.

My material comprises 39 specimens from the following bat species and localities: *Rhinolophus hipposideros*, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 1 spec. *Rhinolophus ferrumequinum*, 1, Abaliget Cave, 10 Dec., 1957, 4 spec. * *Myotis myotis*, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 7 spec.

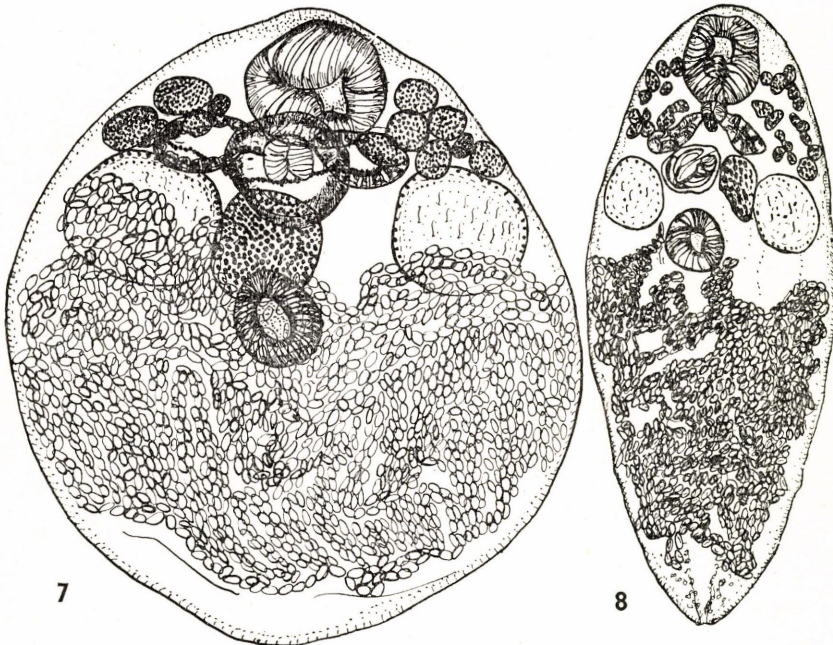


Fig. 7. *Prosthodendrium ascidia* (VAN BENEDEN, 1873); Fig. 8. *Prosthodendrium longiformae* (BHALERAO, 1926)

- * *Myotis oxygnathus*, 1, Hévíz, 8 July, 1958, 6 spec.
Myotis daubentoni, 1, Abaliget Cave, 9 Febr., 1955, 1 spec.
Plecotus auritus, 1, Mts. Pilis, 8 Dec., 1957, 1 spec.
Miniopterus schreibersi, 1 ♀, István Cave, Lillafüred, 27 Febr., 1966, 17 spec.
Miniopterus schreibersi, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 2 spec.
* *Nyctalus noctula*, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 2 spec.

The bat species marked by an asterisk are new hosts for *P. ascidia*.

Prosthodendrium (P.) longiformae (BHALERAO, 1926) (Fig. 8)

Syn.: *Lecithodendrium longiformae* BHALERAO, 1926; *L. orospinosa* BHALERAO, 1926; *L. luzonicum* TUBANGUI, 1928; *L. bhaleraoi* PANDE, 1935; *L. longiformae* var. *allahabadi* PANDE, 1935; *Travassodendrium longiformae* var. *allahabadi* SKARBILOVICH, 1943; *T. bhaleraoi* SKARBILOVICH, 1943; *Skrjabinodendrium orospinosa* SKARBILOVICH, 1943; *Chiropodendrium luzonicum* SKARBILOVICH, 1943; *Prosthodendrium magnum* RYSÁVY, 1956.

Hosts: *Rhinolophus ferrumequinum*, *Nyctalus noctula*, *Pipistrellus kuhli*, *Eptesicus serotinus*, *Scotophilus temminckii*, *Nyctinomus plicatus*, *Myotis mystacinus*, *Myotis nattereri*, *Myotis oxygnathus*, *Myotis dasycneme*.

Distribution: Poland, Czechoslovakia, India, Philippines.

A relatively large-bodied, widely lanceolate bat Trematode. Length of body 0.884–1.679 mm, greatest width 0.116–0.639 mm, at height of ventral sucker. Cuticle smooth. Oral sucker ellipsoid, subterminally situated, longitudinal axis 0.161–0.249 mm, transversal axis 0.145–0.179 mm. Pharynx muscular, round, 0.036–0.052 × 0.052 mm. Pharynx followed by very short oesophagus, branching into two short caeca, not reaching testes. Ventral sucker round, smaller than oral sucker, 0.104–0.197 × 0.124–0.218 mm. Testes situated laterally between terminations of caeca and anterior branches of uterus, largely at same height as ventral sucker. Ovarium preacetabular, immediately adjacent to cirrus pouch, on left side of body; varying oval or pyriform, 0.083–0.145 × 0.072–0.078 mm. Uterus filling posterior half of body, advancing anteriorad between ventral sucker and right testis. Cirrus pouch voluminous, located between ventral sucker and two caeca, 0.062–0.145 × 0.052–0.104 mm. Vitellaria constituting two lateral groups, occupying area between oral sucker and testes. Follicles occasionally covering also caeca. Eggs 0.031 × 0.010 mm, yellow.

Our collection comprises 14 specimens, deriving from the following species and localities:

- Myotis oxygnathus*, 1 ♂, Leány Cave, Pilis, 16 Febr., 1966, 3 spec.
Myotis daubentoni, 3, Abaliget Cave, 19 Dec., 1957, 2–1–1 spec., resp.
Myotis dasycneme, 2, Abaliget Cave, 19 Dec., 1957, 5 and 1 spec., resp.
Rhinolophus ferrumequinum, 1 ♀, Miskolc-Tapolca, 16 Febr., 1966, 1 spec.

Prosthodendrium (P.) carolinum HURKOVÁ, 1959 (Fig. 9)

Host: *Myotis daubentoni*.

Distribution: Czechoslovakia.

An elongate, lanceolate Trematode. Length of body 1.071–1.534 mm, greatest width 0.39–0.564 mm. Cuticle smooth. Subterminally situated oral sucker oval, longitudinal axis 0.202–0.223 mm, transversal axis 0.166–0.171 mm. Pharynx very small, oesophagus short. Caeca extremely characteristic: relatively short but widely saccular. Caeca surrounding cirrus pouch, but not extending beyond anterior part of ventral sucker. This latter round, smaller than oral sucker, 0.150–0.166 × 0.150–

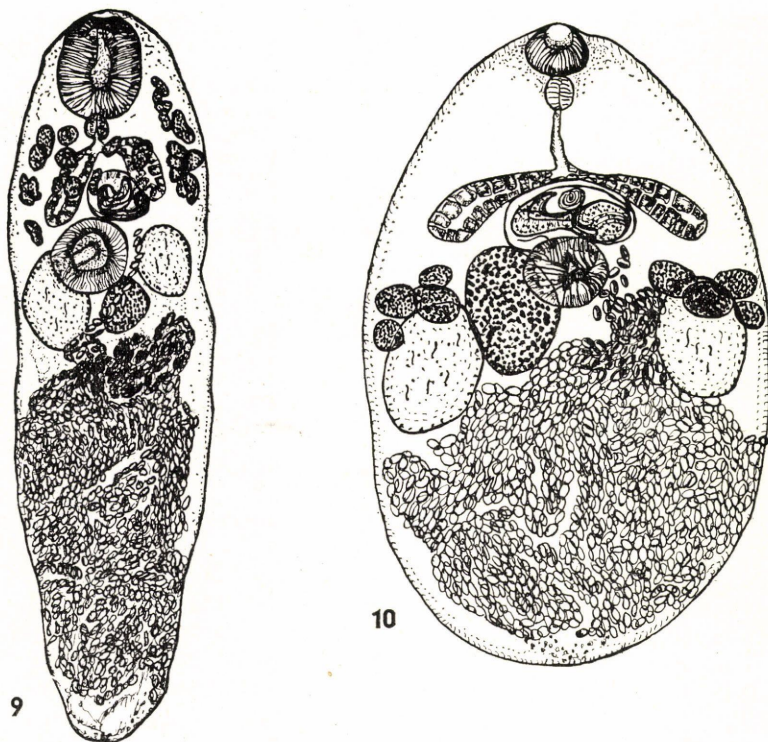


Fig. 9. *Prosthodendrium carolinum* HURKOVÁ, 1959; Fig. 10. *Prosthodendrium hurkovae* DUBOIS, 1960

0.176 mm. Elliptical testes situated on two sides of ventral sucker. Right testis 0.124—0.161 × 0.124—0.126 mm, left testis 0.156—0.166 × 0.130—0.140 mm. Ovary located postacetabularly, left of ventral sucker, oval or pyriform, 0.124—0.130 × 0.093—0.109 mm. Whorls of uterus occupying posterior half of body one branch advancing, between left testis and ventral sucker, anteriorad to genital pore.

Cirrus pouch situated between ventral sucker and caeca, oval, 0.104—0.156 × 0.104—0.130 mm. Vitellaria constituting two groups of follicles, occupying area between oral sucker and ventral sucker in first third of body, mainly in lateral portions of body.

Genital pore medially and anteriorly of ventral sucker. Eggs yellow or brownish, 0.020—0.031 × 0.005—0.010 mm.

There are 9 specimens in my material:

Myotis daubentoni, 1 ♂, Abaliget Cave, 9 Febr., 1955, 1 spec.

Myotis daubentoni, 1 ♀, Abaliget Cave, 9 Febr., 1955, 2 spec.

Myotis daubentoni, 1 ♂, Abaliget Cave, 19 Dec., 1957, 6 spec.

Prosthodendrium (P.) *hurkovae* DUBOIS, 1960 (Fig. 10)

Syn.: *Prosthodendrium* (P.) sp. HURKOVÁ, 1959; *Pycnopus hurkovae* CABALLERO, 1961.

Hosts: *Myotis daubentoni*, *Myotis oxygnathus*.

Distribution: Czechoslovakia, Switzerland.

A fusiform or oval Trematode. Length of body 0.610–0.700, width of body 0.375–0.400 mm. Cuticle smooth. Subterminally situated oral sucker round, 0.050–0.060 × 0.055–0.062 mm. Pharynx small, round, 0.015–0.030 × 0.030–0.037 mm. Oesophagus long, 0.050–0.052 mm, branching into two short caeca. These latter only approaching but not reaching anterior surface of testes. Ventral sucker round, located centrally, 0.060–0.082 × 0.080–0.100 mm (invariably larger than oral sucker).

Two slightly ovoid testes situated symmetrically on both sides of body, right testis 0.112–0.137 × 0.082–0.100 mm, left testis 0.101–0.125 × 0.080–0.087 mm. Well developed prostata complex, surrounded by bifurcation of caeca, containing coiled cirrus and prostata glands.

Ovarium a slightly irregular oval, 0.075–0.101 × 0.050–0.097 mm, located near ventral sucker, between right testis and acetabulum.

Position of vitellaria characteristic, formed by two groups of 4–6 follicles (DUBOIS observed 7–9 follicles, HURKOVÁ also 7–9; I never found more than 6). Follicles lying postcaecally on anterior portion of testes, dorsally slightly covering them, occasionally adjacent to sides of body. Whorled uterus filling entire posterior half of body, behind testes. Eggs brown, 0.015–0.020 × 0.005–0.010 mm.

My material consists of the following specimens:

Myotis daubentoni, 1, Abaliget Cave, 9 Febr., 1957, 6 spec.

Subfamilia: **Pycnoporinae** YAMAGUTI, 1958

Genus: **Pycnoporus** LOOSS, 1899

Pycnoporus heteroporus (DUJARDIN, 1845) (Fig. 11)

Syn.: *Distoma heteroporum* DUJARDIN, 1845; *Pycnoporus skarbilovichii* SHALDIBIN, 1948; *Pycnoporus treljudovi* SHALDIBIN, 1948.

Hosts: *Pipistrellus pipistrellus*, *Pipistrellus kuhli*, *Vespertilio murinus*, *Eptesicus nilssoni*.

Distribution: Hungary, France, England, Czechoslovakia, Egypt.

An elongate, relatively large-sized, lanceolate Trematode. Length of body 0.492–1.378 mm, width of body 0.270–0.400 mm. Anterior part of body narrower than posterior one. Cuticle finely and densely spinose in anterior part of body. Terminally situated oral sucker small, round, 0.020–0.057 × 0.036–0.057 mm. Pharynx muscular, emitting long oesophagus branching into two short but voluminous caeca. Caeca not extending further posteriorly than anterior part of ventral sucker. This latter strongly developed, robust, wide, 0.093–0.208 × 0.104–0.228 mm. Testes situated postacetabularly and symmetrically, left testis 0.098–0.104 × 0.062–0.093 mm, right testis 0.109–0.124 × 0.008–0.093 mm, frequently covered by uterus. Prostata complex lying between ventral sucker and caecal bifurcation, 0.052–0.072 × 0.072–0.093 mm.

Oval ovary situated between ventral sucker and left testis, 0.072–0.083 × 0.062–0.104 mm, with adjacent and conspicuous receptaculum seminis. Egg-filled whorls of uterus occupying posterior half of body, then, extending anteriorly on right side, terminating in front of ventral sucker. Genital pore also opening here. Eggs dark yellow, 0.015 × 0.005 mm. Two vitellary groups consisting of some few follicles. Between ventral sucker and testes, 6 follicles on right, and 7 on left, side of body.

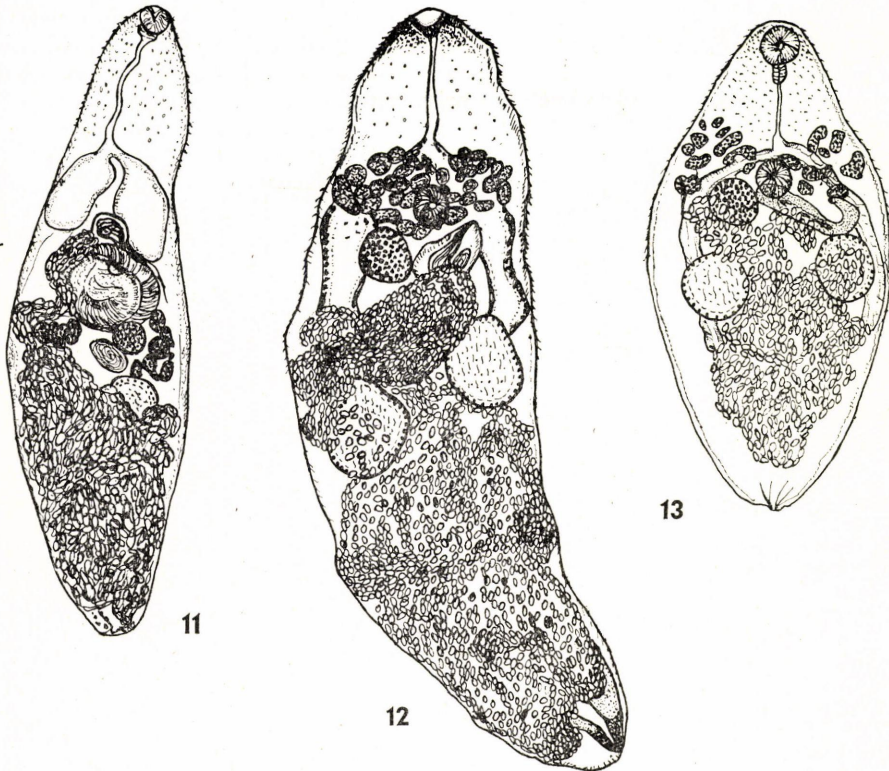


Fig. 11. *Pycnoporus heteroporus* (DUJARDIN, 1845); Fig. 12. *Parabascus semisquamosus* (BRAUN, 1900); Fig. 13. *Parabascus duboisi* (HURKOVÁ, 1961)

My material comprises 14 specimens from the following hosts and localities:

Pipistrellus pipistrellus, 2, Szeleta Cave, Miskolc, 27 Jan., 1959, 5 and 6 spec. resp.

* *Nyctalus leisleri*, 1, Kiszépalma-puszta, Fenyőfő, 25 May, 1965, 1 spec.

* *Miniopterus schreibersi*, 1, Ördöglyuk Cave, Pilisszentkereszt, 25 Jan., 1958, 2 spec.

The species marked by an asterisk are new hosts of *Pycnoporus heteroporus*.

Subfamilia: **Parabascinae** YAMAGUTI, 1958

Genus: **Parabascus** LOOSS, 1907

***Parabascus semisquamosus* (BRAUN, 1900) (Fig. 12)**

Syn.: *Distomum semisquamosum* BRAUN, 1900.

Hosts: *Nyctalus noctula*, *Pipistrellus pipistrellus*.

Distribution: Germany, Hungary, Czechoslovakia, Switzerland, Poland.

A strongly elongate Trematode. Length of body 1.316–1.716 mm, width of body 0.426–0.520 mm. Cuticle densely spinose on anterior portion of body, smooth posteriorly. Terminally situated oral sucker round or slightly oval, $0.041\text{--}0.072 \times 0.062\text{--}0.093$ mm. Pharynx relatively well developed, $0.031\text{--}0.033 \times 0.018\text{--}0.020$ mm, Oesophagus very long, bifurcating at height of vitellaria; two caeca, extending along two sides of body, reaching caudal end of body.

Ventral sucker situated preequatorially, generally larger than oral sucker, $0.052-0.124 \times 0.052-0.114$ mm.

Testes oval, postacetabular, left testis nearer to ventral sucker than right one; this latter obliquely behind it but at nearly same level. Left testis $0.156-0.223 \times 0.119-0.223$ mm, right testis $0.166-0.208 \times 0.104-0.156$ mm. Cirrus pouch oval, located between ventral sucker and left testis; genital pore opening on left side of ventral sucker. Cirrus long, evaginable. Cirrus pouch $0.119-0.176 \times 0.093-0.114$ mm. Ovary slightly smaller than testes, $0.119-0.156 \times 0.114-0.145$ mm, rounded or oval, situated postacetabularly on right side of body. Whorls of uterus occupying posterior half of body, its terminal branch advancing between testes to cirrus pouch. Eggs light or dark brown, $0.020-0.010$ mm. Vitellaria, constituting a uniform region, filling out area between end of oesophagus and front of ventral sucker. Paired vitellary ducts emitted posteriorad from vitellaria.

My material comprises 16 specimens from:

**Myotis daubentoni* 1, Abaliget Cave, 9 Febr., 1955, 5 spec.

**Miniopterus schreibersi*, 1 ♂, István Cave, Miskolc, 27 Febr., 1966, 11 spec.

Both bat species marked by * are hosts new for this parasite.

Parabascus duboisi (HURKOVÁ, 1961) (Fig. 13)

Syn.: *Distomum limatulum* MÖDLINGER, 1930, nec BRAUN, 1900; *Parabascus* sp. HURKOVÁ, 1959; *Limatulum duboisi* HURKOVÁ, 1961.

Hosts: *Myotis daubentoni*, *Myotis mystacinus*, *Myotis dasycneme*, *Myotis nattereri*, *Eptesicus serotinus*.

Distribution: Czechoslovakia, Switzerland, France, Hungary.

A medium-sized, lanceolate Trematode, rapidly attenuating toward the caudal end. Length of body $0.847-1.040$ mm, width of body $0.426-0.600$ mm. Cuticle spinose from oral to ventral suckers. Oral sucker subterminal, $0.065-0.077 \times 0.070-0.080$ mm. Pharynx small, oesophagus relatively long, bifurcating into two caeca. These latter advancing initially at right angles toward side of body, then again turning rectangularly toward caudal end of body. Caeca extending beyond testes, approaching terminal end of body.

Ventral sucker smaller than oral sucker, $0.062-0.100 \times 0.065-0.100$ mm. Testes situated slightly diagonally behind ventral sucker, right testis $0.125-0.175 \times 0.100-0.137$ mm, left testis $0.140-0.150 \times 0.100-0.125$ mm. Well developed cirrus pouch originating postacetabularly and extending on its left side, terminating in a curve anteriorad. Also genital pore situated here, on left side of ventral sucker.

Oval ovary lying on right side of ventral sucker, smaller than testes, $0.085-0.133 \times 0.095-0.130$ mm. Vitellaria consisting of many minute follicles, extending anteriorly of ventral sucker, between two lateral margins of body. Uterus, forming some whorls, situated in posterior part of body, its branches, extending anteriorad between testes, advancing to genital pore. Eggs yellow, $0.017-0.022 \times 0.012-0.015$ mm.

Contrarily to HURKOVÁ's opinion, it was this species that MÖDLINGER found in *Eptesicus serotinus*, collected in Budapest, since he clearly described that the genital pore is on the left side of the ventral sucker (where the cirrus pouch is also to be found).

There are 4 specimens in my material:

* *Miniopterus schreibersi*, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 1 spec.
Myotis daubentoni, 1, Abaliget Cave, 19 Dec., 1957, 3 specimens.

The species marked by * is a host new for the parasite.

***Parabascus lepidotus* Looss, 1907 (Fig. 14)**

Hosts: *Eptesicus serotinus*, *Nyctalus noctula*, *Pipistrellus pipistrellus*, *Pipistrellus kuhli*, *Miniopterus schreibersi*.

Distribution: Egypt, Czechoslovakia.

A small-sized Trematode, tapering toward the oral sucker but widening toward its rounded caudal end. Length of body 0.600–0.995 mm, width of body 0.375–0.475 mm. Cuticle densely and finely spinose on anterior part of body.

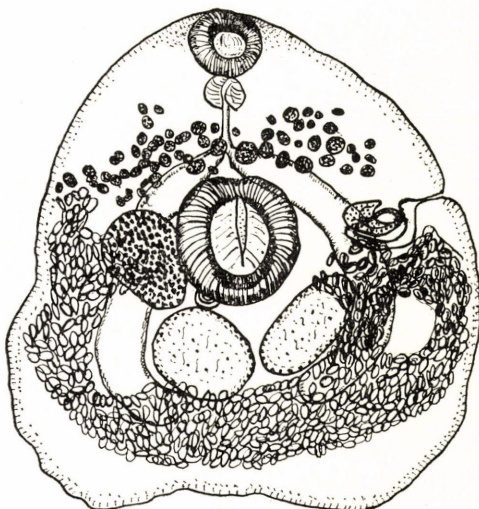
Oral sucker round, subterminal, 0.060–0.070 × 0.060–0.075 mm. Pharynx robust, largely rounded, 0.020–0.035 × 0.012–0.042 mm. Oesophagus relatively long, bifurcating into two lateral caeca advancing caudad. Ventral sucker larger than oral sucker, 0.075–0.112 × 0.075–0.127 mm, round, occupying area between caeca. Two oval testes lying symmetrically behind ventral sucker, mostly covered by uterus; right testis 0.142–0.150 × 0.100–0.112 mm, left testis 0.133–0.175 × 0.110–0.120 mm. Curved cirrus pouch lying between ventral sucker and left testis; genital pore opening behind ventral sucker. Round or oval ovarium situated on right side of ventral sucker, 0.085–0.100 × 0.175–0.085 mm, smaller than testes. Vitellaria composed of numerous follicles, forming two groups and stretching over a wide zone on area of caecal bifurcation anteriorly of ventral sucker.

Uteral whorls, filled with eggs, occupying area behind ventral sucker; eggs dark yellow, 0.020–0.022 × 0.010–0.015 mm.

My material comprises 13 specimens, deriving from the following hosts and localities:



14



15

Fig. 14. *Parabascus lepidotus* Looss, 1907; Fig. 15. *Moedlingeria amphoraeformis* (MÖDLINGER, 1930)

Rhinolophus hipposideros, 1 ♀, Ördöglyuk Cave, Solymár, 7 Dec., 1965, 4 spec.

* *Myotis oxygnathus*, 1, Hévíz, 8 July, 1958, 9 spec.

The species marked by * is a host new for the parasite.

Genus: **Retortosacculus** YAMAGUTI, 1958

Retortosacculus trigonostoma (MÖDLINGER, 1930) (Fig. 17)

Syn.: *Distomum trigonostomum* MÖDLINGER, 1930; *Prosotocus trigonostomum* SKARBILOVICH, 1948.

Host: *Eptesicus serotinus*.

Distribution: Czechoslovakia, Hungary.

A small, oval Trematode with a smooth cuticle. Length of body 0.785–0.837 mm, width of body 0.450–0.465 mm. Subterminal oral sucker strongly developed, characteristically triangular, 0.150–0.167 × 0.172–0.200 mm. Pharynx weakly evolved, 0.027–0.030 × 0.040–0.045 mm, immediately emitting two caeca. These very short, extending merely to ventral sucker. Ventral sucker smaller than oral sucker, 0.110–0.120 × 0.105–0.175 mm. Rounded testes situated symmetrically in one level on both sides of ventral sucker, right testis 0.125–0.132 × 0.100–0.127 mm, left testis 0.101–0.175 × 0.100–0.125 mm. Elliptical ovarium located between ventral sucker and right testis, 0.115–0.142 × 0.077–0.125 mm. Cirrus pouch pyriform, lying behind ventral sucker, 0.140–0.174 × 0.090–0.115 mm.

Genital pore medially behind ventral sucker. Whorls of uterus completely filling area behind ventral sucker. Eggs 0.022 × 0.012 mm, yellowish brown, with operculum. Vitellaria, in two hardly separating groups, situated between oral sucker and testes, chiefly laterally.

There are 4 specimens in my material:

* *Pipistrellus pipistrellus*, 1, Szeleta Cave, Miskolc, 27 Jan., 1959, 1 spec.

* *Myotis oxygnathus*, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 3 spec.

Both species, indicated by *, are hosts new for the parasite.

Genus: **Moedlingeria** YAMAGUTI, 1958

Moedlingeria amphoraeformis (MÖDLINGER, 1930) (Fig. 15)

Syn.: *Distomum amphoraeformis* MÖDLINGER, 1930; *Prosotocus amphoraeformis* SKARBILOVICH, 1947; *Allassogonoporus amphoraeformis* DUBOIS, 1963.

Hosts: *Myotis myotis*, *Myotis oxygnathus*, *Myotis mystacinus*, *Myotis daubentoni*, *Myotis emarginatus*, *Plecotus austriacus*.

Distribution: Czechoslovakia, Switzerland, Hungary.

A small-sized, characteristically pentagonal, "amphoriform" Trematode. Length of body 0.357–0.650 mm, width of body 0.405–0.490 mm. Cuticle completely smooth. Oral sucker weakly developed, 0.025–0.060 × 0.040–0.060 mm. Relatively large pharynx 0.017–0.030 × 0.022–0.035 mm. Oesophagus bifurcating into two caeca anteriorly of ventral sucker. Caeca extending toward sides of body, then advancing rectangularly caudad, then again converging toward median line. Ventral sucker considerably more developed than oral sucker, 0.090–0.133 × 0.100–0.125 mm. Testes ellipsoid, situated beside one another and directed toward center of body behind ventral sucker; right testis 0.065–0.175 × 0.075–0.125 mm, left testis 0.110–0.125 × 0.057–0.087 mm. Ovary round, 0.080–0.087 × 0.050–0.075 mm, on right side of ventral sucker. Uterus occupying area behind ventral sucker, one

whorl advancing anteriorad on right side of body, but not extending beyond anterior margin of ventral sucker.

Eggs traceable to genital pore opening on left side of body, at height of ventral sucker; $0.017-0.025 \times 0.007-0.010$ mm. Vitellaria constituting a uniform region between pharynx and ventral sucker, at height of caecal bifurcation, and composed of numerous minute follicles. Cirrus pouch located on left side of body, immediately near ventral sucker.

My material comprises 81 specimens from the following hosts and localities:

Rhinolophus hipposideros, 1 ♂, Leány Cave, Pilis, 17 Febr., 1966, 1 spec.

Myotis myotis, 1 ♂, Legény Cave, Pilis, 17 Febr., 1966, 4 and 1 spec. rep.

Myotis oxygnathus, 1 ♀, Leány Cave, Pilis, 17 Febr., 1966, 1 spec.

Myotis daubentoni, 1, Abaliget Cave, 19 Dec., 1957, 6 spec.

Myotis dasycneme, 5, Abaliget Cave, 19 Dec., 1957, 5-7-15-18-7 spec. resp.

Miniopterus schreibersi, 1 ♂, István Cave, Lillafüred, 27 Febr., 1966, 16 spec.

Subfamilia: **Gyrabascinae** MACY, 1935

Genus: **Ophiosacculus** MACY, 1935

Ophiosacculus mehelyi (MÖDLINGER, 1930) (Fig. 16)

Syn.: *Distomum mehelyi* MÖDLINGER, 1930; *Prostotocus mehelyi* SKARBILOVICH, 1948.

Hosts: *Eptesicus serotinus*, *Plecotus auritus*.

Distribution: Hungary, Czechoslovakia.

A small-sized, ellipsoid Trematode. Length of body 0.750–0.825 mm, width of body 0.400–0.550 mm. Cuticle smooth. Oral sucker extremely well developed, $0.140-0.165 \times 0.133-0.172$ mm, subterminal. Pharynx small, $0.020-0.035 \times 0.032-0.050$ mm. Oesophagus, contrarily to earlier authors, well discernible, of medium length. Caeca very short, not reaching testes. Ventral sucker round, considerably smaller than oral sucker, $0.100-0.110 \times 0.100-0.120$ mm. Testes rounded or oval, situated para-postacetabularly, symmetrically with one another; left testis $0.133-0.150 \times 0.100-0.150$ mm, right testis $0.125-0.150 \times 0.082-0.130$ mm. Oval ovarium lying between ventral sucker and left testis, $0.085-0.132 \times 0.095-0.100$ mm. Egg-filled whorls of uterus occupying posterior part of body. Eggs brownish, $0.020-0.025 \times 0.010-0.012$ mm. Vitellaria in two groups in anterior part of body, consisting of small follicles, originating at posterior part of oral sucker and extending caudad to ventral sucker. Ducts traceable to behind ventral sucker, into median line of body.

Strongly developed cirrus pouch, describing a double curve, extremely characteristic; originating in front of ventral sucker and extending along its left side, it curves medially behind it. Genital pore situated also here.

Our collection comprises 27 specimens from the following three hosts:

Eptesicus serotinus, 1, Villány, 25 May, 1960, 21 spec.

* *Rhinolophus ferrumequinum*, 1, Abaliget Cave, 19 Dec., 1957, 2 spec.

* *Miniopterus schreibersi*, 1, Ördöglyuk Cave, Pilisszentkereszt, 15 Jan., 1958, 4 spec.

The two bat species marked by * are hosts new for the parasite.

Summary

The paper submits systematico-faunistic survey of the Trematode material, belonging to 15 species, found in bats deriving from 22 localities in Hungary. The following Trematode species have been shown:

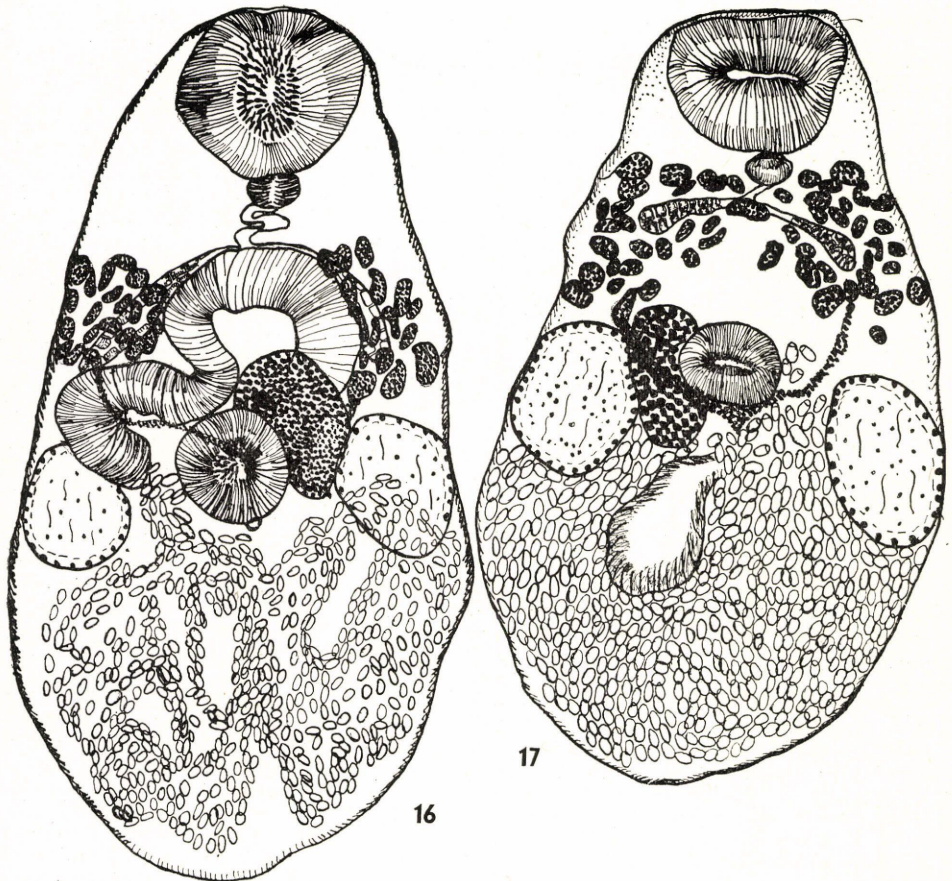


Fig. 16. *Ophiosacculus mehelyi* (MÖDLINGER, 1930); Fig. 17. *Retortosacculus trigonostoma* (MÖDLINGER, 1930)

Mesotretidae: *Mesotretes peregrinus* BRAUN, 1900.

Plagiorchididae: *Plagiorchis vespertilionis* (MÜLLER, 1784); *Plagiorchis asperus* STOSSICH, 1904.

Lecithodendriidae: *Lecithodendrium linstowi* DOLLFUS, 1931; *Lecithodendrium granulosum* LOOSS, 1907; *Prosthodendrium chilostomum* (MEHLIS, 1831); *Prosthodendrium ascidia* (VAN BENEDEN, 1873); *Prosthodendrium carolinum* HURKOVÁ, 1959; *Prosthodendrium longiformae* (BHALERAO, 1926); *Prosthodendrium hurkovae* DUBOIS, 1960; *Pycnopus heteroporus* (DUJARDIN, 1845); *Parabascus semisquamosus* (BRAUN, 1900); *Parabascus duboisi* (HURKOVÁ, 1961); *Parabascus lepidotus* LOOSS, 1907; *Retortosacculus trigonostoma* (MÖDLINGER, 1930); *Moedlingeria amphoraeformis* (MÖDLINGER, 1930); *Ophiosacculus mehelyi* (MÖDLINGER, 1930).

Descriptions and figures, based on the specimens in our collection, are also submitted.

Species new for our home Trematode fauna are: *Mesotretes peregrinus*, *Plagiorchis asperus*, *Lecithodendrium granulosum*, *Prosthodendrium carolinum*, *Prosthodendrium longiformae*, *Prosthodendrium hurkovae*, and *Parabascus lepidotus*.

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Explanation of plates

Plate I.

- Fig. 1. *Mesotretes peregrinus* BRAUN, 1900.
Fig. 2. *Plagiorchis asperus* STOSSICH, 1904.
Fig. 3. *Lecithodendrium granulosum* LOOSS, 1907.
Fig. 4. *Lecithodendrium linstowi* DOLLFUS, 1931.
Fig. 5. *Prosthodendrium hurkovae* DUBOIS, 1960.

Plate II.

- Fig. 1. *Prosthodendrium longiformae* (BHALERAO, 1926).
Fig. 2. *Prosthodendrium carolinum* (HURKOVÁ, 1959).
Fig. 3. *Retortosacculus trigonostoma* (MÖDLINGER, 1930).
Fig. 4. *Ophiosacculus mehelyi* (MÖDLINGER, 1930).
Fig. 5. *Moedlingeria amphoraeformis* (MÖDLINGER, 1930).

Plate I.

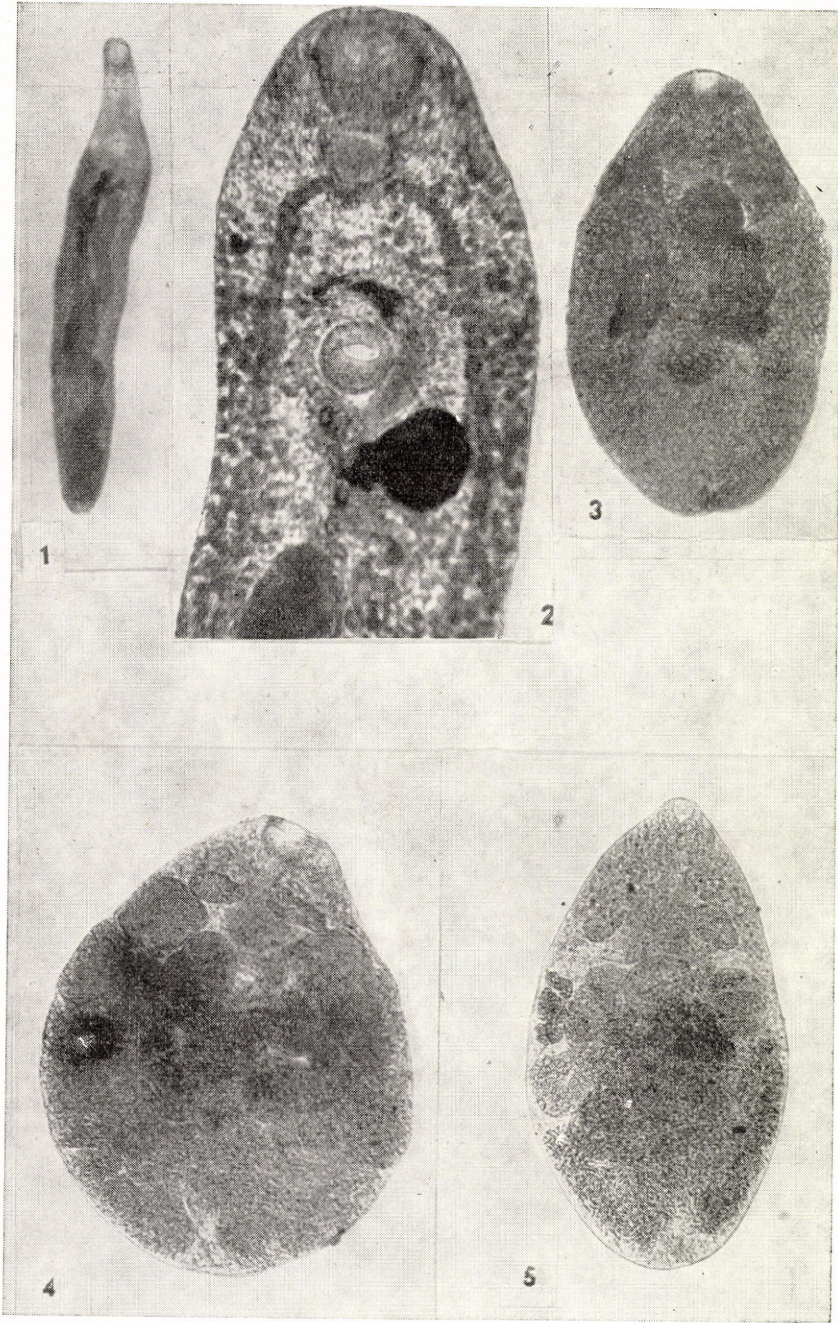


Plate II.

