

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Trematoda Taxon Notebooks

Parasitology, Harold W. Manter Laboratory of

1990

Binder 045, Dicrocoelidae E-K [Trematoda Taxon Notebooks]

Harold W. Manter Laboratory of Parasitology

Follow this and additional works at: <https://digitalcommons.unl.edu/trematoda>



Part of the [Biodiversity Commons](#), [Parasitic Diseases Commons](#), and the [Parasitology Commons](#)

Harold W. Manter Laboratory of Parasitology, "Binder 045, Dicrocoelidae E-K [Trematoda Taxon Notebooks]" (1990). *Trematoda Taxon Notebooks*. 41.

<https://digitalcommons.unl.edu/trematoda/41>

This Portfolio is brought to you for free and open access by the Parasitology, Harold W. Manter Laboratory of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Trematoda Taxon Notebooks by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

Euparadistomini ~~n. trib.~~ YAMAGUTI, 1958

Tribe diagnosis. — Dicrocoeliidae, Dicrocoeliinae: Body discoid to elongate oval. Oral sucker subequal to acetabulum, esophagus short, ceca reaching to near posterior extremity. Acetabulum equatorial. Testes symmetrical, immediately preacetabular. Cirrus pouch small, about midway between two suckers. Genital pore pre- or postbifurcal. Ovary median or submedian, posterodorsal to acetabulum. Vitellaria extending along greater part of lateral margins of body. Uterus occupying nearly whole body. Excretory vesicle Y-shaped. Parasites of reptiles and mammals.

Dicrocoeliidae

EUPARADISTOMUM Tubangui, 1931
(as emended by Gogate, 1939)

Dicrocoeliinae.- Body relatively broad and flat, attenuated at both ends, cuticle smooth. Acetabulum equatorial or largely post-equatorial in position, with weaker musculature than of the oral, bigger or smaller than the oral, and with or without a cavity. Genital pore median, in front of acetabulum, anterior to or behind the cecal bifurcation. Cirrus sac small, midway between two suckers or closer to the oral. Ovary close to the median line, smooth or crenated, with its long axis parallel or oblique to that of the body; shell gland conspicuous median and postovarian; receptaculum seminis small. Uterine coils profusely distributed throughout most part of the body substance, not clearly arranged in ascending and descending loops. Vitellaria submoderate to moderate, formed of fine or medium sized follicles, lateral extracecal, in one continuous patch on either side or split into two patches one behind the other, extending in the last third of the body. Excretory bladder Y-shaped, excretory pore terminal.

Type species: E. varani Tubangui, 1931

Other species: E. cericoulae Gogate, 1939

The testes are preacetabular.

Euparadistomum Tubangui, 1931¹⁾

Syn. *Evandrocotyle* Jansen, 1941

Generic diagnosis. — Dicrocoeliidae, Dicrocoeliinae, Euparadistomini: Body relatively broad and flat, attenuated at both ends. Cuticle smooth. Acetabulum at or very close to equator. Oral sucker larger than acetabulum. Esophagus short. Ceca wide, reaching to near posterior extremity. Testes symmetrical, directly pre-acetabular. Cirrus pouch small, about midway between two suckers. Genital pore median, far in front of acetabulum. Ovary close to median line, directly postacetabular. Receptaculum seminis small. Uterus extending profusely throughout body, not clearly arranged into ascending and descending loops. Vitellaria extending along greater part of each lateral margin of body. Excretory vesicle Y-shaped, bifurcating a little behind shell gland. Parasitic in gall bladder of *Varanus*.

Genotype. *E. varani* Tubangui, 1931 (Pl. 46, Fig. 565), in *Varanus salvator*; Luzon.

Other species: *E. zonuri* (Malan, 1939) Travassos, 1944, syn. *Paradistomum zonuri* Malan, 1939, in *Zonurus cordylus* var. *flavus*, *Z. c.* var. *niger*; South Africa.

Representatives from mammals:

E. cerivoulae Gogate, 1939, in intestine (?) of *Cerivoula picta*; India.

E. paraense (Jansen, 1941) Travassos, 1944, syn. *Evandrocotyle p. J.*, in biliary ducts and bladder of *Caluromys philander*; Brazil.

E. pipistrelli (Sandground, 1937) Travassos, 1944, syn. *Dictyonograpthus p. S.*, (Pl. 88, Fig. 1067) in *Pipistrellus nanus*; Belgian Congo.

¹⁾ Synonymized with *Platynotrema* Nicoll, 1914 — Chatterji, 1948.

Key to the species of *Euparadistomum*

- 1 Body shape distinctly spherical or broadly ovate ; ovary overlapped by ventral sucker 2
Body shape pyriform ; ovary may or may not be overlapped by ventral sucker 5
- 2 Ovary rounded and smooth 3
Ovary irregular or lobed 4
- 3 Body shape broadly ovate with anterior end attenuated ; diameter of testes half that of ventral sucker.....*E. francolini*
Body shape distinctly circular ; presence of cuticular papillae ; diameter of testes 1/3 that of ventral sucker.....*E. paraense*
- 4 Ovary slightly lobed ; caeca narrow and tubular ; ventral sucker diameter 0.75 mms.....*E. pipistrelli*
Ovary angular and irregular in shape ; caeca distended ; diameter of ventral sucker greater than 1 mm.....*E. pearsoni*
- 5 Ovary lobed and elongate in outline..... 6
Ovary rounded and regular in outline..... 7
- 6 Caeca distended ; diameter of testes $\frac{1}{4}$ that of ventral sucker ; genital opening dorsal to caecal bifurcation.....*E. cervioulae*
Caeca narrow and tubular, diameter of testes $\frac{1}{4}$ that of ventral sucker ; genital opening ventral to caecal bifurcation *E. upupai*
- 7 Caeca narrow and tubular ; diameter of testes equal to or slightly greater than the ventral sucker (0.6 mm).....*E. heischi*
Caeca distended ; testes small (0.3 mm.)..... 8
- 8 Body length generally less than 3 mm ; diameter of testes almost equal to that of ventral sucker.....*E. varani*
Body length greater than 4 mm ; diameter of testes $\frac{1}{4}$ that of ventral sucker.....*E. buckleyi*

TABLE I

Parasite	*	Host	Geographical Location	
<i>E. varani</i> Tubangui, 1931	(7)	<i>Varanus salvator</i>	lizard	Phillipines
<i>E. varani</i>	(1)	<i>V. rudicollis</i>	"	Nth. Borneo (Fischthal & Kuntz, 1965)
<i>E. varani</i> var. <i>madagascariensis</i>	?	<i>Chamaeleon verrucosus</i> et spp.	chameleon	Madagascar (Capron <i>et al.</i> , 1961)
<i>E. cervioulae</i> Gogate, 1939	(1)	<i>Cervioula picta</i>	bat	Burma
<i>E. pipistrelli</i> (Sandground, 1937)	(1)	<i>Pipistrellis nana</i>	bat	Belgian Congo
<i>E. paraense</i> (Jansen, 1941)	(4)	<i>Caluromys philander</i>	opossum	Brazil
<i>E. upupai</i> (Chatterji, 1952)	(2)	<i>Upupa epops</i>	hoopoe	India
<i>E. heischi</i> Buckley and Yeh, 1958	(15)	<i>Felis domestica</i>	cat	Kenya
<i>E. buckleyi</i> Singh, 1958	(9)	<i>Vulpes alopec</i>	fox	India
<i>E. francolini</i> Gupta, 1959	(2)	<i>Francolinus francolinus</i>	partridge	India
<i>E. pearsoni</i> n. sp.	(8)	<i>Felis domestica</i>	cat	Papua

* The figures in brackets refer to the number of specimens on which the specific description is based.

From TALBOT, 1970

EUPARADISTOMUM VARANI g. et sp. nov. Plate 1, fig. 2. *Tubanguí, 1931*

Seven mature specimens of this parasite were collected from the gall bladder of a young chicken-eating lizard, *Varanus salvator* Linn., which was caught near Molawin Creek, Los Baños, Luzon, November 17, 1929. In the fresh state, they closely resemble members of the genus *Paradistomum*, but a study of the internal anatomy after the flukes had been stained and mounted, revealed the following differences, which appear sufficiently important to place the species in a new genus in the trematode family Dicrocoeliidae Odhner, 1911: (a) The testes, instead of being behind the acetabulum, as is usually the case among the members of the family Dicrocoeliidae, are located anterior of that organ; (b) the uterine coils are very profuse, being distributed throughout most of the body substance; (c) the acetabulum is equatorial in position; and (d) the cirrus sac is far behind the pharynx, being located at a level about equidistant between that organ and the ventral sucker.

44, 4

Tubanguí: Trematode Parasites, III

421

Generic diagnosis.—Dicrocoeliidae: Body relatively broad and flat, attenuated at both ends. Cuticle smooth. Acetabulum at or very close to equator of body, weaker than oral sucker. Genital pore median, far in front of acetabulum. Testes symmetrical, directly preacetabular; cirrus sac small, about midway between two suckers. Ovary close to median line, directly postacetabular; receptaculum seminis small; uterine coils profusely distributed throughout most of body substance, not clearly arranged into ascending and descending loops; vitellaria moderately developed, extracæcal. Excretory bladder Y-shaped.

Type species, *Euparadistomum varani* sp. nov.

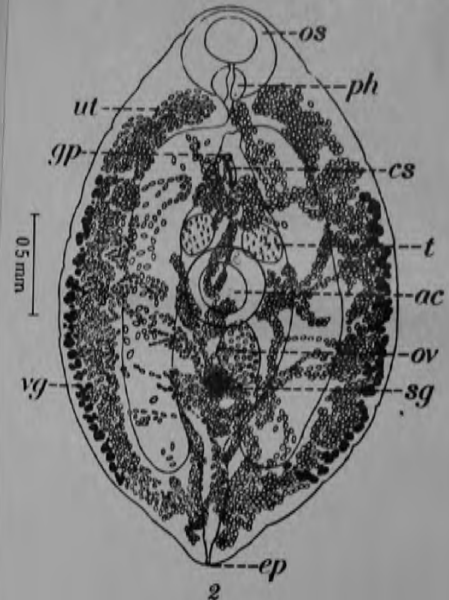
Description of type species.—Body relatively broad, flat, more pointed posteriorly than anteriorly, 2.0 to 2.9 by 1.3 to 1.7 millimeters in size. Cuticle smooth. Oral sucker subterminal, 0.69 to 0.79 millimeter in transverse diameter; acetabulum at or very close to equator of body, smaller than oral sucker, 0.35 to 0.45 millimeter across. Mouth subterminal; prepharynx absent; pharynx 0.19 to 0.21 by 0.22 to 0.24 millimeter in size; oesophagus 0.15 to 0.20 millimeter long, bifurcating at level about midway between genital pore and pharynx; intestinal caeca much dilated, not quite reaching to caudal end of body.

Testes small, oval, with smooth margins, symmetrical, intercaecal, directly preacetabular, measuring 0.24 to 0.28 by 0.14 to 0.22 millimeter; cirrus sac small, elongated, 0.23 by 0.07 millimeter in size, in median line about equidistant between oral and ventral suckers, inclosing slightly coiled seminal vesicle, pars prostatica, and protrusible cirrus. Common genital opening behind oesophageal bifurcation.

Ovary oval, with smooth borders, slightly larger than testes, 0.24 to 0.31 by 0.15 to 0.20 millimeter in size, directly postacetabular, close to median line; shell gland distinct, median, near posteromesial border of ovary; receptaculum seminis small, Laurer's canal present; uterine coils very profusely distributed throughout most of body substance, not clearly arranged into ascending and descending loops; vitellaria moderately developed, in lateral margins of body, extracaecal, extending from posterior level of cirrus sac to termination of intestinal caeca or slightly beyond that level. Mature eggs amber yellow, operculated, with a sort of neck below the operculum, measuring 39.5 to 45.0 by 22.5 to 24.7 microns.

Excretory bladder Y-shaped; excretory pore at posterior tip of body.

- Tubangui, 1931



Specific diagnosis.—*Euparadistomum*: Body broad, flat, attenuated at both ends, but more pointed posteriorly, 2.0 to 2.9 by 1.3 to 1.7 millimeters in size; cuticle smooth; acetabulum at equator of body; cirrus sac small, in median line about midway between suckers; testes oval, symmetrical, directly preacetabular; ovary directly postacetabular, close to median line; uterus very well developed and distributed throughout most of body substance; vitellaria extracaecal, extending from posterior level of cirrus sac to termination of intestinal caeca or slightly beyond that level; eggs numerous, operculated, with distinct necks, 39.5 to 45.0 by 22.5 to 24.7 microns in size.

Host.—*Varanus salvator* Linn.

Location.—Gall bladder.

Locality.—Los Baños, Laguna Province, Luzon.

Type specimens.—Philippine Bureau of Science-parasitological collections, No. 37.

Euparadistomum varani Tubangui, 1931

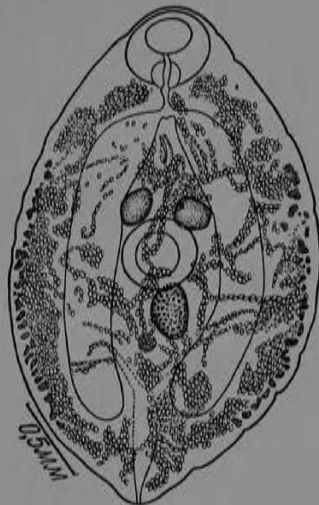
(Рис. 102)

Хозяин: полосатый варан (*Varanus salvator*).

Локализация: желчный пузырь.

Место обнаружения: Филиппины.

Описание вида (по Травассосу, 1944). Длина тела достигает 2—2,9 мм при максимальной ширине 1,3—1,7 мм. Тело относительно широкое и плоское, заостренное спереди. Куттикула гладкая. Брюшная



102

SEE BALASINGAM, 1963.

Euparadistomum varani Tubangui, 1931

SYNONYM: *Platynotrema varani* (Tubangui, 1931) Chatterji, 1948.

HOST: *Varanus rudicollis* (Varanidae).

HABITAT: Gallbladder.

LOCALITY: Ranau, North Borneo.

DATE: 23 September 1960.

SPECIMEN: U.S.N.M. Helm. Coll. No. 60946.

MEASUREMENTS and some pertinent data (based on a single specimen): Body 4,318 by 2,600; forebody 1,818, hind body 1,710, preoral body 55, postcecal space 621; oral sucker 706 by 621, acetabulum 790 in diameter; sucker length ratio 1 : 1.12, center of acetabulum slightly postequatorial; pharynx 169 by 206; esophagus 414 long; testes slightly overlapping acetabulum, right testis 266 by 202, left testis 313 by 228; cirrus sac 342 by 96, anteriormost margin 50 anterior to genital pore, posterior margin 235 preacetabular, containing

seminal vesicle, pars prostatica, prostate cells and cirrus 145 by 29; genital atrium 80 by 75, anterior margin lying 25 anterior to genital pore; latter bifurcal, lying 406 postpharyngeal and 560 preacetabular; ovary 302 by 313, slightly overlapping posterosinistral part of acetabulum; metraterm to right of cirrus sac, opening into genital atrium dextral to cirrus opening, 15 operculate eggs measuring 40 to 48 by 22 to 29; excretory bladder Y-shaped, main stem bifurcating 176 postovarian, arms extending anterolaterally almost to ceca and terminating at immediate postovarian level.

DISCUSSION: This species has been reported from *Varanus salvator* from Luzon and Palawan islands, Philippines, and from *Chamaeleo* spp. from Madagascar. In having its acetabulum slightly larger than the oral sucker rather than smaller our specimen resembles *E. varani* var. *madagascariensis* described by Capron, Deblock and Brygoo (1961).

FROM FISCHTHAL AND KUNTZ, 1965

Euparadistomum varani Tubangui, 1931

SYNONYM: *Platynotrema varani* (Tubangui, 1931) Chatterji, 1948

HOST: *Varanus salvator* (Varanidae).

HABITAT: Gall bladder

LOCALITY: Puerto Princesa, Palawan Island, Philippines.

DATE: 22 May 1962.

SPECIMEN: USNM Helm. Coll. No. 60196.

MEASUREMENTS and some pertinent data (1 specimen): Body 2,945 by 1,917; forebody 1,479, hindbody 943; oral sucker 843 long, acetabulum 523 by 548, sucker length ratio 1:0.62, acetabulum at level of posterior two thirds of body length; pharynx 158 by 170; esophagus 85 long; right testis 275 by 188, left testis 270 in diameter; cirrus sac 237 by 192, thin walled, anterior-most margin 26 anterior to genital pore, containing thin walled, tubular, slightly winding seminal vesicle, a short, cell lined pars prostatica surrounded by prostate cells, and a thick walled, muscular, slightly winding cirrus 109 (longitudinal extent) by 27; anterior margin of genital atrium lying 18 posterior to anterior margin of cirrus sac and 8 anterior to genital pore; genital pore bifurcal (probably postbifurcal as anterior end of body somewhat contracted forcing bifurcation posteriorly), pharynx to genital pore 70, latter to acetabulum 567; gland cells surrounding genital atrium and anterior part of cirrus sac; ovary 255 by 195; seminal receptacle 125 by 90; metraterm quite muscular, ventral to cirrus sac, opening into genital atrium, posterior to cirrus opening; 15 operculate eggs measuring 43 to 55 by 22 to 24; excretory bladder Y-shaped, main stem bifurcating 200 postovarian, arms extending anterolaterally dorsal to ceca to ovarian level; excretory pore surrounded by conspicuous sphincter muscle.

DISCUSSION: This form was first described from the same host from Luzon Island, Philippines. Capron, DeBloek and Brygoo (1961) reported *E. varani* var. *madagascariensis* from *Chamaeleo* spp. from Madagascar. Our partial description of this parasite provides some previously unrecorded data. In our specimen the acetabulum is situated posterior to the middle of the body length rather than being equatorial. Chatterji (1948, 1952) declared *Euparadistomum* Tubangui, 1931, a synonym of *Platynotrema* Nicoll, 1914, stating that the preacetabular extension of the uterine coils was not of generic significance. Baer (1957) also listed them as synonymous. Buckley and Yeh (1958) and Singh (1958) considered *Euparadistomum* valid, noting the significance of the preacetabular extension of the uterine coils in the systematics of digenetic trematodes. Skrjabin and Evranova (1953) and Yamaguti (1958) considered them distinct genera. From the description of *Euparadistomum* by Tubangui (1931) and *Platynotrema* by Nicoll (1914) we agree that the former is valid in possessing a Y-shaped excretory bladder, whereas the latter has a tubular one.

FROM FISCHTHAL AND KUNTZ (1964)

FAMILY DICROCOELIIDAE

Euparadistomum varani Tubangui, 1931

SYNONYM: *Platynotrema varani* (Tubangui, 1931) Chatterji, 1948.

HOST: *Varanus indicus* (Daudin) (Varanidae).

HABITAT: Gall bladder.

LOCALITY: Florida Island, British Solomon Islands.

DATE: February 1945.

SPECIMENS: USNM Helm. Coll. No. 61715.

MEASUREMENTS AND SOME PERTINENT DATA (based on six specimens, three measured): Body 1,902-2,085 by 1,420-1,600; forebody 665-780, hindbody 812-985, preoral body 16-27, postcecal space 330-420; oral sucker 330-395 by 355-405, acetabulum 320-435 by 330-415, sucker length ratio 1:0.86-1.32, center of acetabulum slightly preequatorial; pharynx 111-121 by 119-138; right testis 162-218 by 158-172, left testis 172-198 by 148-188; cirrus sac 148-208 by 74-75, overlapping acetabulum 12 in one, 34 and 82 preacetabular in two others; genital pore bifurcal or just postbifurcal, 106-125 postpharyngeal, 160-189 preacetabular; ovary 152-208 by 123-206, submedian to left in two, to right in one; seminal receptacle dorsal, 101-131 by 99-135; ootype complex median; Mehlis' gland well developed; metraterm dextral to cirrus sac when ovary on left and sinistral when ovary on right; 18 eggs 37-56 by 21-27; Y-shaped excretory bladder bifurcating 125-162 postacetabular.

DISCUSSION: Two immature specimens were recovered in February 1945 from the gall bladder of *Lepidodactylus guppyi* Boulenger (Gekkonidae) from Florida I. They measure 750 by 413 and 1,140 by 635, respectively, and appear to be *Euparadistomum varani*. We (1964, 1965b) briefly reviewed the genus and species, noting the presence of the latter in *Varanus salvator* (Laur.) from the Philippines, *V. rudicollis* (Gray) from North Borneo, and *Chamaeleo* spp. (Chamaeleonidae) from Madagascar. Balasingam (1964) reported this species from *V. nebulosus* (Gray) from Malaya.

FISCHTHAL + KUNTZ (1967)

Euparadistomum varani Tubangui, 1931 var. madagascariensis
of Capron, Deblock and Brygoo, 1961

EUPARADISTOMUM VARANI VAR. MADAGASCARIENSIS			
MENSURATIONS			
DIMENSIONS MOYENNES D'APRÈS LES DEUX EXEMPLAIRES DE <i>C. verrucosus</i>			
Longueur	3,58 mm.	Poche du ciere :	
extrêmes, 3,4 et 3,71		approx.	280 x 80 μ
Largeur	1,70	Testicules	415 - 480 x 380 - 430 μ
Ventouse orale	645 - 700 μ	Ovaire	370 x 350 μ
Ventouse ventrale	674 - 675 μ	Oufs	43-44 x 25-27 μ (extrêmes : 38-47 x 23-32)
Pharynx	200 - 250 μ		

Hôtes et localisation géographique.

Chamaeleo verrucosus Cuvier :
Fort-Dauphin. (MADAGASCAR)

Chamaeleo lateralis Gray :
Tulear. (MADAGASCAR)

Chamaeleo pardalis Cuvier :
Ambanja. (MADAGASCAR)

Intensité du parasitisme.

Faible, 1 à 2 trématodes.

Localisation.

Vésicule biliaire.

← [↑] FROM CAPRON, DEBLOCK + BRYGOO, 1961 →

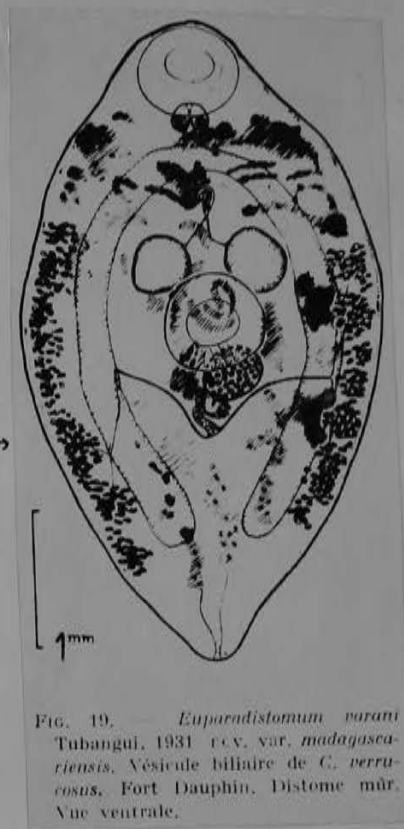


FIG. 19. — *Euparadistomum varani* Tubangui, 1931 n. sp. var. *madagascariensis*. Vésicule biliaire de *C. verrucosus*, Fort Dauphin. Distome mûr. Vue ventrale.

Euparadistomum cercopitheci Fischthal, 1969
(Figs. 1-4)

The specimens of this report were collected by Robert W. Cooper, D.V.M.,² Director, NIH Primate Colony, Institute of Comparative Biology, Zoological Society of San Diego. They were brought to the author's attention by G. E. Cosgrove, M.D., Biology Division, Oak Ridge National Laboratory. Dr. Cooper (personal communication) noted that "The talapoin monkey from which the five trematodes were collected was received in our colony from Bata, Rio Muni (West Africa) on 26 April 1968. This animal was an adult female. . . Talapoin monkeys are extremely common in Rio Muni and it is unlikely that the specimen was captured more than 25 miles from Bata. . . In a total of 20 examinations performed on talapoins in Rio Muni, in Cameroun, and here in San Diego, I have found this particular trematode on only one other occasion. In this case a single immature specimen was recovered from the gall bladder of a freshly captured advanced pregnant female which was purchased in Bata from a native on 3 January 1968." Specimens were fixed, without pressure, in Roundabush solution, stained in Semichon's acetocarmine or Mayer's carmalum, and mounted in permount. Measurements are in microns.

HOST: *Cercopithecus (Miopithecus) talapoin* Schreber (Cercopithecidae).

HABITAT: Gall bladder.

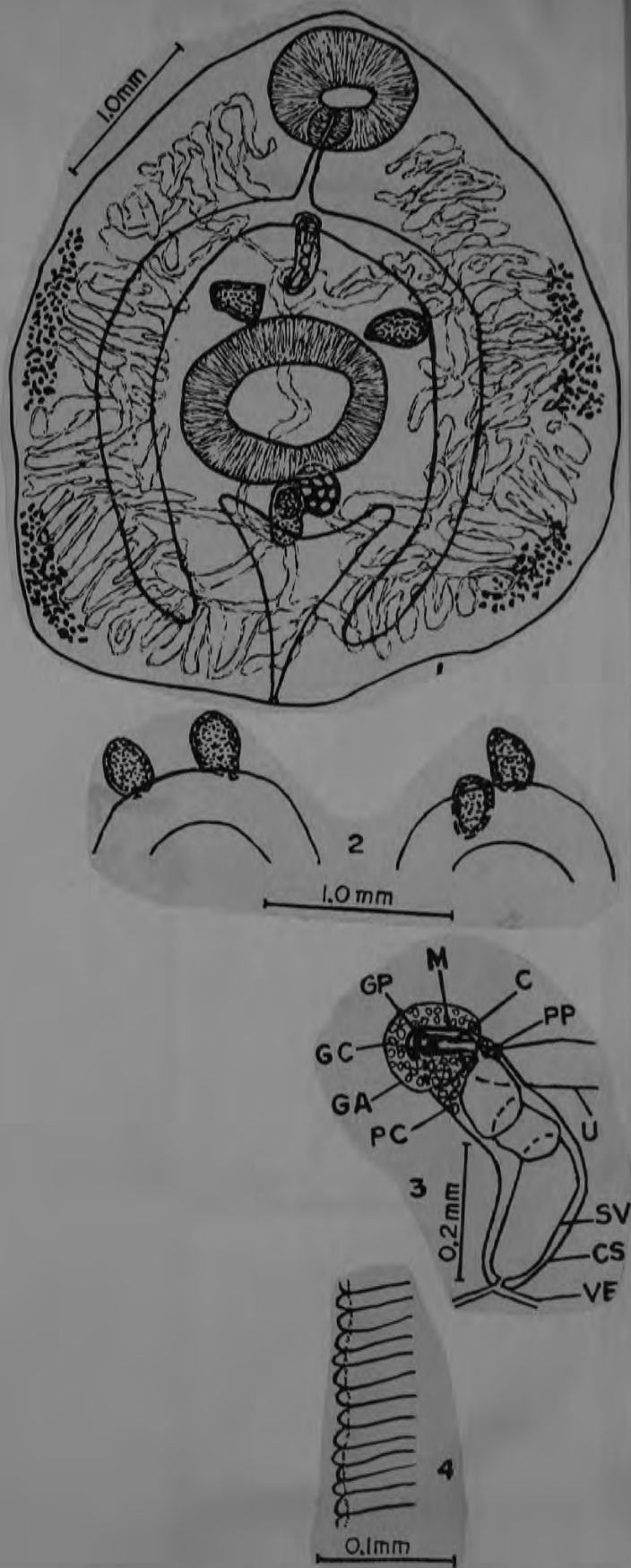
LOCALITY: Vicinity of Bata, Rio Muni; Equatorial Guinea.

SPECIMENS: USNM Helm. Coll. No. 71288 (holotype); No. 71289 (paratypes).

DIAGNOSIS (based on five mature specimens from one host): Body flat, slightly longer than wide, anterior extremity round, posterior nearly truncate, tending toward trigonal shape, 3,180-4,385 by 2,630-3,920. Tegument thick, annulated; papillae and spines absent. Forebody 1,300-1,815 long, hindbody 997-1,450 long; forebody-hindbody length ratio 1:0.70-0.87; preoral space 60-115 long. Suckers transversely elongate; oral sucker subterminal ventral, 675-835 by 760-974; acetabulum 860-1,166 by 997-1,304, center at level of anterior 52-57 per cent of body length; sucker length ratio 1:1.22-1.39, sucker width ratio 1:1.29-1.45. Prepharynx absent; pharynx usually longitudinally elongate, 205-290 by 200-230, entirely dorsal to or considerably overlapping oral sucker; esophagus 70-450 long; cecal bifurcation 335-510 preacetabular; ceca wide, terminating 220-560 from posterior extremity.

Testes two, situated symmetrically at anterolateral margins of acetabulum in three specimens, oblique with left testis anteromedian to acetabulum in two others, usually overlapping acetabulum, margins smooth to slightly lobed, usually transversely elongate but sometimes longitudinally elongate, right testis 225-335 by 225-360; left testis 245-300 by 260-365. Vasa efferentia uniting at cirrus sac. Latter median to submedian, straight to curving slightly, 250-440 by 125-160, lying 75-160 preacetabular, containing saccular, undulating seminal vesicle, short pars prostatica sur-

(over)



rounded by prostate cells, and muscular cirrus. Genital atrium round, wide, shallow. Genital pore median, bifurcal to postbifurcal, situated 205–520 postpharyngeal, 205–475 preacetabular.

Ovary smooth to slightly lobed, median to submedian (left), overlapping posterior part of acetabulum, longitudinally or transversely elongate, 265–375 by 290–335. Mehlis' gland well developed, very compact, round to longitudinally elongate, situated dextral to ovary in three specimens, sinistral in two others, usually overlapping ovary dorsally, 140–205 by 120–185. Seminal receptacle situated as for Mehlis' gland, large, saccular, longitudinally elongate, 300–385 by 195–220. Laurer's canal extending to dorsal surface near seminal receptacle. Vitelline follicles in lateral extracecal fields, extending from pretesticular, testicular or acetabular level to level anterior or posterior to or at cecal ends, anterior and/or posterior limits of fields in individual specimen may be subequal, one or both fields may be interrupted at ovarian level or both may be uninterrupted. Uterine coils extending to posterior extremity, overlapping vitellaria ventrally, anteriorly extending to sides of oral sucker and lateral body margins; coiling essentially as schematically presented by Buckley and Yeh (1958) in figure 3 of their new species *Euparadistomum heischi*. Metraterm shorter than cirrus sac, muscular, anteriormost extent anterior to cirrus sac and genital pore, surrounded by gland cells. Eggs numerous, operculate; shells of younger eggs yellow in color, becoming yellow-brown, and finally brown as they progress from proximal to distal uterine coils; 20 older eggs measuring 34–41 by 22–26.

Excretory bladder Y-shaped, stem post-ovarian, arms extending to ovarian level; pore terminal.

Species of *Euparadistomum* Tubangui, 1931, have been reported from lizards, birds, and mammals from the Philippine Islands, North Borneo, British Solomon Islands, Malaya, Burma, India, Madagascar, Belgian Congo, Kenya, and Brazil. African species are: *E. varani* var. *madagascariensis* Capron, Deblock and Brygoo, 1961, from chamaeleonid lizards from Madagascar; *E. pipistrelli* (Sandground, 1937) Travassos, 1944, from a vespertilionid bat from the Belgian Congo; *E. heischi* Buckley and Yeh, 1958, from a domestic cat (Felidae) from Kenya. Species from mammalian hosts, in addition to the latter two listed above, are: *E. cerivoulae* Cogate, 1939, from a vespertilionid bat from Burma; *E. paraense* (Jansen, 1941) Travassos, 1944, from a didelphid marsupial from Brazil; *E. buckleyi* S. N. Singh, 1958, from a fox (Canidae) from India. *E. cercopithecii* sp. n. appears closest to *E. paraense*, *E. buckleyi*, and *E. francolini* R. Gupta, 1959 (from a phasianid bird from India). It differs from them in body shape, and in possessing an annulated tegument. It differs further from *E. paraense* in lacking tegumental papillae, and in having smaller eggs and sucker ratios; from *E. buckleyi* in possessing a well developed Mehlis' gland; and from *E. francolini* in having smaller eggs.

The differences cited above for declaring *E. cercopithecii* a new species appear to be relatively small in view of experimental studies on host influenced intraspecific morphological variations reported for *Opisthioglyphe ranae* (Frölich, 1791) Looss, 1907 (Plagiorchiidae) by Grabda-Kazubska (1967), and for *Telorchis bonnerensis* Waitz, 1960 (Telorchidae) by Watertor (1967). However, experimental data on morphological variability and on life cycles are not known for any species of *Euparadistomum*. Additionally, *E. cercopithecii* is from Africa, whereas the most closely related species are either from Brazil or India. Therefore, the author feels that the new species designation for the present specimens is justified.

Euparadistomum cervivoulae Gogate, 1939

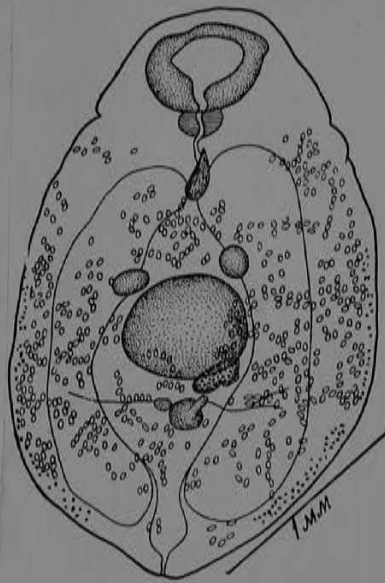
(Рис. 103)

Хозяин: *Cervivoula picta* (Pallas, 1787).

Локализация: кишечник.

Место обнаружения: Индия.

Описание вида (по Травассосу, 1944). Длина тела достигает 2,7 мм при максимальной ширине 1,5 мм в области яичника. Тело широкое, плоское, заостренное сзади. Кутикула гладкая. Брюшная присоска со слабо развитой мускулатурой, $0,50 \times 0,58$ мм в диаметре, лежит почти целиком позади середины тела. Ротовая присоска с умеренно развитой мускулатурой располагается субтерминально; ее диаметр $0,40 \times 0,55$ мм. Соотношение размеров присосок 1:1,13. За ротовой присоской следует фаринкс. Пищевод тонкий, длиной 0,16 мм. Очень расширенные кишечные стволы тянутся почти до заднего конца тела. Половое отверстие находится на уровне середины пищевода, лежит медианно. Половая бурса средней величины, достигает $0,26 \times 0,07$ мм, содержит маленький скрученный



103

Euparadistomum indicum (Baugh, 1957) Fischthal and Kuntz, 1965
syn. Platynotrema indica Baugh, 1957

We (1964b) reviewed the status of the genus *Euparadistomum* Tubangui, 1931, but overlooked the paper by Baugh (1957b) which noted that the latter genus was a synonym of *Platynotrema* Nicoll, 1914. We reiterate that *Euparadistomum* is valid in possessing a Y-shaped excretory bladder, whereas the latter has a tubular one. Therefore, we are transferring Baugh's *Platynotrema indica* to *Euparadistomum* as *E. indicum* (Baugh, 1957) n. comb.

FROM FISCHTHAL AND KUNTZ, 1965

Euparadistomum paraense (Jansen, 1941) Travassos, 1944

Синоним: *Evandrocotyle paraense* Jansen, 1941

(Рис. 104)

Хозяин: *Caluromys philander* (L.).

Локализация: желчные протоки и пузырь.

Место обнаружения: Бразилия.

Описание вида (по Травассосу, 1944). Тело круглое, плоское, 5,4—5,6 мм длины при максимальной ширине 4,9—5,5 мм. Кутикула с неправильно расположенными коническими сосочками. Брюшная присоска мышечная, немного крупнее ротовой, лежит на середине тела, $1,3 \times 1,3$ мм и $1,7 \times 1,4$ мм. Ротовая присоска субтерминальная, ее диаметры $1 \times 0,7$ мм и $1,1 \times 0,9$ мм. Соотношение размеров присосок 1 : 1,52—1,57. За ротовой присоской следует фаринкс 0,26—0,30 мм в диаметре. Пищевод 0,22—0,38 мм длины. Кишечные стволы широкие, изогнутые дугою, направленной вогнутой стороной внутрь; окончания кишечных стволот отстоят от заднего конца тела на 0,5—0,7 мм. Половое отверстие лежит медианно, позади бифуркации кишечника. Половая бурса относительно маленькая, расположена впереди брюшной присоски, достигает $0,38 \times 0,53 \times 0,10$ — $0,112$ мм, содержит циррус, простатическую часть и скрученный семенной пузырек. Vasa efferentia соединяются при вхождении в половую бурсу. Семенники более или менее круглые, $0,15 \times 0,26$ мм и $0,48$ — $0,68$ мм в диаметре, лежат впереди брюшной присоски, соприкасаясь с ней или частично проникая дорзально от нее. Они лежат на одном горизонтальном уровне, прилегая своими латеральными краями к внутренним краям кишечных стволот. Яичник поперечно удлинённый, лежит медианно, позади брюшной присоски; его диаметр $0,33 \times 0,36$ — $0,45 \times 0,45$ — $0,76$ мм. Частично он своєю передней частью располагается дорзально от задней части брюшной присоски.

Имеется лауреров канал. Тельце Мелиса, $0,38$ — $0,53$ мм в диаметре, лежит сублатерально, в зоне яичника, соприкасаясь с ним. Семяприемник лежит частично в области тельца Мелиса, рядом с яичником и достигает $0,18 \times 0,26$ мм и $0,30 \times 0,38$ мм. Желточники располагаются латерально,



Euparadistomum pearsoni Talbot, 1970

DESCRIPTION

(All measurements in mm.)

In the live state the worms were a pinkish grey in colour and generally of similar body proportions to that described below in the fixed specimens stained with Mayers Acid Haemalum solution. (See Fig. 1).

The body is flat and discoid; it has an average length of 5 and measures 4.4-5 in breadth. The cuticle is smooth. The ventral sucker is centrally placed and has a diameter of 1-1.3, the subterminal oral sucker is considerably smaller and measures 0.7-0.85. This size ratio between the suckers was consistently observed in all specimens examined. The digestive system comprises a prominent muscular pharynx 0.25 long, which opens through a short oesophagus to a pair of dilated caeca which terminate close to the caudal end of the body.

Two relatively large testes 0.3-0.35 in diameter, are located on the anterior margin of the central sucker and lie between the branches of the caeca. The ratio of the diameter of the testes to the ventral sucker is approximately 1 : 4, a feature which aids in differentiating this species from *E. heischii*. The cirrus sac measures 0.38 × 0.13 and lies in the midline directly below the caecal bifurcation.

The ovary is irregular in outline and measures approximately 0.45 × 0.35. It is covered by the posterior border of the ventral sucker and occupies a position slightly to the left of the median plane; the seminal receptacle is prominent immediately posterior to the ovary and the opening of Laurer's canal is located on the dorsal

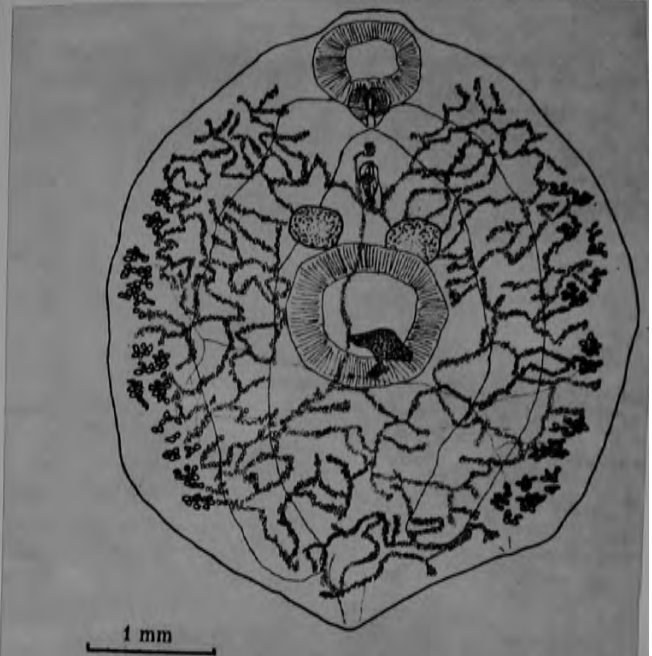


Fig. 1.—*Euparadistomum pearsoni* n. sp. Ventral view of whole mount.

midline close to this organ. The uterine coils are distributed throughout the body of the worm, and reach forward almost to the oral sucker; they are not clearly arranged in ascending and descending loops. The uterine pore lies immediately anterior to the cirrus sac.

The follicular vitellaria are extracaecal in position and occupy the middle half of the lateral fields; they are not divided into anterior and posterior groups as in some species and form a continuous band forward to the level of the cirrus sac. The eggs are operculate, yellow to brown in colour and measure 0.35-0.52 × 0.18-0.26; the majority average 0.18 × 0.45 in size.

The new species is named after Dr. John Pearson of the University of Queensland, who has worked extensively on the Trematoda and who has aided in the diagnosis of many helminth specimens from our laboratory.

Host : Domestic cat

Location : Gall bladder

Locality : Gemo Is. (Papua)

Types : In the helminthological collection of the British Museum (1969.7.8. 1-2). Specimens are also held at the Veterinary School, University of Queensland.

FROM TALBOT, 1970

RELATIONSHIPS

The members of the genus *Euparadistomum* have in common a seminal receptacle, median genital pore and preacetabular branches of the uterus. Table I provides a list of all valid species of this genus up to the present time.

Buckley and Yeh were able to differentiate *E. heischi* of the cat from the other recognized species on the ratio of testes size to the diameter of the ventral sucker, it being the only member having a ratio of 1:1. By this feature alone *E. pearsoni* may readily be differentiated from the former; many other morphological differences however exist.

Because of the wide host range exhibited by this genus it is however necessary to differentiate *E. pearsoni* from the remaining seven species. Singh (1958) in his description of *E. buckleyi* has devised a key based partly on morphological characters and partly on host differences. This latter characteristic is inadequate, and a revised key is provided below based solely on morphological grounds and including the two new species *E. francolini* and *E. pearsoni*. *E. zonari* described from an African lizard, although included by Singh is not regarded as a valid member of the genus *Euparadistomum* owing to its restricted uterine coils and is therefore omitted.

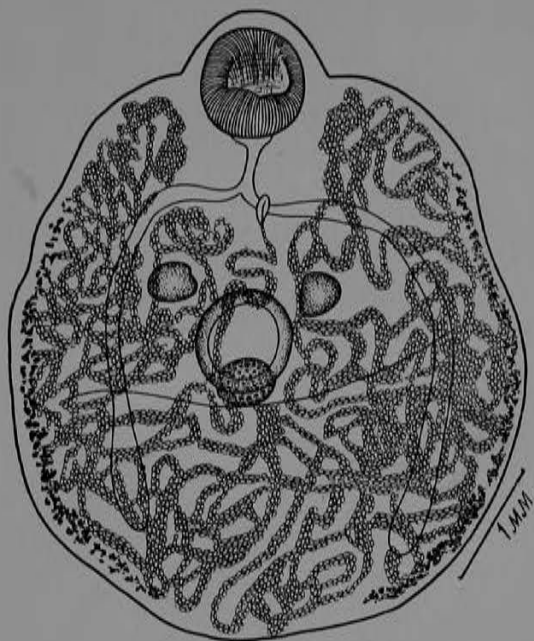
On the basis of overall morphology *E. pearsoni* closely resembles *E. paraense* described from the gall bladder of the opossum *Caluromys philander* (L) in Brazil. The two differ however in the shape of the ovary and extent of the vitellaria along the lateral margins. Jansen has also described the presence of punctiform cuticular papillae in *E. paraense*, none of which has been described from any of the other species.

FROM TALBOT, 1970

Euparadistomum pipistrelli (Sandground, 1937)

Syn.: Dictyonograptus pipistrelli Sandground, 1937
Evandrocotyle pipistrelli (Sandground, 1937) Jansen, 1941

Host: Pipistrella nana



Euparadistomum zonuri (Mahan, 1939)

Syn.: Paradistomum zonuri Malan, 1939

Host: ~~Paradistomum zonuri~~ Zonurus cordylus va. flavus
va. niger



LOOSE LEAF ORGANIZER

SCHEDULE

PERIOD OR TIME								
COURSE MON. INSTRUCTOR								
COURSE TUE. INSTRUCTOR								
COURSE WED. INSTRUCTOR								
COURSE THU. INSTRUCTOR								
COURSE FRI. INSTRUCTOR								
COURSE SAT. INSTRUCTOR								

NAME _____

ADDRESS _____

SCHOOL _____ TELEPHONE _____

Eurytrematini n. trib.

Tribe diagnosis. — Dicrocoeliinae, Dicrocoeliinae: Body fusiform or more elongate. Oral sucker subterminal or terminal, prominent or not. Esophagus very short, ceca terminating near posterior extremity or at some distance from it. Acetabulum large or small, in anterior or middle third of body. Testes symmetrical, immediately postacetabular. Genital pore at varying levels between two suckers. Ovary submedian, in anterior or middle third of body. Vitellaria variable in extent. Uterus may intrude into forebody. Excretory vesicle with transverse or oblique arms.

Key to genera of Eurytrematini ¹⁾ IN BIRDS

1. Body oval to elliptical; suckers close to each other; vitellaria moderately extensive *Lubens*
Body fusiform to lanceolate 2
2. Acetabulum within anterior third of body
 - a) Acetabulum definitely larger than oral sucker *Zonorchis*
 - b) Acetabulum subequal to oral sucker *Platynosomum*
- Acetabulum apart from anterior extremity by one third of body length or more
 - a) Acetabulum much larger than oral sucker; vitellaria limited in extent; cirrus pouch immediately preacetabular *Concinnum*
 - b) Acetabulum subequal to oral sucker
 - i) Vitellaria largely in middle third of body *Skrjabinus*
 - ii) Vitellaria largely postequatorial *Conspicuum*

¹⁾ The type genus of this tribe is represented from mammals (loc. cit.)

Key to genera of Eurytrematini IN MAMMALS

1. Vitellaria extending nearly whole length of ceca; uterine coils confined to hindbody *Dictyonograptus*
Vitellaria less extensive 2
2. Vitellaria commencing at level of acetabulum or testes ... 3
Vitellaria posttesticular, more limited in extent 6
3. Acetabulum enormous, testes wide apart; uterus strongly convoluted in forebody *Canaania*
Acetabulum not enormous; testes not wide apart; uterus not strongly convoluted in forebody 4
4. Acetabulum definitely larger than oral sucker, close to anterior extremity *Zonorchis*
Acetabulum not definitely larger than oral sucker, not close to anterior extremity 5
5. Vitellaria largely pre-equatorial; *Skrjabinus*
Vitellaria largely postequatorial *Conspicuum*
6. Acetabulum usually definitely larger than oral sucker, nearer to equator than to anterior extremity; vitellaria postequatorial, genital pore prebifurcal *Concinnum*
Acetabulum subequal to oral sucker, nearer to equator than to anterior extremity; vitellaria largely post-equatorial; genital pore postbifurcal *Eurytrema*
Acetabulum subequal to oral sucker, at about middle of anterior half of body; vitellaria equatorial; genital pore bifurcal *Platynosomum*

Eurytrema Looss, 1907

Generic diagnosis. — Dicrocoeliidae, Dicrocoelinae, Eurytreminae. Body broad, flattened oval to fusiform or pyriform, may be produced backward into a conical process (tail cone). Oral sucker subterminal. Esophagus short, ceca terminating short of posterior extremity. Acetabulum well apart from oral sucker, subequal to it. Testes symmetrical, intercecal, immediately postacetabular. Cirrus pouch elongate, preacetabular. Genital pore bifurcal or postbifurcal. Ovary submedian, in middle third of body. Vitellaria medial or lateral to ceca at about middle third of body. Uterus strongly convoluted, occupying most of posttesticular region. Excretory vesicle tubular, with more or less transverse arms, the outer end of which divides into an anterior and a posterior branch. Parasitic in bile duct or bladder or ductus pancreaticus and intestine of mammals.

Genotype: *E. pancreaticum* (Janson, 1889) Looss, 1907 (Pl. 87, Fig. 1057), in sheep; Japan. Also in *Bos taurus*, *B. indicus*, *Sus scrofa domestica*, *Camelus bactrianus*, *Buffelus bubalis*, *Capra hircus*, *Lepus coreanicus* and man; Asia.

Euloia lantzi; Kazakhstan — Skvortsov and Volk (1949). Stumpy-tailed xiphidiocercaria developed in *Bradybaena similaris simpsoni* fed on eggs from adult — Miyata (1944). Morphology of cercaria (from *Bradybaena similaris* and *Cathaica ravidia sieboldiana*) described in detail; penetration glands of each side in two separate groups, anterior group consisting of four cells, posterior group of five cells; flame cell formula of $2 \times 6 \times 2$ type. It is not known whether or not a second intermediate host is required — Tang (1962).

Key to species — Skrjabin and Litvinova (1933).

Other species:

- E. coelomaticum* (Giard et Billet, 1892) Looss, 1907, syn. *Platynosomum arietis* Travassos, 1918; *E. dajii* Bhalerao, 1924; *E. ovis* Tubangui, 1925, syn. of *pancreaticum* — Chen (1937), in pancreas, rarely in bile ducts, of *Bos taurus*, *B. indicus*, *Capra hircus*, *Ovis aries*, *Camelus bactrianus*; Europe, Asia and South America.
- E. dajii* Bhalerao, 1924, syn. of *E. pancreaticum* — Chatterji, 1938 in *Bos indicus*, *B. bubalus*; Burma.
- E. parvum* Senoo, 1907, in pancreas of *Bos taurus*; Japan, young form of *E. coelomaticum*.
- E. rebelle* Railliet, 1925, in ductus pancreaticus of *Canis familiaris*; Indochina.
- E. satoi* Kobayashi, 1915, in *Macacus cynomolgus*; Japan. It differs

distinctly from either *E. pancreaticum* or *coelomaticum* in egg size.

- E. tonkinense* Galliard et Dang-Van-Ngu, 1941, in *Bos taurus*; Tonkin.

Genus Eurytrema Looss, 1907, emend. Denton

Generic diagnosis:

Dicrocoeliinae. With the characters of the subfamily. Body rather muscular and capable of much elongation and contraction, thus varying in shape from elongated oval or spindle-shape to broadly oval. Cuticle thin, sometimes transversely wrinkled. usually unarmed but some species reported as having dermal scales or fine spines. Suckers strongly muscular, acetabulum as large as or larger than oral sucker and situated preequatorially. Ceca variable in width, slightly sinuous, terminating posterior to vitellaria. Testes variable in size, round or oval to deeply lobate in shape, opposite or slightly oblique, entirely or partly within acetabular zone or immediately posterior to it. Ovary oval to irregular in outline, usually preequatorial, submedial to lateral, relatively close behind the respective testis. Vitellaria very variable, both in extent and in number and size of follicles, but not extending anterior to cephalic margin of acetabulum. Genital pore median, varying in position from anterior level of pharynx to just posterior to intestinal bifurcation. Parasitic in liver, gall bladder, pancreas and their ducts, and in the intestine (?) of birds and mammals.

Type species: Eurytrema pancreaticum (Janson, 1899)

Dicrocoeliidae

Genus Eurytrema Looss, 1907 syn: Connicinum

Diag.: Dicrocoeliinae. Body thick and broad except the posterior portion, which shows triangular, sharp projections (tail papillae). Body smooth. Suckers very large and protruded. Oral sucker completely ventral. Testes lateral, separate, and lying at the same height. Cirrus sac thick, almost cylindrical, with a long but rather thick seminal vesicle and a similarly long and thin ductus ejaculatorius. Both coiled. Other organs similar to Dicrocoelium.

Hosts: Mammals, especially Ungulates; pancreatic duct.

Type species: Eurytrema pancreaticum (Janson, 1889).

E. epomopsis Sandground, 1937

Eurytrema pancreaticum (Janson, 1889) Looss, 1907

Синонимы: *Distomum pancreaticum* Janson, 1889; *Distomum (Dicrocoelium) pancreaticum* (Janson, 1889) Railliet, 1893; *Dicrocoelium pancreaticum* (Janson, 1889) Railliet et Marotel, 1898; *Eurytrema (Pancreaticum) pancreaticum* (Janson, 1889) Bhale-
rao, 1936, pro parte

(Рис. 107—111)

Хозяева: крупный рогатый скот, буйвол, овца, коза, двугорбый верблюд.

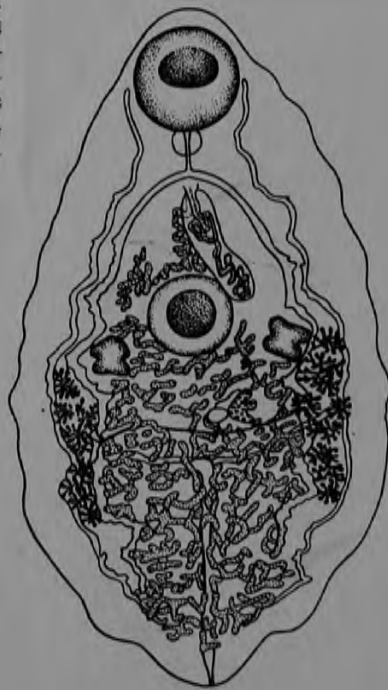
Локализация: поджелудочная железа и (случайно) печень.

Места обнаружения: Индо-Китай, Япония, СССР; Южная Америка (Бразилия). В СССР паразит зарегистрирован в Казахстане у крупного рогатого скота, овец (Боев, Вольф, 1934) и двугорбого верблюда (Раевская и Баданин, 1933) и в бывшем Дальневосточном крае у крупного рогатого скота и овец (во Владивостоке — Скрыбным и Шульцем, 1928).

Частота обнаружения. Вольф (1934) обнаружила этот вид у всех девяти голов крупного рогатого скота, обследованных ею методом полных вскрытий на бойне в г. Алма-Ата. В отдельных случаях количество паразитов доходило до нескольких сот экземпляров.

Описание вида (по Раевской и Баданину, 1933). Средней величины, толстые, широкие трематоды белого цвета, овальной формы, с большими, чрезвычайно мышечными сильно выступающими, круглыми присосками; живые экземпляры яркочерного цвета. Ротовая присоска значительно больше брюшной. Соотношение размеров присосок 7 : 4. Ротовая присоска субтерминальная, брюшная расположена так, что ее задний край лежит почти на середине длины тела. Длина тела пресованных экземпляров колеблется в пределах от 15 до 18 мм, наибольшая ширина — от 6 до 8 мм. Диаметр головной присоски равен 2,80—3,04 мм; просвет ее имеет форму овала с длинной осью, расположенной в поперечном направлении по отношению к длине тела; ширина просвета 1,4—1,7 мм, высота его 1,1 мм. Глубина полости присоски равна 1,25 мм. Небольшой фаринкс отчасти прикрыт ротовой присоской; длина его 0,625—0,70 мм; пищевод незаметен. Повидимому, сразу от фаринкса начинаются кишечные стволы, слегка волнообразно изгибающиеся и слепо заканчивающиеся на расстоянии 1,5—2,0 мм от заднего конца тела. Брюшная присоска правильно круглой формы; диаметр ее равен 1,56—1,87 мм. Семенники овальные или с вырезанными краями, расположены симметрично по сторонам брюшной присоски или на уровне ее заднего края. Половая бурса удлинненно-овальной формы, 2,00—2,22 мм длины, 0,5—0,8 мм максимальной ширины; лежит она между брюшной присоской и бифуркацией кишечника; длинная ось половой бурсы направлена несколько косо по отношению к продольной оси тела, причем передний конец ее лежит медианно, а задний субмедианно. Благодаря этому, прямые *vasa efferentia* неравной длины; *vas deferens* образуется уже в полости половой бурсы и почти сразу же переходит в семенной пузырек. Половые отверстия открываются медианно позади бифуркации кишечника.

For life cycle see Life Cycle Notebooks



Eurytrema alveyi Martin et Gee, 1949

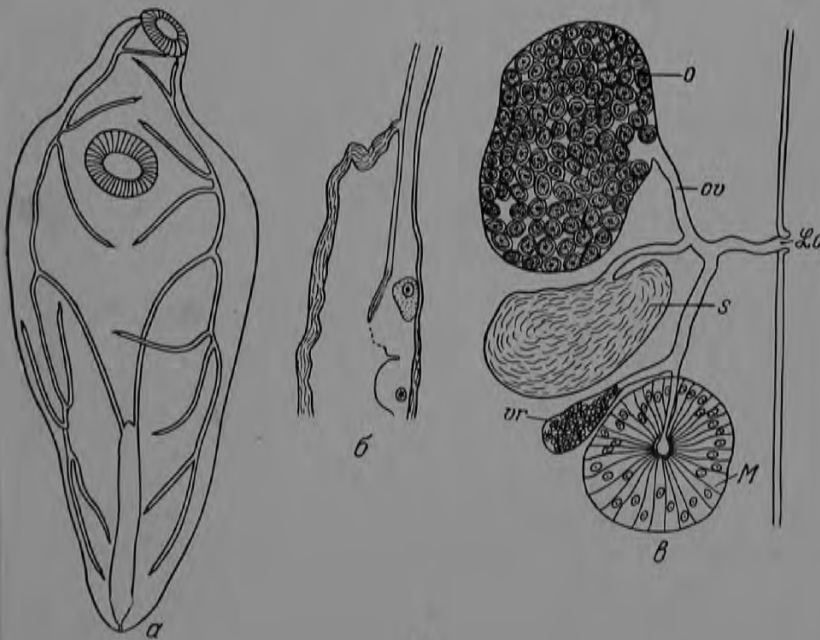
(Рис. 112 и 113)

Хозяин: птица *Junco hiemalis hiemalis*.

Локализация: желчный пузырь.

Место обнаружения: США

Описание вида (по Мартину и Ги, 1949). Живые паразиты светлорозового цвета; присоски тоже розовые, но несколько более интенсивно окрашенные, чем остальное тело. Кишечные стволы окрашены содержащейся в них желчью в яркожелтый цвет. В передней части тела кутикула покрыта мелкими сосочками, но помимо этого не вооружена. Тело сплюснутое, веретеновидное, достигает максимальной ширины на уровне гонад. Длина тела пяти измеренных экземпляров 2,61—4,67 мм, в среднем 3,51 мм, при ширине 1,13—1,84 мм, в среднем 1,5 мм. Субтерминальная или почти терминальная ротовая присоска, приблизительно круглой формы, достигает 0,345 мм в диаметре. Брюшная присоска в длину 0,32—0,49 мм при ширине 0,43—0,59 мм, т. е. ширина ее обычно больше длины. Длина фаринкса превышает ширину, причем размер его 0,13—0,24 × 0,06—0,15 мм. Пищевод обычно одинаковой длины с фаринксом или несколько длиннее последнего. Бифуркация кишечника находится на середине расстояния между обеими присосками; кишечные стволы довольно длинные, но обычно не достигают заднего конца тела. На срезах видно, что стенки кишечных стволов неровные, с маленькими, направленными латерально карманами.



113



112

Eurytrema coelomaticum (Giard et Billet, 1892) Looss, 1907

Синонимы: *Distoma coelomaticum* Giard et Billet, 1892; *Distoma (Dicrocoelium) coelomaticum* (Giard et Billet, 1892) Railliet, 1893; *Dicrocoelium coelomaticum* (Giard et Billet, 1892) Railliet, 1896; *Platynosomum arietis* Travassos, 1918; *Dicrocoelium lanceatum* в понимании Мак Каллюма (1921); *Eurytrema arietis* (Travassos, 1918) Pinto et Almeida, 1935; *Eurytrema (Pancreaticum) pancreaticum* (Janson, 1889) Bhalerao, 1936, pro parte; *creaticum*.

(Рис. 114 и 115)

Хозяева: крупный рогатый скот и двугорбый верблюд.

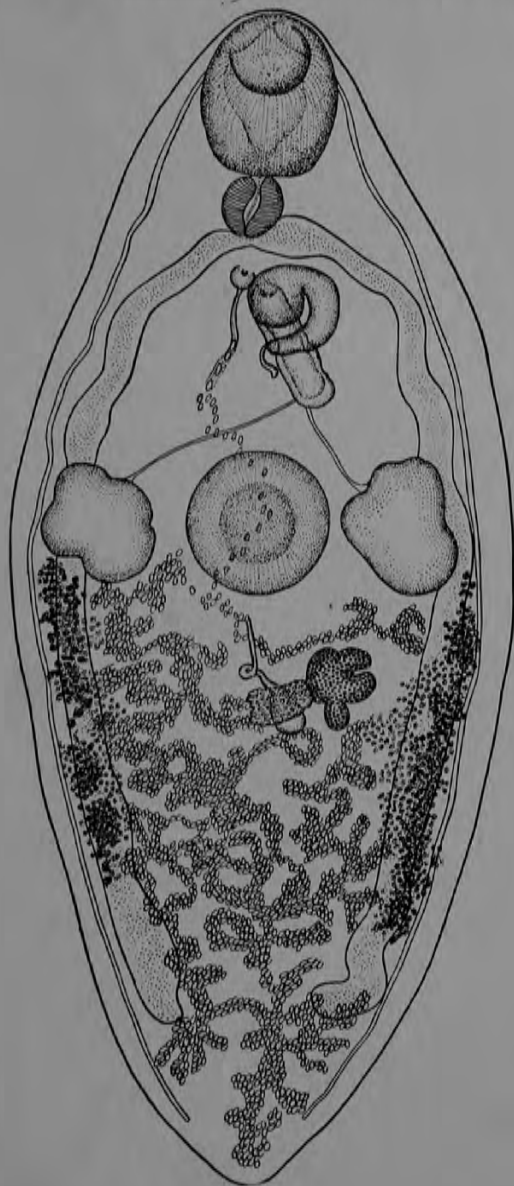
Локализация: поджелудочная железа.

Место обнаружения: Индо-Китай, Китай и СССР (Казахстан).

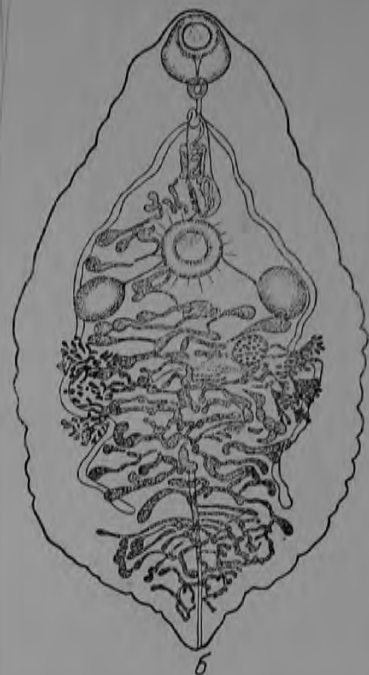
В СССР зарегистрирован в Казахстане у крупного рогатого скота (Вольф, 1934) и верблюдов (Раевская и Баданин, 1933).

Частота обнаружения: Вольф обнаружила на бойне г. Алма-Ата этот вид в пяти случаях из общего числа девяти голов крупного рогатого скота, подвергнутых полному гельминтологическому вскрытию.

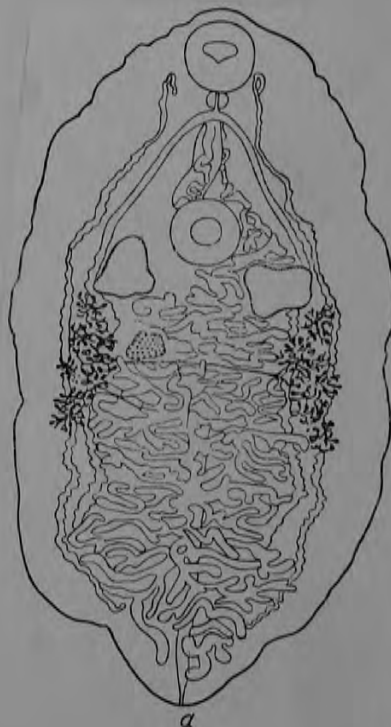
О п и с а н и е в и д а (по Раевской и Баданину, 1933). Эти трематоды в несколько раз меньше *E. pancreaticum*; длина тела 4,95—6,00 мм, наи-



114



б



а

115

Eurytrema cuyabai Travassos, 1922

Length --- 6 mm.

Width --- 2 mm.

Cuticle with sparse, poorly visible and very small spines.

Ventral sucker smaller than oral sucker, 0.38 mm in diameter, pre-equatorial.

Oral sucker about 0.41 mm in diameter.

Pharynx 0.17 mm in diameter.

Esophagus slender, 0.39 mm long.

Ceca slender, long, ending near posterior end.

Genital pore pre-bifurcal.

Cirrus sac small.

Testes rounded, pre-equatorial, in same zone, their fields separated.

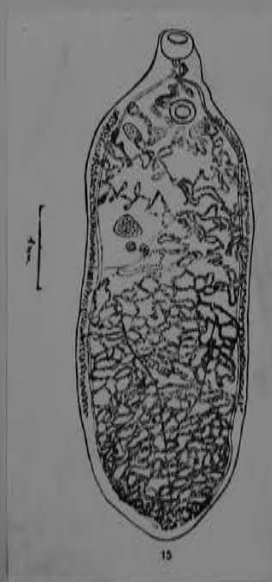
Ovary rounded, pre-equatorial, lateral, zone distant from testes, field coinciding with one of the testes.

Eggs about 31 by 24 μ .

Vitellaria in cecal area, of small follicles, from acetabular zone to far below ovary but end considerably in advance of ends of ceca.

Host: bile ducts of Xanthornus croconotus

This species is a
synonym of E. intermedium
Trav., 1919
according to Bhalerao, 1936

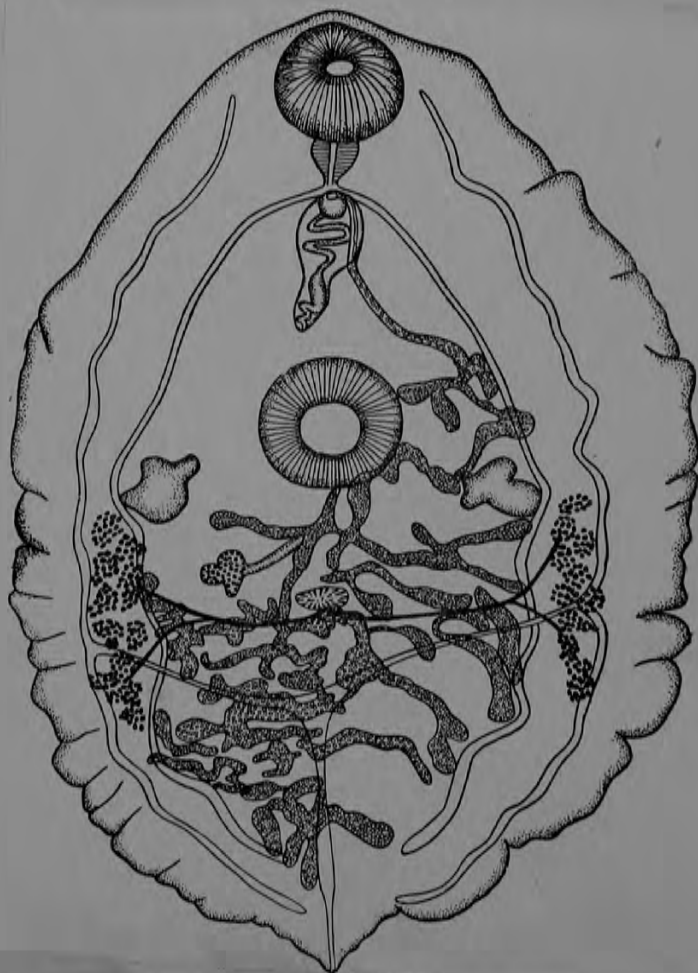


Хозяин: зебу (*Bos indicus*).

Локализация: желчные протоки печени.

Место обнаружения: Индо-Китай (Бирма).

Описание вида (по Балерао, 1924). Длина тела 5,0—6,7 мм при ширине 3,5—4,0 мм. Кутикула покрыта мелкими шипиками. Максимальная ширина тела на уровне яичника и несколько позади последнего. Задняя часть тела оканчивается коротким заостренным хвостовым придатком. Диаметр ротовой присоски достигает 0,75 мм. Диаметр брюшной присоски 0,85 мм. Расстояние между центрами ротовой и брюшной присосок несколько меньше половины длины тела. Фаринкс 0,25 × 0,22 мм. Длина пищевода 0,05 мм. Задние концы кишечных стволов располагаются на расстоянии 0,8 мм от заднего конца тела. Половые отверстия располагаются непосредственно позади бифуркации кишечника. Половая бурса 1,0 мм длины при ширине 0,38 мм. Дно половой бursы не достигает переднего края брюшной присоски. Семенники 0,40—0,56 мм длины и 0,22—0,35 мм ширины. Они прилегают к кишечным стволам и располагаются несколько позади брюшной присоски. Форма семенников большей частью четырехлопастная. Яичник меньше семенников, 0,22—0,30 мм длины и 0,17—0,25 мм ширины. Он располагается в правой половине тела позади семенников, форма яичника трехлопастная. Дорзально от яичника локализуется круглый семяприемник, достигающий 0,16—0,19 мм. Лауреров канал имеется, однако выводной его проток облитерирован, что является одним из характернейших признаков этого вида. Матка концентрируется в задней половине тела, в промежутке между кишечными стволами. Небольшая группа петель матки располагается впереди от брюшной присоски в левой половине тела. Желточники слабо развиты, состоят из 10—13 групп фолликулов. Начинаются желточники на уровне заднего края семенников кнаружи от кишечных стволов. Задняя граница желточников на уровне середины расстояния между задним краем брюшной присоски и задним концом тела. Яйца достигают 0,032—0,040 мм длины при ширине 0,022—0,027 мм.



Dicrocoeliidae

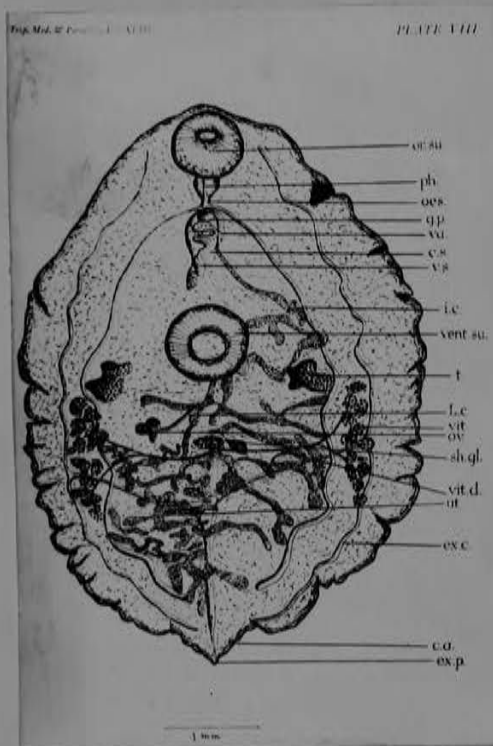
Eurytrema dajii Bhalerao, 1924

5. to 6.7 by 3.5 to 4 mm.
Cuticle covered with scales.
Caudal appendage well developed.
Ventral sucker slightly larger than oral.
Genital pore posterior to bifurcation
Cirrus sac not reaching margin of acetabulum
Vitellaria of 10 to 13 groups from level of testes
to half the distance between ventral sucker and
proximal end of caudal appendage

Host: Bos indicus , bile ducts

Locality: Rangoon, India

Reference: Ann. Trop. Med. Parasit., 18:139-156

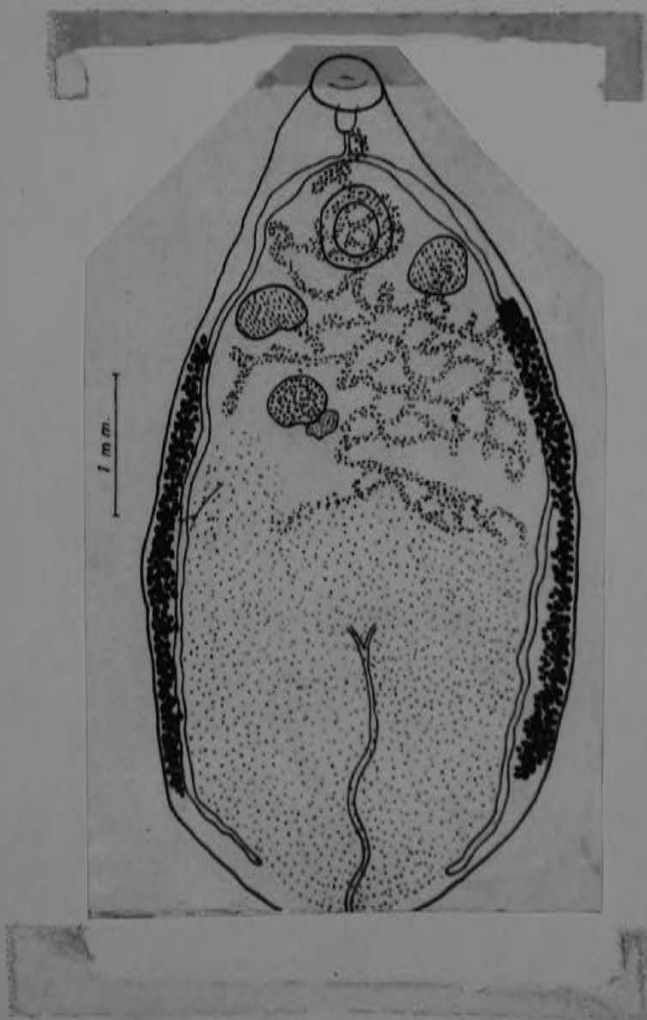


Dicrocoelidae

Eurytrema intermedium Travassos, 1919

Syn. Eurytrema cuyabai Trav., 1922 (according to Bhalerao, 1936)

6 to 7 by 3.5 to 4 mm.
Oral sucker 0.5
Acetabulum 0.6
Pharynx 0.19
Genital pore anterior to bifurcation
Testes rounded, postacetabular
Cirrus sac small
Ovary shaped like testes, preequatorial
Vitellaria extracecal from testicular zone past equator
Eggs 28 to 35 by 21 to 28 μ
Host: Frongue chalybea (bird ?)
in gall bladder
Locality: Brazil
Reference: Arch. Exc. Agai. Med. Vet., 3:21. 1919



Eurytrema komareki McIntosh, 1939

No. 1]

HELMINTHOLOGICAL SOCIETY

19

Eurytrema komareki, n. sp.

Description.—Body oblong, 2.82 mm long by about 800 μ wide at ovarian level; the extremities, in some specimens, taper greatly. Cuticula without spines. Oral sucker subterminal, 200 μ in diameter; acetabulum preequatorial, 320 μ by 350 μ . Pharynx about 100 μ in diameter; esophagus longer than pharynx; intestinal caeca extending posteriorly beyond vitellaria and terminating near posterior end of body. Excretory pore terminal, the long Y-shaped bladder forking near equatorial level of body. Testes from almost spherical to elongate oval, 90 to 200 μ in diameter with fields well separated and zones overlapping posterior rim of acetabulum. Cirrus sac 140 μ long by 50 μ wide, ventral to esophagus; cirrus protruding in type specimen; genital pore median, at basal level of pharynx.

Ovary oval, 130 to 140 μ in diameter, lateral to median line, preequatorial. Seminal receptacle 70 μ by 85 μ ; Laurer's canal not observed; vitelline reservoir and Mehlis' gland median, preequatorial. Vitellaria extracecal, extending from within zone of acetabulum and terminating in anterior portion of posterior third of body. Uterus confined to intercecal area, with coils extending posteriorly to beyond ceal tips. Eggs oval, 23 μ by 30 μ , lemon yellow.

Habitat.—Liver (?) of *Peromyscus gambianus* *possipinus*.

Distribution.—Okfenokee Swamp, Georgia, U. S. A.

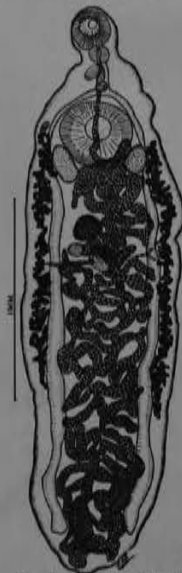
Specimens.—U.S.N.M. Helm. Coll. Nos. 43414 (type; Fig. 1), 40884 and 43415 (paratypes).

The species described herein is assigned to the genus *Eurytrema* Looss, 1907, as most of the characters of the species are typical of that genus. The shape of the body, with greatest width preequatorial, however, is typical, of the genus *Platynosomum* Looss, 1907, which, according to many recent writers, is not sufficiently different from *Eurytrema* to be regarded as a distinct genus. The large acetabulum in comparison with the small oral sucker is characteristic of the genus *Oswaldoia* Travassos, 1919, but the position of the testes and the location of the genital pore would exclude the species from that genus as now defined.

In a recent paper Bhalerao (1936, Jour. Helminth. 14: 163-180) proposed the division of the genus *Eurytrema* into 5 subgenera. According to Bhalerao's key, *E. komareki*, n. sp. has characters in common with the group of 3 species constituting the subgenus *Lubens* Bhalerao, 1936, namely, *Eurytrema lubens* (Braun, 1901), *E. polymorphum* Travassos, 1919, and *E. intermedium* Travassos, 1919. In these 3 species the acetabulum and oral sucker are about equal in size, while in *E. komareki*, n. sp. the acetabulum is much larger than the oral sucker.

FIG. 1. *Eurytrema komareki*, n. sp., dorsal aspect.

In connection with Bhalerao's paper it may be noted that if his subgenera are to be accepted the name *Eurytrema* must be retained for the typical subgenus instead of the subgeneric name *Pancreaticum* as proposed by that author.



Eurytrema ludoviciana n. sp. Petri, 1942
(Fig. 1)

Host: *Zamelodia ludoviciana* (Linn.), rose-breasted grosbeak.

Location: Liver.

Locality: Lincoln, Nebraska.

Number: Eight taken from one host.

Specific diagnosis. Body smooth, oval, showing characteristic small projections at posterior end in most specimens; anterior end rounded. Length 3.0 to 4.0 mm.; maximum width (at about middle of body length), 1.1 to 1.34 mm. Oral sucker subterminal, 0.314 to 0.393 mm. in transverse diameter. Acetabulum preequatorial, musculature very weak, about $\frac{1}{3}$ body length from anterior end, 0.550 to 0.754 mm. in transverse diameter, somewhat longer than wide; sucker ratio approximately 1:2. Pharynx 0.126 to 0.134 mm. long by 0.079 to 0.094 mm. wide. Esophagus short, about 0.079 mm. long; ceca narrow, posterior extremity about 0.5 mm. from posterior end of body.

Testes oval to almost spherical, symmetrical, just posterior to acetabulum. The size of the testes varies a great deal, in some cases smaller and in some cases larger than the ovary; contour more or less smooth, varying in size from 0.126 to 0.440 by 0.094 to 0.377 mm. Genital pore in mid-line, at or slightly anterior to intestinal bifurcation. Cirrus sac elongate, cylindrical, tapering toward posterior end; posterior portion in some cases overlapping

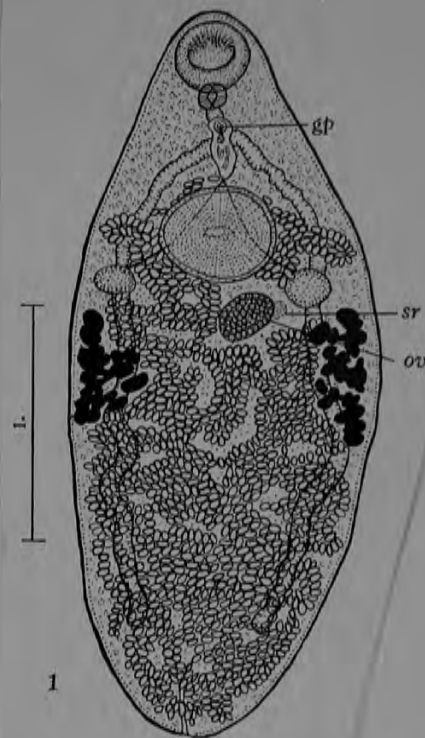
anterior portion of acetabulum, average size in eight specimens 0.273 mm. long by 0.116 mm. wide, containing coiled seminal vesicle and ductus ejaculatorius.

Ovary ovoid, very slightly lobed in a few cases, posttesticular, a little to right or left of mid-line, 0.235 to 0.314 by 0.141 to 0.204 mm. Seminal receptacle in close contact with the ovary, slightly to the left. Vitellaria consisting of large, pyriform to club-shaped follicles, in lateral rows immediately posterior to the testes, mostly extracecal, but also overlapping ceca, not extending past anterior half of body. Uterus overlapping ceca and occupying almost $\frac{2}{3}$ body length. It completely fills postovarian region and then passes between the two testes anteriorly dorsal to acetabulum. Eggs oval, thick shelled, 49 to 52 μ in length by 30 to 34 μ in width, average about 50 by 33 μ .

It was impossible to trace the excretory system in toto mounts. A sectioned specimen revealed that it is a long Y-shaped form branching a little posterior to the ovary. Each branch evidently runs laterally and anteriorly dorsal to the ceca where it again divides into an anterior and posterior branch which can be traced almost to the ends of the body. The excretory pore is terminal.

Comparisons. *Eurytrema ludoviciana* is most similar to *Eurytrema illiciens* (Braun, 1901). It differs from *E. illiciens* in smaller size (*E. illiciens* is 6 mm. long by 2 mm. wide, while *E. ludoviciana* is 3.0 to 4.0 mm. by 1.1 to 1.34 mm.), and in smooth testes (instead of lobed). The vitelline follicles and eggs of *E. ludoviciana* are larger (eggs of *E. illiciens* measure 36 by 22 μ as compared with 50 by 33 μ in *E. ludoviciana*). *E. ludoviciana* is also somewhat similar to *Paradistomum magnum* Travassos, 1919, but differs from it in sucker ratio, and size and shape of testes and ovary. *Paradistomum magnum* and a few other *Paradistomum* species differ from all other species in the genus by possessing narrow ceca. The author believes that these species with narrow ceca should probably be placed in the genus *Eurytrema* since the broad ceca are so characteristic of other species in the genus *Paradistomum* as to constitute a generic characteristic. If this characteristic is not used to separate these two genera the genus *Paradistomum* is separated from the genus *Eurytrema* practically only on the basis of the host. All *Paradistomum* thus far described are taken from Reptiles. *Eury-*

trema magnum (Travassos, 1919) n. comb. is proposed as the correct name for *Paradistomum magnum* Travassos, 1919.



Eurytrema ovis Tubangui, 1925

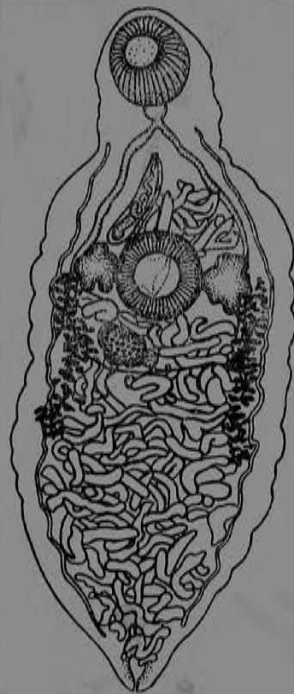
(Рис. 117)

Хозяин: овца.

Локализация: жировая ткань вокруг прямой кишки.

Место обнаружения: Филиппинские острова.

Описание вида (по Тубангуи, 1925). Тело нежное, листовидное; передний конец тела сужен и закруглен, задний конически заострен. Длина тела 10,5—12,0 мм при максимальной ширине 4,6—5,4 мм. Максимальная толщина паразита на уровне брюшной присоски 0,7 мм. Ротовая присоска 1,5—1,7 × 1,3—1,6 мм, брюшная присоска 1,3—1,5 × 1,4—1,6 мм. Расстояние между центрами ротовой и брюшной присосок 3,5—4,0 мм. Диаметр фаринкса 0,3—0,5 × 0,3—0,4 мм. Пищевод очень короткий, нередко отсутствует. Кишечные стволы отстоят от заднего конца тела на расстоянии 1,5—1,7 мм. Симметрично расположенные семенники имеют



Eurytrema procyonis, n. sp. (Trematoda: Dicrocoeliidae), from the raccoon,
Procyon lotor. J. FRED DENTON, The Rice Institute, Houston, Texas.

During the winter of 1940-41 Mr. Rollin H. Baker, Field Biologist with the Texas Game, Fish and Oyster Commission, sent to the writer for parasitological examination the carcasses of 10 raccoons collected near Lufkin, Angelina Co., Texas. Six of the 10 animals examined harbored in the interlobular ducts of the pancreas from 12 to more than 1000 specimens of an undescribed trematode belonging to the genus *Eurytrema* Looss, 1907.

Eurytrema procyonis, n. sp.

Description.—Body flat and foliaceous with entire margins, 1.70-2.54 mm long by 0.73-1.32 mm wide at middle of vitellaria. Cuticle without spines, smooth and very thin, and with small retractile sensory papillae, visible on lateral margins of anterior portion of body. Oral sucker, 0.150-0.210 mm long by 0.164-0.231 mm wide, subterminal, preceded dorsally by a short lip-like projection. Acetabulum weakly muscular, 0.245-0.325 mm in diameter, situated at junction of anterior and second body-fourths. Ratio of width of oral sucker to acetabulum 1:1.3. Pharynx large, globular, 0.105-0.133 mm long by 0.126-0.164 mm wide. Esophagus usually slightly curved, 0.120-0.161 mm long, bifurcating about midway between the suckers. Ceca wide and voluminous, slightly wavy, passing lateral to margins of acetabulum and testes, medial to the vitellaria to terminate within posterior fifth of body.



FIG. 1. *Eurytrema procyonis*, n. sp., ventral view.

Excretory pore terminal, excretory vesicle simple tubular, extending anteriorly for about $\frac{1}{3}$ of distance to Mehlis' gland to receive a common collecting tubule from each side of body. Each common collecting tubule passing antero-laterally to divide into an anterior and posterior main collecting tubule opposite anterior margins of testes. Remainder of excretory system not observed. Genital pore usually median at intestinal bifurcation. Testes elongated, irregular to slightly lobed in outline, 0.175-0.415 mm long by 0.147-0.235 mm wide, situated directly opposite with their fields close together and their zones partly overlapping that of acetabulum or immediately posterior to it. Vasa efferentia arising from dorso-medial margins of testes and passing anteriorly and medially to unite as they enter cirrus pouch. Cirrus sac large, elongated oval, 0.210-0.390 mm long by 0.105-0.180 mm wide, containing a coiled seminal vesicle, ductus ejaculatorius and eversible cirrus, extended usually posteriorly to equator of acetabulum. Ovary round to oval in shape, 0.065-0.122 mm in greatest diameter, situated sub-medially close behind the respective testis. Seminal receptacle globular, 0.045-0.085 mm in diameter, located anterior to, dorsal to, medial to or posterior to ovary. Mehlis' gland relatively large and diffuse, situated posterior to and on opposite side of body from ovary. Laurer's canal opening on mid-dorsal surface at posterior level of testes. Vitellaria composed of numerous small rounded follicles massed into grape-like bunches, mainly extra-cecal, situated immediately posterior to caudal level of tests. Uterus convoluted, but with relatively few loops, filling most of posttesticular region of body, then passing between testes and dorsal to acetabulum to genital pore by a slightly undulating course. Mature ova lemon yellow, 45-53 μ long by 29-36 μ wide.

Habitat.—Pancreas.

Eurytrema parvum Senoo, 1907

Хозяин: крупный рогатый скот.

Локализация: поджелудочная железа.

Место обнаружения: Япония.

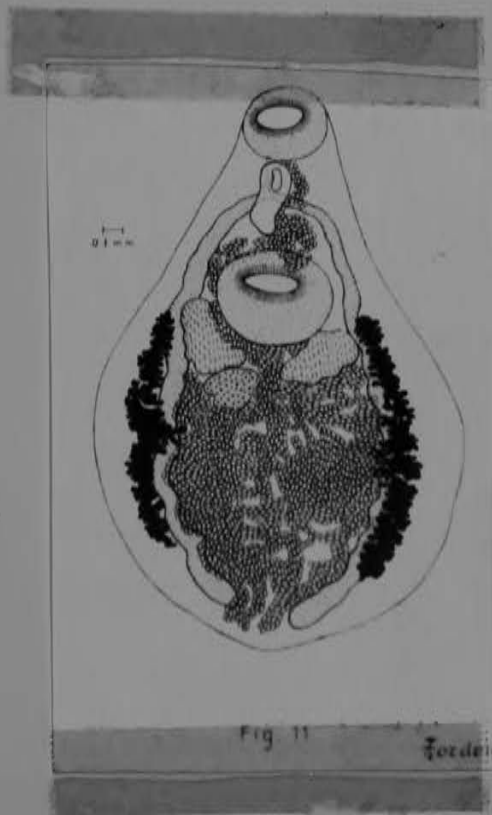
Указания об этом виде имеются в библиографических справочниках, однако его описания в нашем распоряжении не было.

Eurytrema pulchrum Travassos, 1919

3. to 3.5 by 1.5 to 2. mm.
Oral sucker about 0.43 in diameter
Acetabulum about 0.62 ; 0.53 from oral sucker.
Esophagus fairly long.
Pharynx round about 0.17 in diameter.
Genital pore median, anterior to bifurcation

Testes elongated in transverse or diagonal direction,
lobed, preequatorial.
Cirrus sac large, occupying entire zone between suckers,
0.43 by 0.17
Ovary lobed, its zone in part posterior to testes, its
field almost entire with that of the right testis.
Vitellaria extracecal or nearly so, from level of testes
almost to posterior end.
Eggs about 35 by 21 to 24 μ

Host: wild rat, in gall bladder
Locality: Brazil
Reference: Arch. Exc. Agal. Med. Vet., 3:21-22. 1919



Eurytrema rebelle Railliet, 1924

Syn.: Eurytrema (Pancreaticum) rebelle (Raill., 1924) Bhalerao, 1936
E. (Eurytrema) rebelle (Railliet, 1924) Trav., 1944

Host: ##### Canis familiaris

not illustrated in Skrjabin

Eurytrema satoi Kobayashi, 1915

Синоним: *Eurytrema (Eurytrema) satoi* (Kobayashi, 1915) Travassos, 1944
(Рис. 118)

Хозяева: млекопитающие — *Silenus irus* (Cuv), *Macacus cynomolgus*.

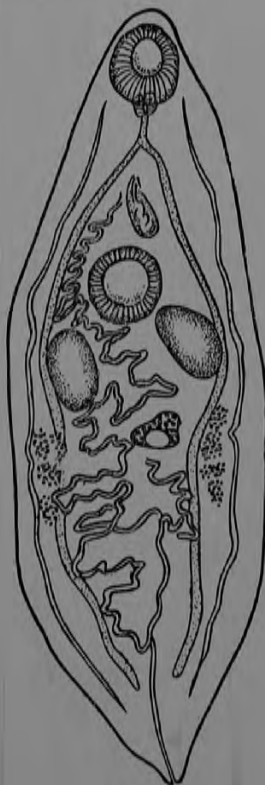
Локализация: поджелудочная железа.

Место обнаружения: Япония.

Описание вида (по Травассосу, 1944). Длина тела достигает 6—6,5 мм при ширине 2—3 мм. Тело эллипсоидальной формы, суженное у концов. Задний конец у некоторых экземпляров имеет образование в форме треугольного язычка. Кутикула гладкая. Брюшная присоска на уровне передней второй пятой части длины тела и достигает 0,55—0,60 мм. Ротовая присоска субтерминальная, диаметром 0,50—0,55 мм. Соотношение размеров присосок 1 : 1,09—1,10. Непосредственно за ротовой присоской следует фаринкс, достигающий 0,18 × 0,15 мм. Пищевод очень короткий, длиной 0,15 мм. Слегка извилистые кишечные стволы оканчиваются близ заднего конца тела. Половое отверстие находится на медианной линии, несколько позади бифуркации пищевода. Половая бурса расположена впереди брюшной присоски, слегка в сторону от медианной линии; содержит семенной пузырек, образующий 1—2 оборота; ее размер 0,7 × 0,2 мм. Семенники лежат позади и сбоку брюшной присоски заходя в цекальную область; они состоят из 3—5 лопастей и достигают 0,4—0,5 мм в диаметре. Яичник располагается сейчас же позади середины длины тела, слегка влево от медианной линии; он удлинен в поперечном направлении, его максимальный диаметр 0,18 мм. Желточники расположены в экстрацекальной области, в зоне яичника и тянутся назад, часто заходя в цекальную область. Они состоят из 3—4 групп фолликулов. Матка лежит в интрацекальной области, иногда заходит в цекальную. Восходящая ее часть проходит между брюшной присоской и левым семенником, переходя в метратерм. Многочисленные яйца с относительно толстой оболочкой достигают 0,025—0,030 × 0,018 мм. Экскреторное отверстие располагается на заднем конце тела. Экскреторный пузырь состоит из центрального ствола и двух отходящих от него под прямым углом каналов, доходящих до уровня яичника.

Этот вид очень близок к *E. coelomaticum*. Ямагути идентифицирует его с *E. pancreaticum*, однако без достаточных оснований.

Литература: Kobayashi, 1915, стр. 1 и 3; Yamaguti, 1933, стр. 126; Travassos, 1944, стр. 62—63.

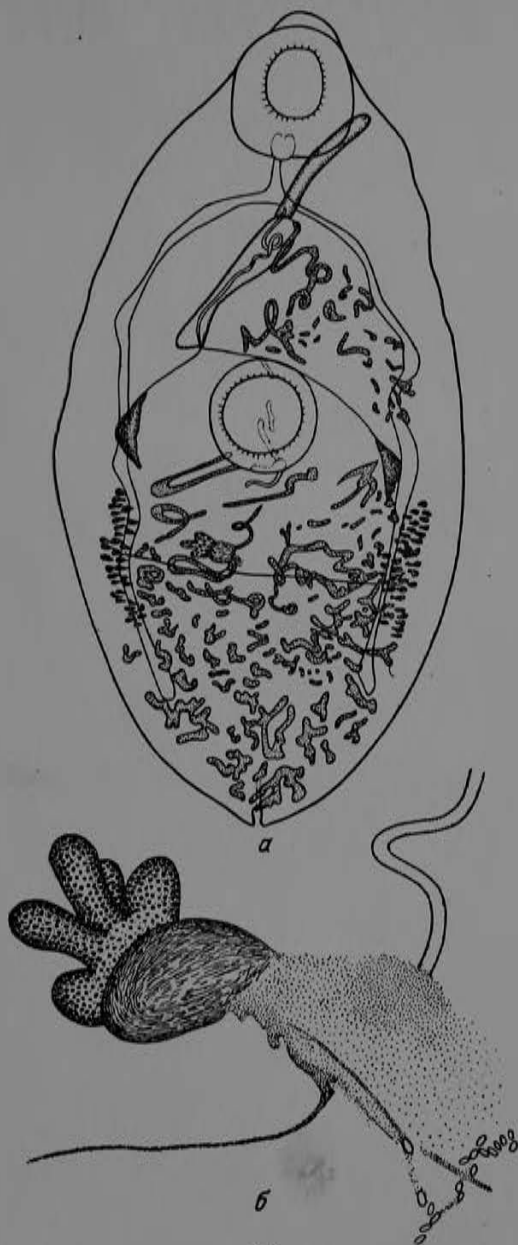


From Kobayashi,
1921

Eurytrema tonkinense Gaillard & Ngu, 1941

Host:

Сем. DICROCOELIIDAE

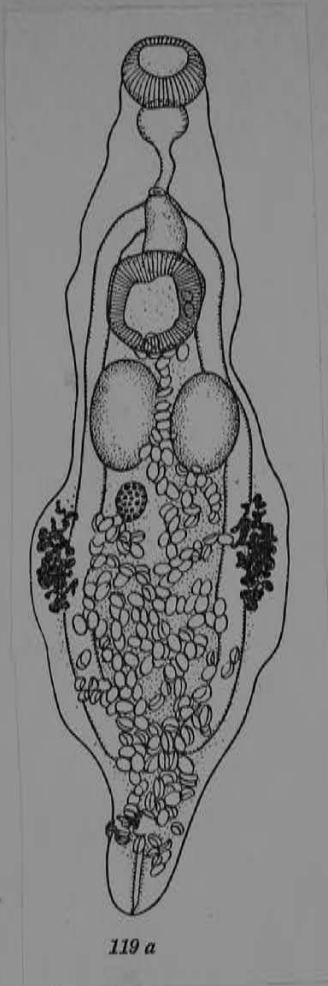


119

119. *Eurytrema tonkinense* Gaillard et Ngu, 1941 (по Гайяру и Нгу, 1941)
а — общий вид; б — женская половая система

Eurytrema vulpis Stunkard, 1947

Host: Vulpes fulva



119 a

EVR YTR EIMA

Evandrocotyle n. g. Jansen, 1941

Dicrocoelidae: Corpo redondo; acetábulo equatorial; cecos longos e largos; poro genital mediano; bolsa do cirrus com vesícula seminal enovelada; testículos intra-cecais, pre-acetabulares, com zonas cingindo e campos afastados; ovário mediano, post-acetabular ou parcialmente na zona acetabular; espermateca presente, ao lado do ovário; vitelinos extra-cecais; útero com numerosas alças pouco densas e ocupando toda a área do corpo, cecal e intra-cecal, desde a zona da ventosa oral até a extremidade posterior. Parasitos de vesícula biliar de vertebrados.

Espécie tipo: *Evandrocotyle paraense* n. sp.

Nesse gênero entra também o parasito descrito por SANDGROUND com o nome de *Dictyonograptus pipistrelli* em 1935. É bem provável que o parasito descrito por SKRJABIN & MASSINO em 1925, da vesícula biliar de *Muscicapa grisola*, com o nome de *Eurytrema koschewinikowi*, seja também incluído nesse gênero, apesar de não terem sido referidos na descrição original, nem os cecos nem o acetábulo, e ter sido mencionado um ovário lobado. Só um melhor estudo desta espécie, poderá resolver em definitivo este assunto.

Evandrocotyle paraense n. sp. Jansen, 1941

Parasitos redondos, de cor pardacenta em vida. O material fixado e comprimido, mede 5,4 a 5,6 mm. de comprimento por uma largura máxima de 4,9 a 5,3 mm. Cutícula sem escamas, porém com algumas papilas punctiformes e regularmente distribuídas. Acetábulo ligeiramente maior do que a ventosa oral, medindo nos exemplares comprimidos cerca de 1,2 a 1,7 mm. de diâmetro e situado no equador do corpo. Ventosa oral sub-terminal medindo cerca de 0,9 a

¹ Recebido para publicação a 28 de Março de 1941.
Trabalho do Laboratório de Helmintologia do Instituto Oswaldo Cruz.

de diâmetro. Pre-faringe ausente. Faringe redonda em seguida à ventosa oral, com cerca de 0,26 a 0,27 mm. de diâmetro. Esôfago estreito e curto, tendo cerca de 0,22 a 0,38 mm. de comprimento. Cecos largos e longos, aproximando-se muito da extremidade posterior do corpo. Terminam a cerca de 0,5 a 0,7 mm. da extremidade posterior. Poro genital mediano, post-bifurcal. Bolsa do cirrus relativamente pequena, contendo cirrus, próstata e vesícula seminal envelada; mede cerca de 0,38 a 0,52 mm. de comprimento por 0,10 a 0,12 de maior largura. Canais deferentes separados desde a bolsa do cirrus. Testículos pre-acetabulares com zonas coincidindo e campos muito afastados. São elipsoides, com maior eixo transversal e medem cerca de 0,33 a 0,53 por 0,15 a 0,45 de diâmetros máximos. Ovário elipsóide, transversal, situado abaixo da

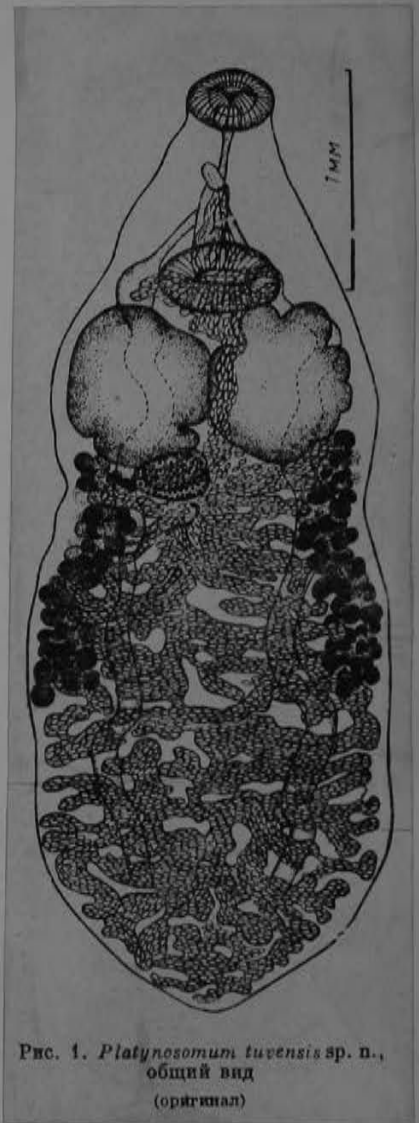


Fig. 1 — *Evandrocotyle paraense* n. sp. Aspecto total.

zona acetabular, com cerca de 0,36 a 0,76 por 0,33 a 0,61 de maiores diâmetros. Canal de Laurer presente. Glândula de Mehlis abaixo e ao lado do ovário, com cerca de 0,53 por 0,22 de diâmetro. Espermateca situada adiante da glândula de Mehlis e ao lado do ovário, medindo cerca de 0,18 por 0,26 a 0,27 por 0,38 mm. Vitelinos extra-cecais situados da zona acetabular para baixo. Cada vitelino é constituído por dois agrupamentos de foliculos volumosos e pouco numerosos ni-

Platynosomum tuvensis

Krasnolobova & Timofeeva, 1968



EVANDROCOTYLE

EXORCHOCOELIUM INDICUM N. G., N. SP.

G. S. Thapar, 1956

The worms in the living condition are whitish in colour and are elongated, oval flukes, rounded in front and bluntly pointed posteriorly. They measure 3.5 mm. in length with a maximum width of 0.89 mm. which is at about the middle of the body length. All the specimens examined were without spines, a character in which it differs from the genus *Anchitrema*. The oral sucker is larger than the ventral sucker (acetabulum) and is 0.25 mm. in diameter. The ventral sucker is situated

at the anterior third of the body and is 0.23 mm. in diameter. The mouth lies in the middle of the oral sucker and leads directly into the muscular pharynx, 0.18 mm. in diameter by 0.2 mm. in length. The oesophagus is very short, being 0.05 mm. long and divides immediately into two lateral intestinal caeca. The intestinal caeca are long and run upto the posterior end of the body where they terminate in slight bulbar enlargements.

The genital pore is situated in front of the ventral sucker between it and the intestinal bifurcation and is median in position. It is 0.13 mm. in front of the ventral sucker.

The excretory system of this form (Fig. 3.) has been very carefully studied in the living animal subjected to slight pressure of the cover glass and thus the exact relationship of the capillary tubes and flame cells and their exact number has been definitely determined. The excretory pore is situated at the posterior end and is subventral in

position. It leads into a short wide tube which divides into two long lateral tubes, one on either side. These tubes receive several secondary tubules, each of which divides dichotomously, the ultimate branches being formed of two capillaries, each terminating in a flame cell. Thus, the flame cell pattern in the present form conforms very closely to that found in the members of the family Dicrocoeliidae and represents the typical formula $2(2+2+2+2)^n$ of the family, where the mathematical exactness of the flame cell formula of the cercaria is calculated from the structure of this system in the adult.

The reproductive system of this form also agrees with the other Dicrocoeliids. It consists of two preovarial testes and a single ovary and their ducts and accessory organs.

The ovary is single and lies in the middle of the body, behind the position of the testes. It is spherical in shape and is 0.24 mm. in diameter. The oviduct arises from its left posterior end and opens into the öotype. A Laurer's canal, about 0.19 mm. long and 0.02 mm. broad, joins the öotype and extends towards the dorsal side of the worm. A small receptaculum seminis, measuring 0.42 mm. by 0.16 mm. is also present and joins here at the same point (Fig. 4).

The vitelline glands consist of a large number of small follicles, lying in the lateral field outside the intestinal caeca. They extend from



Fig. 1.



Fig. 3.

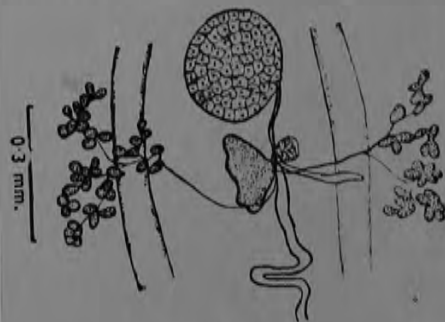


Fig. 4.

0.5 mm.
Fig. 2.

0.05 — ?

behind the testes to about 0.5 mm. in front of the posterior end of the body. On either side, they appear to form an anterior and a posterior group, each having its own duct. The two ducts of each side join to form a transverse duct on each side at about the level of the ♂otype and these in turn unite before opening into the ♀otype. A mass of shell gland cells also lies besides the ♀otype.

The uterus arises from the posterior end of the ♀otype and runs backwards forming a descending loop of convolutions, on the left side of the fluke. Posteriorly the coils of the uterus overlap a part of the intestinal caecum of its side. It then forms similar ascending transverse convolutions on the right side as far forwards as the posterior end of the ♀otype and then runs on the right side of the ovary to assume a median position in front of the ovary. Here after forming a few coils it runs forward on the left side of the acetabulum to enter the genital atrium in front.

The eggs are elongated and oval and measure 0.19 mm. in length and 0.02 mm. in breadth.

The male genitalia consist of two oval testes situated symmetrically lateral to the intestinal caeca and are postacetabular in position. They are 0.42 mm. long and 0.16 mm. broad. Anteriorly, they narrow down and become funicular in appearance. The two vasa deferentia unite to form a coiled tube, the vesicula seminalis, inside the cirrus sac. Here it passes imperceptibly into a short muscular cirrus which in turn opens in the middle of the circular cirrus sac, about 0.07 mm. in front of the ventral sucker. The cirrus sac is 0.25 mm. in diameter. A large number of prostate gland cells are present inside the cirrus sac, surrounding the coiled vesicula seminalis and the cirrus.

Discussion:—From the foregoing description, it appears that the present form represents the general characters found in the members of the family Dicrocoeliidae. The presence of preovarial testes, the disposition of the vitellaria, the presence of a distinct receptaculum seminis and the nature and disposition of the excretory system—in all these characters it is allied to the Dicrocoeliid forms. Amongst the dicrocoelids, it resembles very closely the genera *Platynosomum* and *Paradis-*

tomum. Under the genus *Platynosomum*, it shows close affinities with *P. philippinorum* in the absence of a prepharynx, in the extension of the intestinal caeca, in the position of the genital organs and in the extension of the vitelline glands. It can, however, be readily distinguished from it and all other species of *Platynosomum* in the absence of the body spines and in the shape and extension of the excretory bladder. From the genus *Paradistomum*, it differs in the shape of the cirrus sac and in the position of genital pore. It is, therefore, desirable to create a new genus, *Exorchocoelium*, for these forms.

Another point that needs clarification is the position taken by Pande (1935) in considering this form a synonym of *Anchitrema sanguineum*, without giving any reasons for doing so. He probably placed his reliance on the occurrence of the two forms in the same host, *Nycticejus kuhlii*. Anyone who would carefully study the characters indicated in the abstract of the paper given by the present author (1931) would have hesitated to make any comments. However, the detailed description given in this communication would remove any doubt about the correct systematic position of the form under discussion.

The general characters of the genus *Anchitrema* Looss, 1899 are:—

The present form differs from the above description of *Anchitrema* in the complete absence of the body spines, in the presence of a distinct cirrus sac and the presence of a receptaculum seminis—the characters that have been italicised in the above description of *Anchitrema* to bring out clearly the differences as distinctive. These differences are quite significant and cannot allow the inclusion of the present form anywhere near *Anchitrema*. There is, therefore, a justification for its inclusion under Dicrocoeliidae as a new genus. Host: *Nycticejus kuhlii*; Lucknow, India

“Lecithodendriidae, Body spinose, especially anterior portion, stout, oval in transverse section, elongate, tongue-shaped, tapering slightly cephalad and caudad rather uniformly rounded. Suckers, oral and acetabulum, powerful. Gut, pharynx present; oesophagus short or absent; caeca long, extend postacetabular to near caudal end. Excretory system Y-shaped. Reproductive system: genital pore pre-acetabular, median; cirrus sac absent; vesicula seminalis long; ovary median at caudal end of the testes. Vitellaria well developed; receptaculum seminis absent; widened Laurer's canal; uterine slings numerous; eggs numerous, oval. Parasites of bat and chameleons.”

Ex orchocoelium Thapar, 1956

should be 1958

see Index-Cat + Zool. Record

[publ dated 1956 issued in
1958]

Yam says Thapar, 1931

but Thapar himself (1958) states
n. gen, n. sp. + adds: "...Pande
(1935) -- considering this form a sign of
Anchitrema san guineum ---

Anyone who would carefully study
the characters indicated in the abstr
of the paper given by the author (1931)
would have hesitated to make any
comments. However, the detailed descr.
given above in this communication
would remove any doubt about the
correct syst. position of the form under
discussion."

EXORCHOGODELIVM

Dicrocoeliidae

INFIDUM Travassos, 1916

Dicrocoeliinae: body ovoid, rounded posteriorly, more or less pointed anteriorly, unspined. Oral sucker subterminal; acetabulum slightly larger; preequatorial. Genital pore pre-acetabular, at bifurcation, slightly to the left. Pharynx and esophagus present; ceca broad, sinuous, extending to near posterior end of body. Testes postacetabular, preovarian, preuterine, inter-cecal or cecal, lobed, symmetrical, far separated. Cirrus sac large, containing vesicle. Ovary postacetabular, posttesticular, preuterine, intercecal, submedian, round or lobed, partially in testicular zone. Shell gland small. Vitellaria extracecal, sometimes reaching to acetabular zone. In reptiles.

Type species: I. infidum (Faria, 1910) Travassos, 1916

Distinguished from Eurytrema, Platynosomum and Platynotrema "besides the general anatomical arrangement that seems to us very characteristic, by the digestive apparatus"

Reference: Brazil Medico, 30:257-258. 1916

Infidum Travassos, 1916

Generic diagnosis. — Dicrocoeliidae, Dicrocoeliinae, Infidini: Body broad and short. Cuticle smooth or spinulate. Oral sucker, pharynx and acetabulum moderately developed; acetabulum pre-equatorial, subequal to oral sucker. Esophagus short, ceca wide, variable in length. Testes symmetrical, posterolateral to acetabulum. Cirrus pouch pre-acetabular, containing saccular seminal vesicle. Genital pore submedian, at or near level of intestinal bifurcation. Ovary postacetabular, between and behind testes, nearer antiporal testis than poral testis. Laurer's canal present. Uterine coils postovarian, mostly intercecal, partly extracecal. Vitellaria extracecal, variable in extent, confined to acetabulo-ovarian zone, or more extensive and attaining nearly whole length of ceca. Excretory vesicle? Parasitic in gall bladder of reptiles.

Genotype: *I. infidum* (Gomes de Faria, 1910) Travassos, 1916 (Pl. 46, Fig. 568), in bile vesicle of *Eunectes murinus* and *Cyclagas gigas*; Brazil and Bolivia.

Key to species — Skrjabin and Evranova (1953).

Other species:

- I. intermedium* Ruiz et Leão, 1942, in *Leimadophis poecilogyrus*; Brazil.
- I. luckeri* McIntosh, 1939, in biliary vesicle of *Orophis (Driomicus) hoodensis* (*Leimadophis chamisonis*); Galapagos.
- I. simile* Travassos, 1916, in bile vesicle of *Eudryas bifossatus*, *Drymarchon corais corais*, *Liophis miliaris miliaris*, *Bothrops jararaca*, *Leimadophis poecilogyrus*; Brazil.

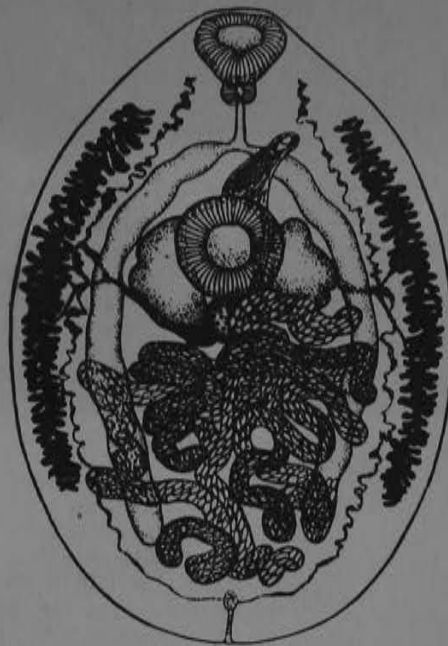
Infidum infidum (Faria, 1910) Travassos, 1916

Синонимы: *Dicrocoelium infidum* Faria, 1910; *Eurytrema infidum* (Faria, 1910)
(Рис. 216)

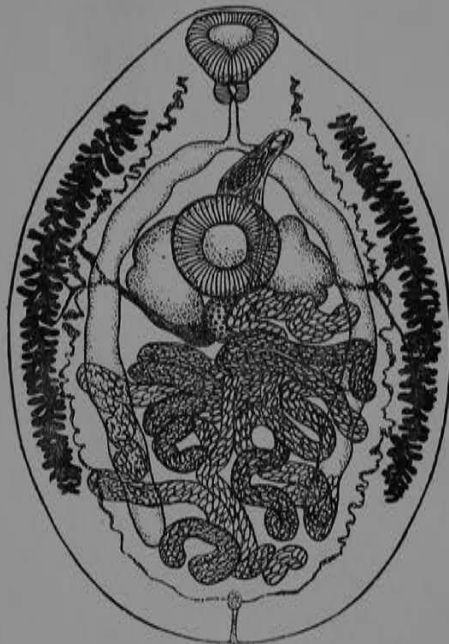
Хозяева: змея (*Eunectes murinus* L., *Cyclagas gigas*).

Локализация: желчный пузырь.

Места обнаружения: Бразилия и Парагвай.



Сем. DICROCOELIIDAE



216

216. *Infidum infidum* (Faria, 1910) Travassos, 1916 (по Фариа, 1912)

Diagnose específica.

Infidum: Trematóide de corpo tipicamente piriforme, com a extremidade anterior afilada e posterior arredondada, medindo 2,87 a 3,99mm de comprimento por uma largura variando entre 1,19 e 1,86mm. Medidas tomadas em exemplares comprimidos. Cutícula inerme. Ventosa oral sub-terminal, voltada para a face ventral, medindo 0,282 a 0,424mm no sentido do comprimento por 0,367 a 0,480mm no sentido da largura. Ventosa ventral logo acima da linha equatorial, mediana, circular, com um diâmetro compreendido entre 0,424 a 0,494mm. Distância entre as ventosas de 0,707 a 0,989mm. Faringe pequeno,

medindo 0,084 a 0,113mm no sentido do comprimento por 0,098 a 0,155mm de largura. Em continuação existe um esôfago bem desenvolvido, cuja porção basal é mais dilatada; mede 0,311 a 0,480mm de comprimento e sua largura é próxima da do faringe. Cecos simples, praticamente iguais, estendendo-se até bem próximo da extremidade posterior do corpo, como em *I. infidum*, distando desta 0,565mm em média. A porção terminal é bem mais dilatada. Testículos lobados mais ou menos intensamente, de situação imediatamente superior à linha equatorial, bordos parcialmente coincidentes com a margem do acetábulo, intra-cecais, com campos afastados e zonas coincidentes; o testículo do lado ovariano tende a ser mais volumoso; medem 0,226 a 0,296mm no sentido do comprimento por 0,123 a 0,264mm de largura. Vasos eferentes unindo-se ao nível da base da bolsa do cirro. Esta é um órgão tubular com a base mais dilatada; inicia-se próximo do bordo superior do acetábulo, na linha mediana do corpo e dirige-se no sentido súpero-lateral; mede 0,367 a 0,494mm de comprimento e cerca de 0,115mm de largura máxima; contém uma vesícula seminal ovalada com cerca de 0,185mm de comprimento e 0,098mm de largura; seguem-lhe uma curta parte prostática e um cirro tubulares. Poro genital ligeiramente lateral, ao nível da bifurcação e imediatamente para fóra do ramo cecal. Ovário arredondado ou alongado, inclinado, post-acetabular, sub-mediano, com zona parcialmente coincidente com os testículos e não raro com o acetábulo; mede 0,240 a 0,296mm no sentido do comprimento por 0,183 a 0,240mm no sentido da largura. Glândula de Mehlis para-ovariana. Receptáculo seminal e canal de Laurer não foram observados. Útero constituído por numerosas dobras irregulares que se estendem desde o nível da linha equatorial até muito próximo da extremidade posterior do corpo, ocupando toda a área intra-cecal e cobrindo grande parte dos cecos, os quais ultrapassa lateral- e posteriormente. O ramo ascendente margeia a linha mediana do corpo, afila-se e termina numa vagina delgada e longa paralela e externa à bolsa do cirro. As aberturas masculina e feminina são contíguas. Ovos muito numerosos, medindo 0,022 a 0,025mm de comprimento por 0,011 a 0,014mm de largura. Vitelinos de forma dendrítica, laterais, no terço médio do corpo, estendendo-se desde o nível superior do acetábulo até o nível superior do terço inferior do corpo. Viteloductos volumosos. Poro excretor mediano e sub-terminal.

A descrição e medidas foram baseadas em cinco exemplares cotipos (Lâmina No. 5.540) tomados entre quinze exemplares paratipos montados sob os Nos. 5.123, 5.125 e 5.126 (Necrópsia No. 3.052), pertencentes à coleção da Seção de Parasitologia do Instituto Butantan.

Hospedeiro tipo: *Leimadophis poecilogyus* (WIED)

Habitat: Pâncreas, fígado e canal coledoco

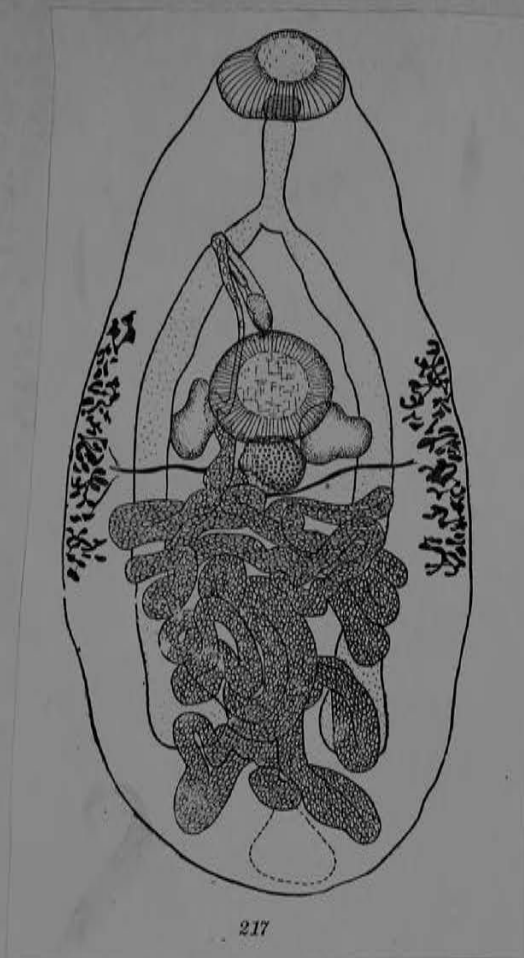
Localidade tipo: Guararapes — São Paulo — Brasil.



Infidum intermedium, n. sp.

Infidum intermedium Ruiz & Leao, 1943

Host: Leimadophis paecillogyrus



Infidum luckeri McIntosh, 1939

Length: 3.31 , without spines but with fine longitudinal ridges

Width: 1.62

Oral sucker: 0.412

Acetabulum: (size:) 0.412 by 0.444
(position): preequatorial

Sucker ratio:

Esophagus: very short; ceca end in third fourth of body

Pharynx: 0.174 in diameter

Genital pore (location): to left of midline at level of bifurcation

Testes, shape: oval, with zones partially coinciding; fields separate

location: near level of posterior rim of acetabulum

Cirrus sac (extent): to near level of center of acetabulum

Ovary, shape: oval

location: median, just posterior to acetabulum

Vitellaria: from anterior margin of acetabulum to slightly beyond middle of body

Eggs: 26 by 16 μ

Other features:

Host: Orophis (Dromicus) hoodensis ..., "Jubo" snake

Locality: Galapagos Islands

Reference: Smithson. Misc. Coll., 98 (16):1-2.

Comparisons: I. infidum (Faria, 1910) and I. similis Travassos, 1916

Life

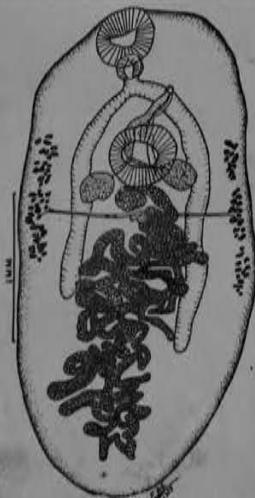


FIG. 1.—*Infidum luckeri*, new species.

1916, from Brazilian snakes. *Infidum luckeri* is the third species to be assigned to the genus. The three species may be separated by the following key:

1. Vitellaria extending anteriorly to level of genital pore or beyond
I. infidum (Faria)
- Vitellaria extending anteriorly only as far as level of anterior margin of acetabulum 2
2. Distance from tip of intestine to level of vitelline zone about equal to length of vitellaria *I. similis* Travassos
- Distance from tip of intestine to level of vitelline zone much shorter than length of vitellaria *I. luckeri*, n. sp.

Infidum luckeri McIntosh, 1939

(Рис. 218)

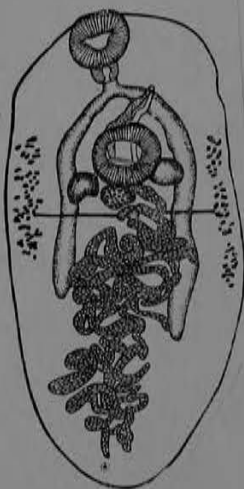
Хозяева: змеи [*Orophis (Driomicus) hoodensis* = *Leimadophis chamissonis*].

Локализация: желчный пузырь.

Место обнаружения: Галонагосские острова.

Описание вида (по Мак Интошу, 1939). Тело удлиненное, достигает 3,31 мм длины и 1,63 мм ширины. Кутикула без шипов, с тончайшей продольной исчерченностью. Брюшная присоска лежит впереди середины тела и достигает $0,41 \times 0,44$ мм. Ротовая присоска субтерминальная, $0,41$ в диаметре. Соотношение размеров присосок $1 : 1,03$. За ротовой присоской следует фаринкс $0,17$ мм в диаметре. Пищевод очень короткий. Кишечные стволы оканчиваются на разных уровнях около $\frac{3}{4}$ длины тела. Половое отверстие лежит слева от медианной линии, на уровне бифуркации кишечника. Половая бурса тянется от наружного края кишечного ствола до уровня середины брюшной присоски. Семенники эллипсоидальные, достигают $0,20 \times 0,23$ мм. *Vasa efferentia* соединяются у основания половой бursy. Яичник эллипсоидальный, достигает $0,17 \times 0,22$ мм, лежит медианно, на уровне заднего края брюшной присоски. Имеются лауреров канал и семяприемник, иногда закрытые тельцем Меллиса. Желточный резервуар лежит вентрально, позади середины длины тела. Матка простирается до заднего конца тела; петли ее проникают в зону кишечных стволков. Яйца желтого цвета, достигают $0,026 \times 0,016$ мм. Экскреторное отверстие лежит субтерминально на дорзальной стороне.

Л и т е р а т у р а: Travassos, 1944, стр. 287—288; McIntosh, 1939, стр. 1.



INFIDUM NIGERIANUM (TREMATODA: DICROELIIDAE). A NEW PARASITE OF THE LIVER OF LIZARDS

BERT B. BABERO* AND IKEDINACHUKU OKPALA

During routine helminthological investigations of the lizard, *Agama colonarum*, occasionally immature trematodes were collected from the liver, with as many as 41 flukes taken from a single host. In three animals, however, in addition to immature forms about 10 mature forms were recovered which obviously belonged to the same species. The key to the Dicrocoeliinae Looss, 1899, as presented by Yamaguti (1958) gave some difficulty in placing these parasites. In respect to the position of the testes, the trematodes seem to be intermediate between representatives of the groups Paradistomini and Infidini. They showed some affinity to *Paradistomoides* Travassos, 1944, and *Paradistomum* Kossack, 1910. However, the Nigerian flukes differed in the absence of wide intestinal ceca and an I-shaped excretory vesicle. The liver flukes also resembled *Anchitrema sanguineum* (Sonsino, 1894), as described and figured by Faria (1910). However, *Anchitrema* is characterized by extra-cecal testes. Our specimens appear to be best assigned to the genus *Infidum* Travassos, 1916, although even here there is doubt, since the diagram by Faria of *I. infidum* showed an excretory vesicle which differs from that in our trematodes. Since the description of the excretory vesicle was scanty, and since Yamaguti in his generic characterization wrote, "Excretory vesicle?," the writers feel no impropriety in assigning the *Agama* parasites to his genus. Travassos (1944, fig. 4, est. 118) mentioned a similar Y-shaped excretory vesicle for *I. similis*. Since our specimens are morphologically different from the other four species included in *Infidum*, they are herein described and designated *Infidum nigerianum* sp.n. Measurements are in mm except where otherwise stated.

Infidum nigerianum sp.n.
(Figure 1)

Diagnosis: Body elongate, 1.7 to 2.0 long and 0.58 to 0.61 wide in testicular region. Cuticle finely spinose. Oral sucker nearly circular, 0.18

to 0.23 in diameter. Prepharynx not discernible; pharynx 0.07 to 0.09 in diameter. Esophagus short. Acetabulum subcircular to circular, in anterior one-third of body, equal to or slightly larger than oral sucker, 0.20 to 0.26 in diameter. Testes symmetrical, ovoidal, somewhat posterolateral or equal

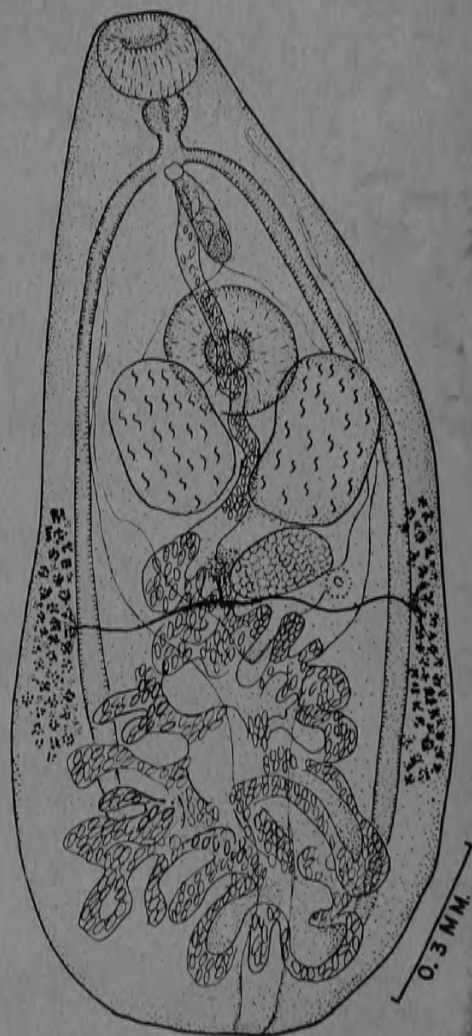
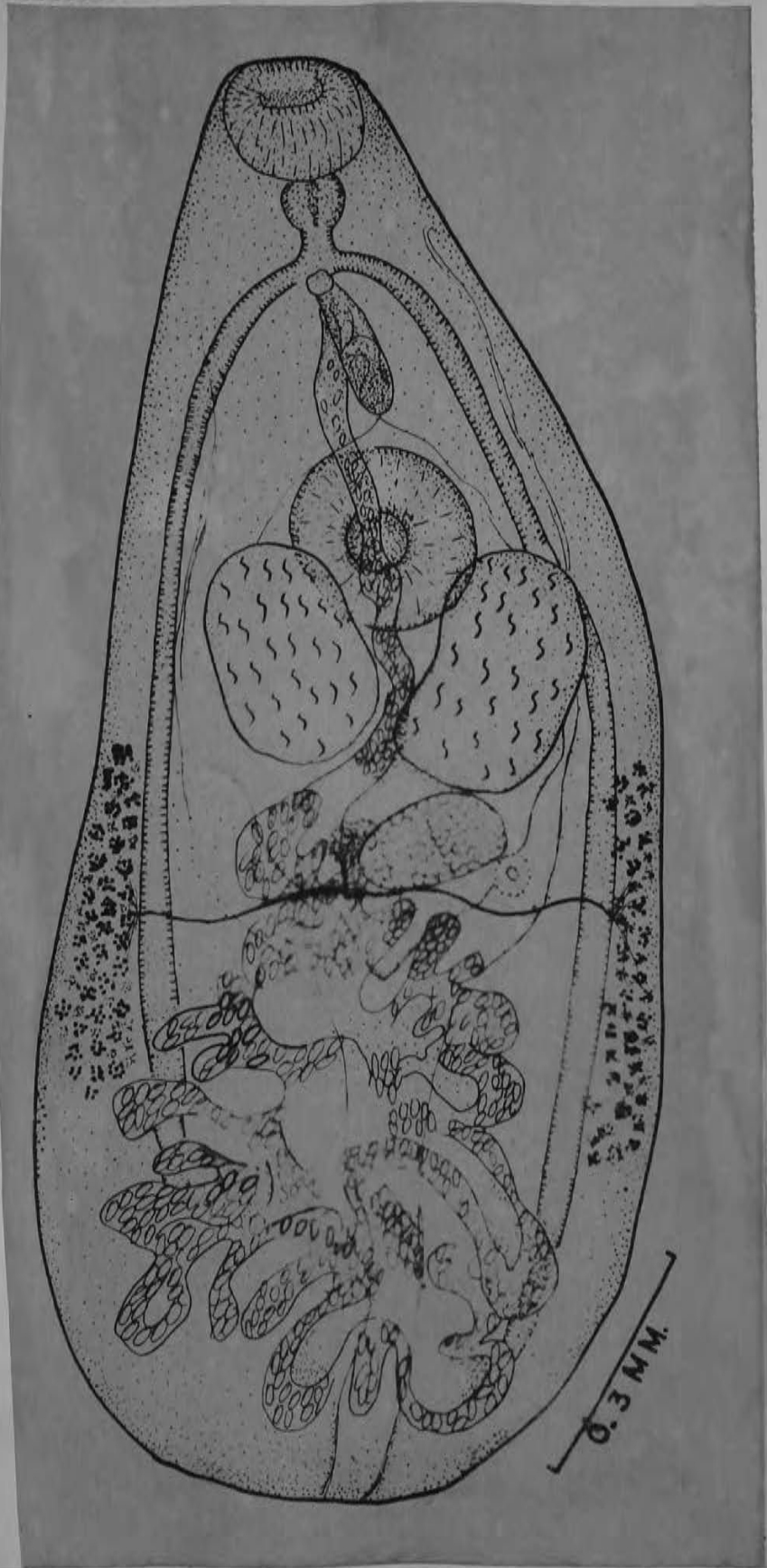


FIGURE 1. *Infidum nigerianum* sp.n., ventral view. (Diagrammatic.)

Received for publication 12 June 1961.

*Federal Emergency Science Scheme, Lagos.

Infidum nigeriensis or *nigerianum* Babero & Okpala in press (1962 ?
Host: Agama colonarum; gall bladder & bile ducts; Nigeria



Infidum similis Travassos, 1916. Figure 1.

Hosts in Tabasco: *Drymarchon corais melanurus*, *Bothrops atrox aspera*, *Clelia delia delia*, *Coniophanes bipunctatus biseriatus*, *C. quinquevittatus*, *Leptodeira septentrionalis polysticta*, *Leptophis occidentalis praestans*, *Micrurus affinis alienus*, *Natrix rhombifera werleri*, *Thamnophis sauritus chalceus*, *Staurotypus triporceatus*.

Location: common bile duct and gall bladder.

Geographic range: Paraguay and Brazil to Tabasco, Mexico.

Representatives of the genus *Infidum* were among the most commonly encountered trematodes of this study. Several thousands were seen during the course of the field collecting. These worms were found in ten different species of snakes and in one species of carnivorous turtle. A series of about 3000 specimens was retained, and more than 2000 of these were stained, cleared, and comparatively studied. Several worms were also studied in serial section.

Infection rates for *Infidum* were found to be high, and heavy individual infections were often seen. The host of preference in Tabasco seemed to be the Mexican indigo snake. This worm was found in 24 (96 percent) of the indigo snakes examined. Massive infections of from 200 to 400 worms were common, and one infection of more than 600 individuals was encountered. In such massive infections, the common bile duct was seen to be greatly convoluted, irregularly distended, and somewhat discolored. Sometimes the gall bladder was distended with a clear watery fluid indicating blockage of the common bile duct.

The gall bladder has been listed as the site of infection of *I. similis*, but it was found that the common bile duct is the more common locus. Sometimes the worms could be found in the gall bladder, but in that location they were never so numerous as in the common bile duct. No specimens of *Infidum* were encountered in the lumen of the intestinal tract.

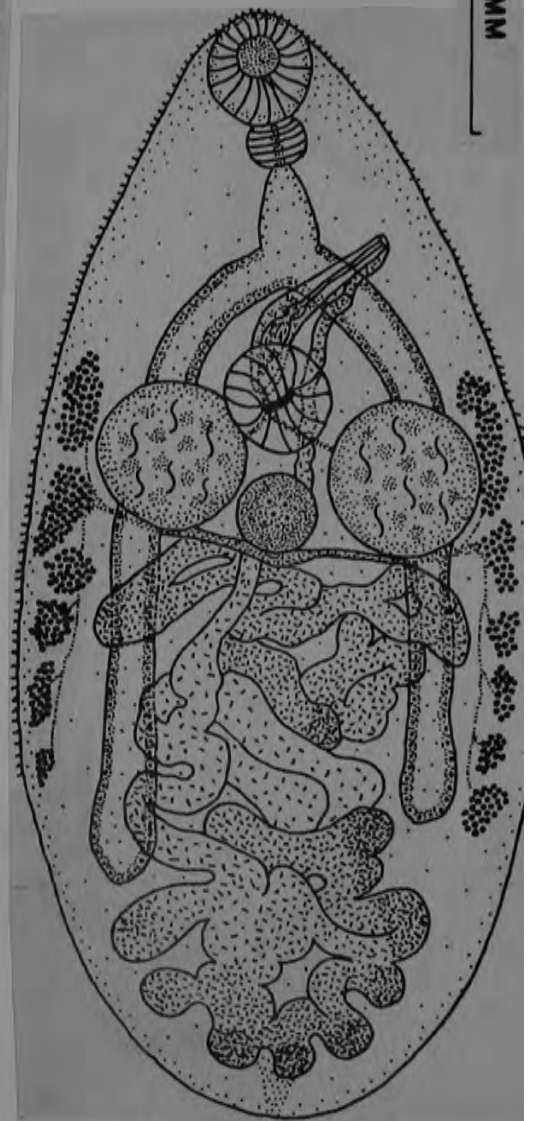
Comparative studies of worms from the several hosts have revealed much variation. It is believed, however, that only a single highly variable species is involved. All the Tabasco specimens are thought to be conspecific with *Infidum similis* Travassos, 1916.

Travassos (1916) described *I. similis* from Brazilian material. Ruiz and Leão (1943) published the description of *I. intermedium* from the same country. Travassos (1944) published an extensive monograph on the Dicrocoeliidae in which he pointed out the extreme variability of *I. similis*, and placed *I. intermedium* in synonymy with it.

The present study can add little to the descriptions of Travassos. However, neither *I. similis* nor *I. intermedium* were reported as spinous. The majority of specimens in the present collection have cuticular spines that extend from the anterior end to about level with the ends of the intestinal caeca. These spines are small, and apparently they are easily lost.

Travassos, 1944, reported the occurrence of a single specimen in his series that had both sets of vitelline glands on the same side of the body. Similarly, in the present series from Mexico, one specimen has been found with the same arrangement of vitelline structures. The low incidence of this anomaly and the normal appearance of the worm in other respects suggest that a mutation may be involved.

From the present series it appears likely that host physiology is a factor in some of the variability. Specimens from *Coniophanes bipunctatus biseriatus*, for example, were invariably small (1.12-2.25 mm.). Although these worms were mature, they had testes about half the diameter of the acetabulum. Specimens from *Thamnophis sauritus chalceus* and the turtle, *Staurotypus triporceatus*, showed the same size relationship of testes to acetabulum, but they ranged in overall length from 4 to 4.5 mm. Specimens from *Drymarchon corais melanurus* were nearly all in the latter size range, but they had testes that were from 1.5 to 2.0 times the diameter of the acetabulum. Significantly, the specimens having the largest relative testis size in Brazil, as reported by Travassos, were those from *Drymarchon corais corais*. Specimens having large testes were encountered in



Leptodeira septentrionalis polysticta, *Leptophis occidentalis praestans*, and *Micrurus affinis alienus* as well as in the indigo snake.

Studies of a growth series taken from a light infection in an indigo snake, have led to the conclusion that normal growth does not account for the variability in organ size. An immature specimen in the growth series which measured about 1 mm. in length had relatively larger testes than mature individuals from *Coniophanes bipunctatus biseriatus*. The smallest mature specimen in the growth series, although of about the same size as specimens from *C. bipunctatus*, had a testiculo-acetabular ratio typical of larger specimens from *Drymarchon corais*.

Travassos 1944 briefly reported the occurrence of a microsporidian hyperparasite in *Infidum similis*. Curiously, the material from Mexico also has been found to be infected with microsporidia. This hyperparasitic organism was the apparent cause of much variation.

High infection rates of the microsporidian were often encountered, especially in trematodes from massive infections. Although it has not been possible to observe all of the stages in the life cycle of the hyperparasite, a comparison of certain stages with the descriptions of Dissanaïke (1957) indicates that a species of *Nosema* is probably involved.

Stages of *Nosema* sp. were first seen in the gut of a specimen of *I. similis* that otherwise appeared normal. These stages closely resembled the sporogony of *Nosema helminthorum* as reported by Dissanaïke. They appeared as small, spherical envelopes containing from two to eight or more spores. Subsequently, it was noted that specimens of *I. similis* from massive infections nearly all contained various stages of *Nosema* sp. These were found most often in the gut, but involvement of other structures was also seen. In many specimens the walls of the oesophagus had been completely broken down leaving a large vacuole in the parenchyma. In a few specimens the pharynx had been partially destroyed, and in one individual the oral sucker had been reduced to a tunnel-like opening.

Travassos mentioned the involvement of the vitellaria in infected worms. Several specimens in the present group showed similar vitelline destruction. Quite often the structure of the testes and ovary also appeared to have been affected. In many individuals the testes appeared as multiple units. These were most often dorso-ventrally situated multiples of the original two testes. Such specimens appeared to have three or four testes instead of two. This multiplication of testes may be the result of a weakening of the testicular capsule by the microsporidia which caused testicular material to flow out into the parenchyma and form additional lobes. In some cases one or both testes showed internal destruction that left the capsule intact with the contents withdrawn towards the center. In a few examples, the ovary showed a similar internal destruction. A few specimens have been seen in which both testes appeared to be normally encapsulated, but one was very small and the other three times the normal size. This anomaly may be the result of a light infection of *Nosema* sp. that inhibited the growth of the testis of one side.

Apparently, *I. similis* has not been reported previously outside of Brazil. The present report adds ten new host species for a total of 15 known hosts of the trematode. As far as could be determined, no species of *Infidum* has been reported previously from a turtle.

FROM THATCHER, 1963

Infidum similis Travassos, 1916

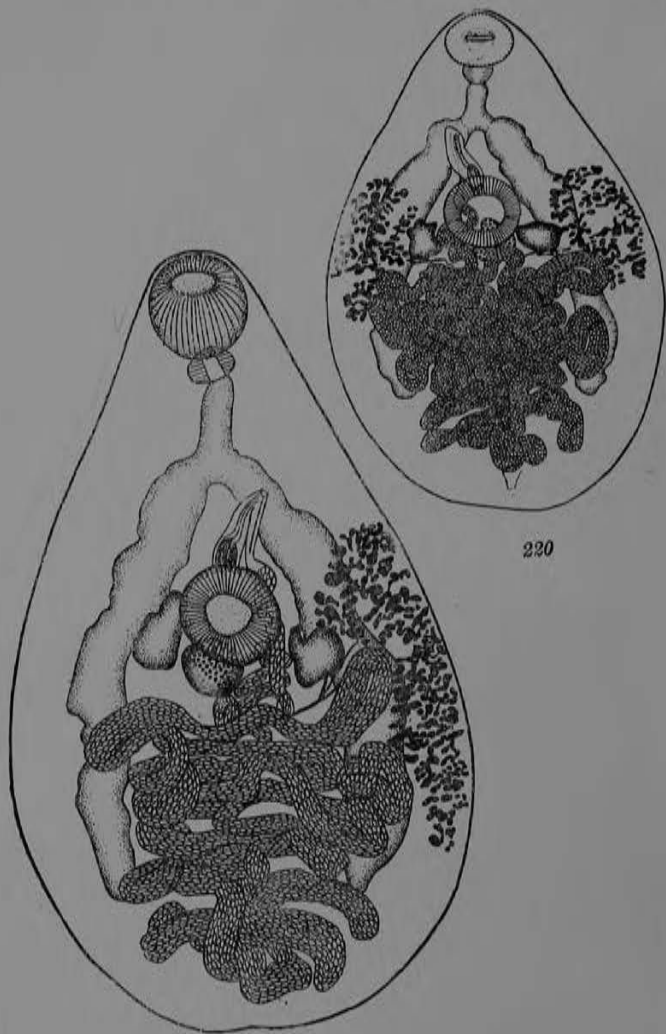
(Рис. 219 и 220)

Хозяева: змеи — *Eudryas bifossatus* (Raddi); *Drymarchon corais corais* (Boie); *Liophis miliaris miliaris* (L.) (= *Rhadinea merremi*); *Bothrops jararaca* (Wied.); *Leimadophis poecilogyrus* (Wied.).

Локализация: желчный пузырь.

Место обнаружения: Бразилия.

Описание вида (по Травассосу, 1944). Длина тела 2,9—5,9 мм при максимальной ширине 1,6—2,7 мм на середине тела. Тело широкое, плоское. Кутикула толстая, гладкая. Брюшная присоска немного кпереди от середины тела, 0,32—0,75 мм в диаметре. Ротовая присоска



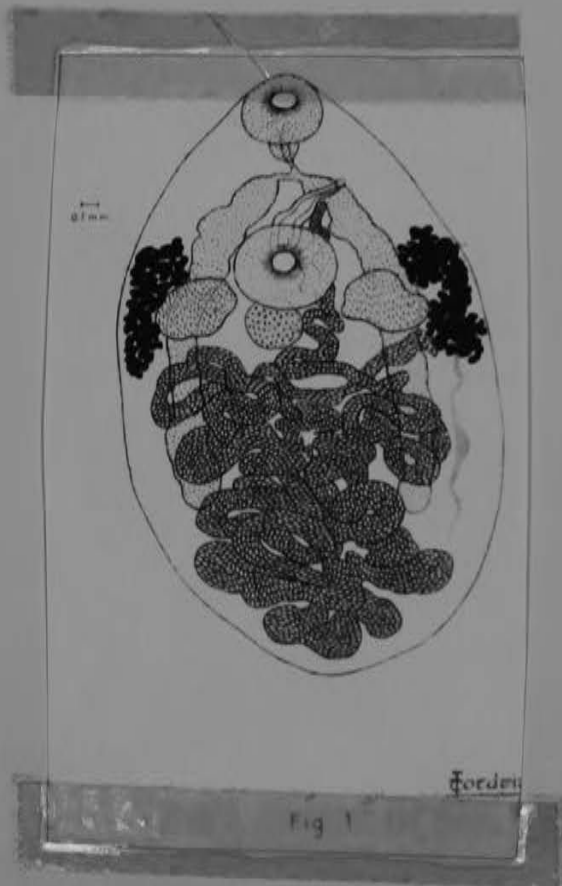
219

220

Infidum similis Travassos, 1916

3.5 to 3.8 by 2.2 to 2.6
Oral sucker 0.53
Acetabulum 0.69
Pharynx 0.19 in diameter
Esophagus short and slender
Genital pore at bifurcation, slightly to left
Testes slightly lobed, intercecal, cecal or extracecal (?)
fields in part overlap acetabulum
Cirrus sac large, oblique, to center of acetabulum
Ovary round, submedian, almost entirely in testicular zone,
immediately subacetabular
Vitellaria extracecal, from near the anterior edge of
acetabulum to slightly posterior to ovary
Eggs 36 by 19 μ

Host: Drimobius bifossatus (snake)
in gall bladder and bile ducts
Locality: Brazil
Reference: Brazil Medico, 30:257-258. 1916



INFIDUM