

东海鱼类复殖吸虫

II. 半尾科种类名录及一新属七新种的描述*

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半尾科 Hemiuridae (Looss, 1899) Luhe, 1901 为侵袭鱼类的专性吸虫之一, 种类很多。1971年 Yamaguti 记载有 97 属, 420 余种, 其中绝大部分是寄生在海鱼体上。关于东海鱼类半尾科吸虫, 顾昌栋^[5,6], 唐仲璋^[3], 汪溥钦^[2]、唐崇惕^[4]都有过报告。迄今东海该科吸虫已知近70余种; 先后共报道新种 42 个, 新属 3 个。作者自 1960 年起陆续在东海采集鱼类吸虫标本, 经整理鉴定共得半尾科 32 种, 其中有 7 新种, 分隶于 6 属, 内有 1 新属。本文为新属和新种的记述。

虫体各器官量度单位均为 mm, 卵子为 μm 。模式标本保存在中国科学院海洋研究所。

半尾亚科 Hemiurinae Looss, 1899

独腺属(新属) *Lecithomonoium* gen. nov.

属的特征 虫体小, 体被有锯齿状横纹, 身体分为正体与尾两部分。口吸盘在体前腹面, 腹吸盘大, 靠近体前。咽小, 食道短, 肠向后止于正体末, 并不伸入尾部。睾丸前后排列, 在正体中间, 贮精囊大, 几与前睾丸平行, 前列腺发达, 生殖孔在肠叉之后。卵巢在正体后1/2。有受精囊。卵黄腺为单个, 近圆形, 在卵巢后面。子宫不进入尾部。卵子大, 壳厚。排泄管 Y 形, 两臂在咽处相连。寄生于海产硬骨鱼类的胃内。

模式种 龙头鱼独腺吸虫(新种) *Lecithomonoium harpodi* sp. nov.

讨论 独腺属特征和副半尾属 *Parahemiurus* Vaz et Pereira, 1930 相近, 区别是前者的卵黄腺为单数(1块), 后者的为复数(2块)。在半尾科中卵黄腺为单数者有 *Aphanurus* Looss, 1907; *Bunocotyle* Odhner, 1928; *Monolecithotrema* Yamaguti, 1970; *Chenia* Hsu, 1954 和 *Neophanurus* Tang et al, 1983。但都不具尾, 故建独腺属(新属) *Lecithomonoium* gen. nov.

1. 龙头鱼独腺吸虫(新属、新种) *Lecithomonoium harpodi* gen. et sp. nov. (图1)

宿主 龙头鱼 *Harpodon nehereus* (Hamilton-Buchanan)。

寄生部位 胃。

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采集地点、日期 鲁家峙(舟山), 1981年5月18日。

感染 剖检4尾鱼, 只在1尾鱼体内找到虫1个。

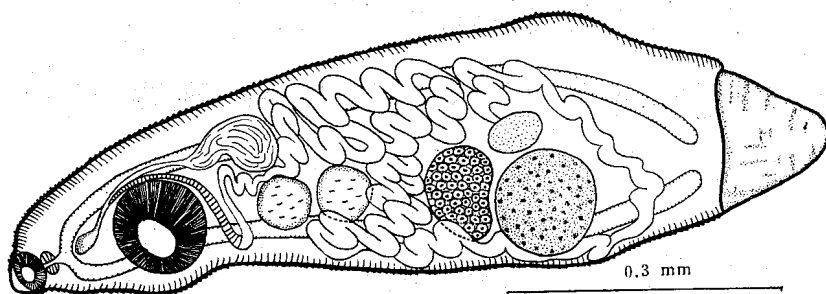


图1 龙头鱼独腺吸虫(新属、新种) *Lecithomonium harpodi* gen. et sp. nov. 腹面图

描述 虫体很小, 生活时灰白色。虫体分正体与尾两部分, 体表有横纹, 在体两侧呈锯齿状。体全长 0.935, 正体长 0.799, 尾长 0.136, 体中间部分宽 0.255。口吸盘椭圆形, 0.038×0.051 , 位于体前端腹面。腹吸盘大, 圆形, 直径 0.102。口腹吸盘距离为 0.068。

咽小, 0.025×0.034 , 食道短, 肠管伸向体后, 但不进入尾部。

睾丸1对, 近圆形, 前后排列, 前睾 0.068×0.072 , 后睾 0.068×0.085 。贮精囊大, 茄形, 0.102×0.081 , 在腹吸盘后, 前睾一侧, 向前为前列腺部, 长为 0.085, 两性管长 0.051, 前端稍膨大, 生殖孔开口在肠叉之后。

卵巢扁圆, 比睾丸大, 为 0.085×0.119 。受精囊卵圆形, 0.085×0.068 , 在卵巢左下侧。卵黄腺单个, 近圆形, 为团块状, 远比睾丸、卵巢大, 为 0.119×0.136 , 在卵巢下面, 子宫发达, 自受精囊通出, 在正体后缘盘曲, 不进入尾部, 经睾丸与腹吸盘间向前成子宫末段通于两性管。子宫内卵子稠密, 个体大, 长椭圆形, 壳厚 $24-27 \times 9-12$ 。

2. 马鲛离尾吸虫(新种) *Aponurus eleutheronematis* sp. nov. (图2)

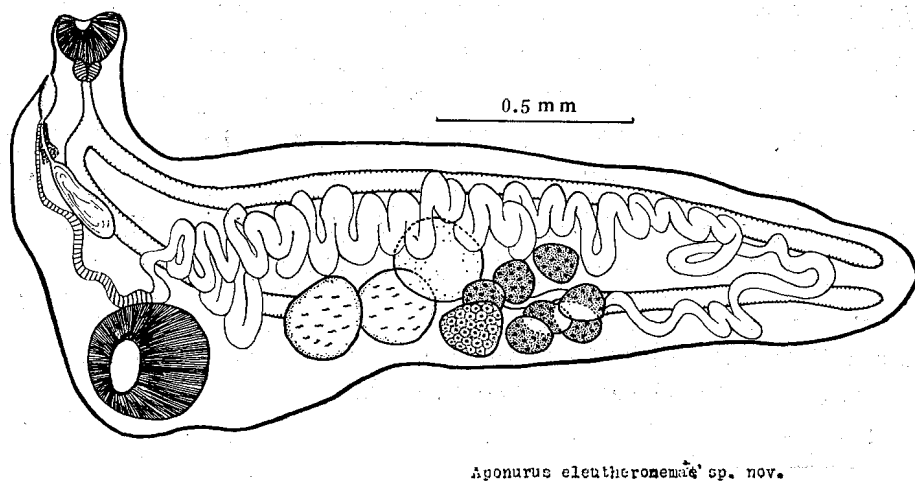


图2 马鲛离尾吸虫(新种) *Aponurus eleutheronematis* sp. nov. 腹面图

宿主 四指马鲛 *Eleutheronema tetradactylum* (Shaw)。

寄生部位 胃。

采集地点、日期 浙江省宁波, 1980年5月4日。

感染 检查2尾鱼, 于1尾鱼体内找到虫3个。

描述 (根据3个标本) 虫体似梭形, 前后两端尖, 体表光滑。生活时为灰白色, 中间黄色为子宫部分。体长 2.567—2.839, 腹吸盘处体宽 0.646—0.731。口吸盘在体前端, 0.102—0.181×0.153—0.204。腹吸盘大, 稍突出, 圆形, 直径 0.306—0.340, 位于体前 1/2 中间, 距口吸盘为 0.544—0.714。

咽小, 0.068—0.119×0.068—0.102, 食道中等, 0.085—0.102×0.034—0.051, 肠管自肠叉处后伸达体末缘。

睾丸1对, 椭圆形, 前后排列, 前辜 0.211—0.255×0.204—0.238。后辜 0.187—0.238×0.187—0.238。贮精囊棒状, 0.238—0.255×0.064—0.170, 在腹吸盘前面。向前为前列腺部, 长为 0.102—0.272, 周围被有前列腺细胞; 两性囊纺锤形, 0.119—0.153×0.034—0.136, 靠近食道。生殖孔开口在口吸盘后缘咽附近。

卵巢形状不规则, 0.170—0.204×0.136—0.306, 在后辜后面, 相距 0.010—0.017。受精囊大, 近球形, 0.238—0.391×0.221—0.340, 在卵巢侧上缘, 部分为后辜所遮。卵黄腺为圆球状, 7个, 每个直径为 0.102—0.119, 集中排列在卵巢下面。子宫发达, 分布有序, 首先沿体侧下行, 近体末折向上, 迂回前行, 越过腹吸盘通到两性囊。卵子中等大小, 27—30×9—12。

排泄管两臂于咽处相连。

讨论 本种体形和器官排列与 *A. acropomatis* Yamaguti, 1938 相近, 区别是本种体大, 受精囊亦大, 而卵子小。

3. 棘茄鱼离尾吸虫(新种) *Aponurus halieutae* sp. nov. (图3)

宿主 棘茄鱼 *Halieutae stellata* (Vahl)。

寄生部位 胃。

采集地点、日期 浙江省宁波, 1980年5月7日。

感染 检查4尾鱼, 在1尾鱼体内发现虫2个。

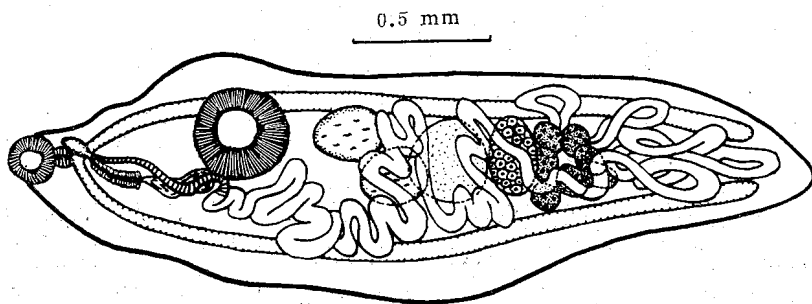


图3 棘茄鱼离尾吸虫(新种) *Aponurus halieutae* sp. nov. 腹面图

描述 (根据2个标本) 虫体前后两端尖, 表面光滑, 外膜较厚。体长 2.975—

3.009, 腹吸盘处体宽 0.782—0.816。口吸盘在体顶端腹面, $0.153—0.204 \times 0.170—0.221$ 。腹吸盘圆形, 直径 0.340—0.425, 位于体前 1/2 的中间, 距口吸盘 0.493—0.595。

咽小, 0.085×0.119 。食道短, 几近于无。肠管向体后伸达体末。

睾丸 1 对, 前后斜列, 位于体前 1/2 后部, 通常左睾丸在前。左睾丸 $0.170—0.255 \times 0.204—0.255$, 右睾丸 $0.119—0.221 \times 0.187—0.221$ 。贮精囊葫芦状, $0.170—0.187 \times 0.102—0.119$, 位于腹吸盘前缘。前列腺发达, 长为 $0.102—0.204$, 周缘有前列腺细胞包围。两性囊小, 卵形, 0.119×0.170 , 位于口吸盘后缘咽处, 前端开口为生殖孔。

卵巢扁椭圆形, $0.153—0.204 \times 0.136—0.306$, 位于体后 1/2 稍前。受精囊大, 椭圆形, $0.323—0.578 \times 0.289—0.493$, 在后睾丸与卵巢间。卵黄腺为 7 叶, 集中在卵巢后缘, 每叶大小为 $0.119—0.221 \times 0.119—0.238$ 。子宫起始下行于体后缘形成盘曲, 再上行在睾丸与卵巢间又有若干盘曲, 向前越过腹吸盘通入两性囊。卵子稠密, 金黄色, $22—24 \times 8—12$ 。

讨论 本种与 *A. rhinoplagusiae* Yamaguti, 1934 相近, 但本种的体形大, 卵巢和受精囊亦大; 睾丸小, 贮精囊形状不同; 卵子小; 生殖孔位置不同。

4. 沟鲈星腺吸虫(新种) *Lecithaster atropi* sp. nov. (图 4)

宿主 沟鲈 *Atropus atropus* (Bloch et Schneider)。

寄生部位 胃。

采集地点、日期 浙江省宁波, 1975 年 6 月 5 日。

感染 解剖 4 尾鱼, 在 1 尾鱼体内找到虫 2 个。

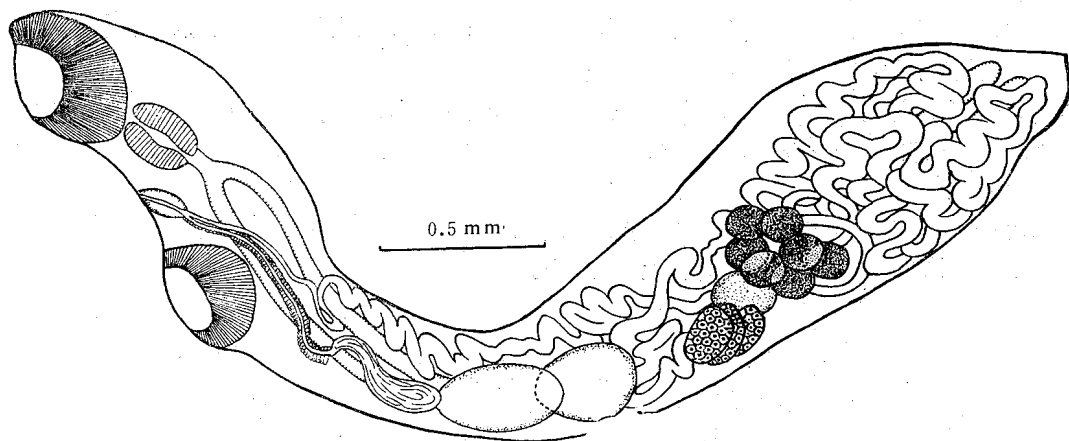


图 4 沟鲈星腺吸虫(新种) *Lecithaster atropi* sp. nov. 腹面图

描述 (根据 2 个标本) 虫体小, 如棒状, 不具尾。体长 2.227—3.094, 腹吸盘处体宽 0.306—0.442, 在近体末时又加宽为 0.408—0.527。口吸盘在体前端, 椭圆形, $0.221—0.306 \times 0.238—0.255$ 。腹吸盘似钵, $0.204—0.272 \times 0.153—0.255$, 比口吸盘小, 距体前缘 0.408—0.527。口、腹吸盘比为 1.25:1

咽长椭圆形, $0.085—0.221 \times 0.068—0.153$, 很发达, 食道短, $0.051—0.085 \times 0.051—0.068$, 肠管自肠叉处分出, 向后达体末。

睾丸 1 对, 橄榄形, 两睾丸前后排列, 部分重叠。前睾丸 $0.119-0.306 \times 0.136-0.153$, 后睾丸 $0.102-0.238 \times 0.102-0.187$, 两睾丸位于体中间。贮精囊长茄形, $0.221-0.306 \times 0.051-0.068$, 在睾丸前边。前列腺长 $0.204-0.510$, 周围有发达的前腺细胞, 向前为两性管, 外面包有近椭圆形的两性囊, 其大小为 $0.068-0.102 \times 0.051$ 。生殖孔开口于咽附近。

卵巢椭圆,分3叶,大小为 $0.102-0.221 \times 0.085-0.136$,在体后 $1/2$ 靠前,距后辜 $0.119-0.136$ 。受精囊卵形, $0.085-0.153 \times 0.051-0.102$,位于卵巢下面。卵黄腺呈片状或滤泡状,共7个,每个大小为 0.085×0.102 。子宫发达,起始自受精囊下行,盘曲达体末,复折向上,经卵巢向前,在前辜前面呈子宫末段,通于两性囊内。卵子稠密,长椭圆形, $18-21 \times 9-12$ 。

讨论 本种与 *L. chrysophrysi* Gupta et Ahmad, 1976 在体形及器官排列上均相似,区别是本种个体较大,卵巢及睾丸均大;贮精囊为长茄形,非囊状;受精囊在卵巢下面,而不在其右侧;生殖孔在咽附近,不靠近肠叉;卵子小。

5. 星鳗充尾吸虫(新种) *Plerurus asterocongeri* sp. nov. (图 5)

宿主 星鰻 *Astroconger myriaster* (Brevoort)。

寄生部位 胃。

采集地点、日期 浙江省宁波, 1980年6月2日。

感染 解剖 1 尾鱼,在体内找到虫 10 个。

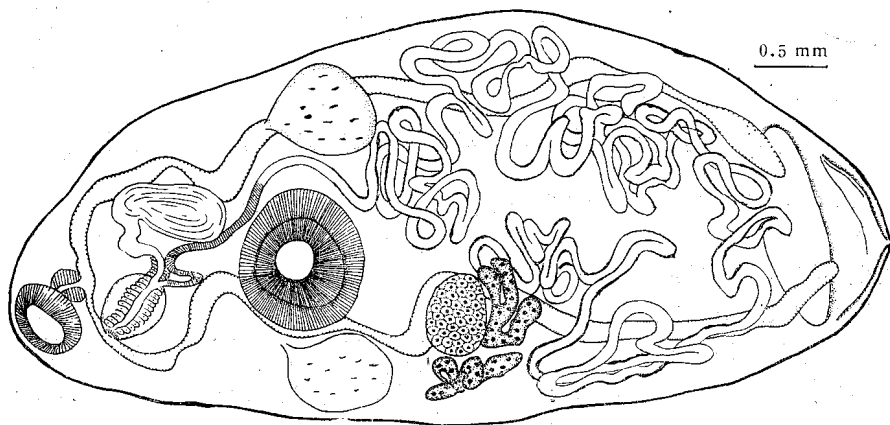


图5 星鰻充尾吸虫(新种) *Plerurus asterocongeri* sp. nov. 腹面图

描述 (根据 10 个标本) 虫体大, 长椭圆形, 生活时为红色, 体表光滑。正体长 6.086—9.928, 腹吸盘处体宽 2.261—3.655, 尾长 0.646—1.224。尾通常缩入正体内。口吸盘在体亚前端腹面, 椭圆形, $0.323—0.493 \times 0.425—0.714$, 口前叶为 0.017—0.119。腹吸盘大为 $0.765—1.224 \times 0.833—1.285$, 位于体前 1/2 中间, 距口吸盘 0.952—1.870。口、腹吸盘比为 1:1.9—2.1。

咽发达,椭圆形, $0.204-0.340 \times 0.204-0.374$ 。食道为 $0.064-0.187 \times 0.051-0.170$, 有的被咽遮住。肠叉自肠管处先平伸再折向后, 肠管一般不进入尾部。

睾丸 1 对, 对称排列在腹吸盘两侧, 左睾 $0.561-0.884 \times 0.510-0.784$, 右睾 $0.510-0.867 \times 0.510-0.867$ 。贮精囊茄形, $0.663-1.360 \times 0.204-0.391$, 前端有弯曲, 在腹吸盘

前缘。前面为前列腺部,长为 $0.153-0.476$,周围有发达的前列腺细胞。两性管发达,外面包有两性囊, $0.187-0.340 \times 0.238-0.340$,生殖孔开口在肠叉以后。

卵巢扁球形, $0.391-0.578 \times 0.544-0.714$,位于体后 $1/2$ 稍前,通常在右睾后面。卵黄腺指状,粗大,左侧有3,右侧4,卵黄腺范围 $0.425-0.850 \times 0.697-1.513$ 。未见受精囊。子宫起始沿体右侧下行,到正体后缘折向上,沿体左侧向前,经两睾间,在腹吸盘处形成子宫末段,通到两性管。子宫内卵子稠密,椭圆形, $18-21 \times 8-9$ 。

排泄管Y形,于腹吸盘后分出两臂,在咽处相连。

讨论 本种与 *P. sphyraenae* Yamaguti, 1970 相近,区别是本种虫体肥大;生殖器官及卵子均大;肠管不进入尾部;两睾在腹吸盘两侧。

6. 长尾强尾吸虫(新种) *Sterrurus longicaudatus* sp. nov. (图 6)

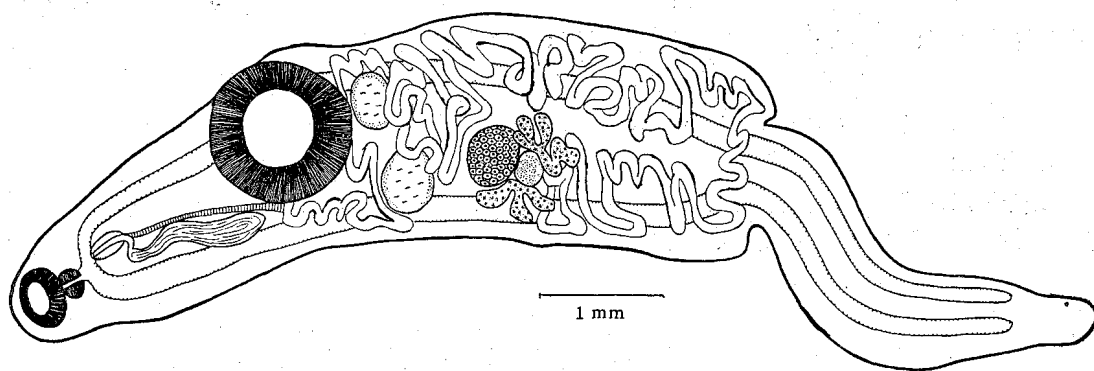


图 6 长尾强尾吸虫(新种) *Sterrurus longicaudatus* sp. nov. 腹面图

宿主 黄鲛鰈 *Lophius litulon* (Jordan)。

寄生部位 胃。

采集地点、日期 沈家门(舟山),1960年4月7日。

感染 解剖1尾鱼,体内有虫25个。

描述 (根据11个标本)虫体大,腹吸盘前逐渐尖,体表光滑,具可伸缩的尾。体全长为 $9.419-13.093$,正体长 $5.812-8.799$,腹吸盘以后虫体宽度约相等,为 $1.587-2.021$ 。口吸盘椭圆形, $0.300-0.418 \times 0.451-0.534$,位于体近前端腹面,口前叶明显, $0.017-0.067$ 。腹吸盘大于口吸盘,近圆形, $0.969-1.169 \times 0.935-1.169$,位于正体前 $1/2$,距口吸盘 $1.102-1.670$ 。

咽椭圆, $0.167-0.200 \times 0.200-0.251$,部分为口吸盘所遮。食道通常后折, $0.084-0.150 \times 0.033-0.084$,肠管向体后伸,进入尾部。

睾丸近圆形,左右对称排列于腹吸盘后缘,左睾 $0.340-0.527 \times 0.425-0.544$,右睾 $0.425-0.544 \times 0.391-0.544$ 。贮精囊大,长棒状,有弯曲无缢缩, $0.765-1.173 \times 0.187-0.340$ 。前有短的前列腺,前列腺细胞发达,包围前列腺及两性囊。射精管稍弯, $0.136-0.187 \times 0.068-0.085$,前面与子宫末段合成两性管,管长与射精管相等。生殖孔位于咽后。

卵巢扁椭圆形, $0.267-0.551 \times 0.45-0.568$,位于正体后稍前,受精囊小,卵形, $0.117-0.251 \times 0.134-0.334$,位于卵巢下面,卵黄腺肥厚,掌状,共7片,为左4右3排

列,在卵巢后面包住受精囊,卵黄腺范围 $0.595-0.850 \times 0.510-0.884$ 。子宫起始沿体右侧下行,到正体末折向上沿体左侧经卵巢睾丸间越过腹吸盘,成子宫末段通入两性囊。卵子椭圆形, $15-18 \times 9-12$ 。

排泄管 Y 形,在腹吸盘后两辜间分出两臂,在咽处相连。

讨论 本种在该属已知种中体形最大;尾部长超过正体长度之半,腹吸盘为口吸盘之 3 倍;贮精囊弯曲无缢缩;子宫不进入尾部。

7. 沙带指腺吸虫(新种) *Lecithochirium savalae*

sp. nov. (图 7)

宿主 沙带鱼 *Trichiurus savala* Cuvier et Valenciennes。

寄生部位 胃。

采集地点、日期 福建省厦门,1982 年 4 月 1 日。

感染 解剖 60 尾鱼,在 5 尾体内分别发现有虫 1,1,1,2,4 个。

描述 (根据 6 个标本)虫体较小,筒形,前端尖,后端钝。体全长 $3.264-3.895$,正体长 $2.771-3.723$,尾部短, $0.221-0.376$,通常缩入正体内。体中间部宽 $0.408-0.748$ 。口吸盘在体亚前端,扁椭圆形, $0.085-0.136 \times 0.102-0.153$ 。口前叶明显,长 $0.020-0.051$ 。腹吸盘圆形,直径 $0.323-0.442$,位于正体前 $1/2$ 中间,距口吸盘 $0.272-0.578$ 。口、腹吸盘比为 $1:3.1-3.5$ 。没有腹吸盘前凹。

咽圆形,直径 $0.036-0.085$ 。食道为 $0.051-0.068 \times 0.034$,两肠管向后伸,终于正体 $2/3$ 处以后。

睾丸 1 对,前后斜列,前辜 $0.153-0.221 \times 0.102-0.170$,后辜 $0.153-0.255 \times 0.102-0.221$,通常左辜在前,靠近腹吸盘后缘,两辜间距离为 $0.017-0.085$ 。贮精囊葫芦状, $0.170-0.306 \times 0.102-0.119$,位于腹吸盘前,缢缩为 3 室,基室最大,前端一室小,前列腺短, $0.034-0.068$,向前通入两性囊。囊大,球形,直径 $0.068-0.102$ 。生殖孔在肠叉后缘。

卵巢扁椭圆形, $0.136-0.306 \times 0.170-0.272$,在体中线稍后右肠管处。卵黄腺短指状,一般左侧 3 条,右侧 4 条,在卵巢后面,范围为 $0.187-0.289 \times 0.187-0.391$ 。子宫起始伸过卵黄腺后缘,略盘曲即上行,越过睾丸通入两性囊内。子宫不进入尾部。卵子椭圆,壳薄, $15-18 \times 10-12$ 。

讨论 本种与 *L. acutum* Chauhan, 1945 的区别是体小;贮精囊后端不伸过腹吸盘之后;卵子大。与 *L. synodi* Manter, 1931 区别是本种没有腹吸盘前凹;口、腹吸盘比

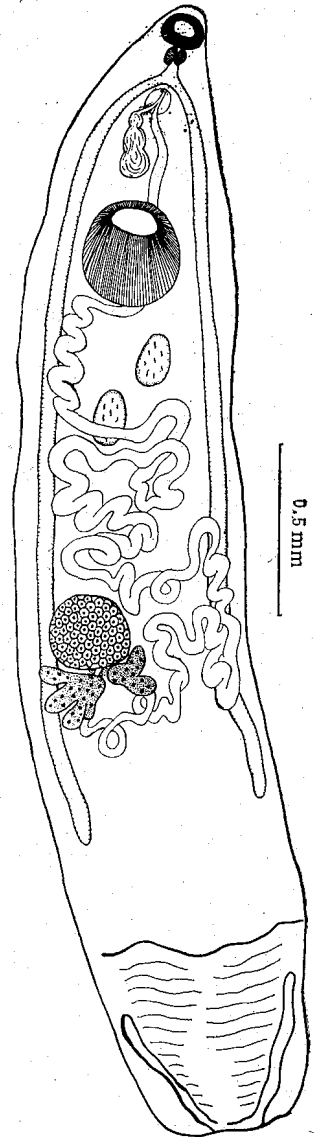


图 7 沙带指腺吸虫(新种)
Lecithochirium savalae sp. nov.

在 1:3 以上;卵子大。

该科种类能在海洋中广泛分布是由于幼虫期的第二中宿主多系甲壳类动物,而这些动物又都是鱼类的饵料,所以它们能借助鱼体来繁殖传播。半尾科吸虫有的仅能生活于某种宿主的体内,表现出寄生虫的特异性,最明显的如海鳗住胃吸虫 *Stomachicola muraenesocis* Yamaguti, 1934,只能在海鳗体内寄生,感染率达 90% 左右。也有的种类具有较广泛的宿主,表现出低特异性,如大孔指腺吸虫 *Lecithochirium magnaporum* Manter, 1940 和大眼鲷指腺吸虫 *Lecithochirium priacanthi* Yamaguti, 1953 的宿主可达五、六种或十余种以上。这些特异性的产生取决于寄生虫与宿主间关系中的一些因素,诸如宿主发生感染所需的条件,发育中的寄生虫对寄主体内环境的理化成分适应程度等。从半尾科吸虫侵袭宿主的情况看,以鲈形目种类居多,依次为鲱形目、鳗鲡目等,这一现象也符合东海鱼类的数量分布特点。

东海鱼类半尾科吸虫及宿主名录

虫 名	宿 主
鳮隐尾吸虫 <i>Aphanurus mugilus</i> Tang, 1981	鳮 <i>Mugil cephalus</i>
司徒氏隐尾吸虫 <i>A. stossichi</i> (Monticelli, 1891) Looss, 1907	斑鲈 <i>Clapanodon punctatus</i>
马鲛离尾吸虫 <i>Aponurus eleutheronematis</i> sp. nov.	赤点石斑鱼 <i>Epinephelus akaara</i>
棘茄鱼离尾吸虫 <i>A. halieutae</i> sp. nov.	四丝马鲛 <i>Eleutheronema tetradactylum</i>
大黄离尾吸虫 <i>A. vitellograndis</i> Layman, 1930	棘茄鱼 <i>Halieutaea stellata</i>
马鲛鲱鱼吸虫 <i>Clupenurus scomberomori</i> Wang, 1982	银鲳 <i>Stromateoides argentcus</i>
石斑颈源吸虫 <i>Derogenes epinepheli</i> Wang, 1982	蓝点马鲛 <i>Scomberomorus niphonius</i>
脉管颈源吸虫 <i>D. varicus</i> (Muller, 1784) Looss, 1901	赤点石斑鱼 <i>Epinephelus akaara</i>
黄鲫大体吸虫 <i>Dinosoma setipinae</i> Wang, 1982	黄鲛鲷 <i>Lophius litulon</i>
鲈双尾吸虫 <i>Dinurus scombri</i> Yamaguti, 1934	黄鲫 <i>Setipinna taty</i>
丽褶膜吸虫 <i>Ectenurus lepidus</i> Looss, 1907	鲈 <i>Pneumatophorus japonicus</i>
大黄鱼褶膜吸虫 <i>E. pseudosciaenae</i> Gu et Shen, 1978	大黄鱼 <i>Pseudosciaena crocea</i>
鲚鱼套颈吸虫 <i>Elytrophallus coiliae</i> Wang, 1982	大黄鱼 <i>Pseudosciaena crocea</i>
梅童鱼细尾吸虫 <i>Erilepturus collichthydis</i> Wang, 1982	刀鲚 <i>Coilia nasus</i>
海鲶官腺吸虫 <i>Hysterolecitha arii</i> Wang, 1982	棘头梅童鱼 <i>Collichthys lucidus</i>
红色官腺吸虫 <i>H. rosea</i> Linton, 1910	海鲶 <i>Arius sinensis</i>
多胞似官腺吸虫 <i>Hysterolecithoides multiglandularis</i> Tang et al, 1983	黄姑鱼 <i>Nibea albiflora</i>
乌鲳壮叶吸虫 <i>Johninophyllum formiae</i> Wang, 1982	短吻鲳 <i>Leiognathus brevirostris</i>
叫姑壮叶吸虫 <i>J. johnii</i> (Yamaguti, 1938) Skrz. et Gusch. 1954	乌鲳 <i>Formio niger</i>
沟鲈星腺吸虫 <i>Lecithaster atropi</i> sp. nov.	叫姑鱼 <i>Johnius</i> sp.
叉尾鲷指腺吸虫 <i>Lecithochirium aphare</i> Yamaguti, 1970	沟鲈 <i>Atropus atropus</i>
鳮指腺吸虫 <i>L. branchialis</i> (Stunkard et Nigrelli, 1934)	四丝马鲛 <i>Eleutheronema tetradactylum</i>
东山指腺吸虫 <i>L. dongshanensis</i> shen, 1985	带鱼 <i>Trichiurus haumela</i>
烟管鱼指腺吸虫 <i>L. fistulariae</i> Yamaguti, 1970	大黄鱼 <i>Pseudosciaena crocea</i>
鳮指腺吸虫 <i>L. holocentri</i> Yamaguti, 1970	鳞烟管鱼 <i>Fistularia petimba</i>
鲚指腺吸虫 <i>L. kawalea</i> Yamaguti, 1970	二长棘鲷 <i>Paragyrops edita</i>
大孔指腺吸虫 <i>L. magnaporum</i> Manter, 1940	带鱼 <i>Trichiurus haumela</i>
鳮指腺吸虫 <i>L. miichthydis</i> Wang, 1982	棘茄鱼 <i>Halieutaea stellata</i>
梦提塞指腺吸虫 <i>L. monticelli</i> (Linton, 1898) Skrz. et Gusch. 1955	鲷鱼 <i>Echenis naucrates</i>
	黄条鲷 <i>Seriola aureovittata</i>
	鳮 <i>Miichthys miiuy</i>
	中华须鳗 <i>Cirrhinuraena chinensis</i>

续表

虫 名	宿 主
海鳗指腺吸虫 <i>L. muraenesocis</i> Wang, 1982	海鳗 <i>Muraenesox cinereus</i>
太平洋指腺吸虫 <i>L. pacificum</i> Tang, 1981	斑点马鲛 <i>Scomberomorus guttatus</i>
大眼鲷指腺吸虫 <i>L. priacanthi</i> Yamaguti, 1953	灰海鳗 <i>Muraenesox cinereus</i>
变色指腺吸虫 <i>L. rufoviride</i> (Rud. 1819) Luhe, 1901	大黄鱼 <i>Pseudosciaena crocea</i>
沙带指腺吸虫 <i>L. savalae</i> sp. nov.	蓝点马鲛 <i>Scomberomorus niphonius</i>
马鲛指腺吸虫 <i>L. scomberomori</i> Wang, 1982	康吉鳗 <i>Conger japonicus</i>
带鱼指腺吸虫 <i>L. trichiuri</i> Gu et Shen, 1981	沙带鱼 <i>Trichiurus savala</i>
东山芽腺吸虫 <i>Lecithocladium dongshanensis</i> Shen, 1985	蓝点马鲛 <i>Scomberomorus niphonius</i>
截形芽腺吸虫 <i>L. excisiforme</i> Cohn, 1903	带鱼 <i>Trichiurus haumela</i>
切片芽腺吸虫 <i>L. excissum</i> (Rudolphi, 1819)	大黄鱼 <i>Pseudosciaena crocea</i>
钩齿芽腺吸虫 <i>L. harpodontis</i> Srivastava, 1937	中国鲳 <i>Stromatoides sinensis</i>
鳔芽腺吸虫 <i>L. ilishae</i> Mamaev, 1970	斑点马鲛 <i>Scomberomorus guttatus</i>
鳔芽腺吸虫 <i>L. miichthydis</i> Wang, 1982	青鳞鱼 <i>Harengula nymphaea</i>
小卵芽腺吸虫 <i>L. parviovum</i> Yamaguti, 1953	银鲳 <i>Stromateoides argenteus</i>
莆田芽腺吸虫 <i>L. putianensis</i> Wang, 1982	鳔 <i>Ilisha elongata</i>
龙头鱼独腺吸虫 <i>Lecithomonolium harpodi</i> sp. nov.	鳔 <i>Miichthys miuy</i>
带鱼肌囊吸虫 <i>Musculovesicula trichiuri</i> Gu et Shen, 1981	带鱼 <i>Trichiurus haumela</i>
大前列腺新隐尾吸虫 <i>Neopahanurus magniprotesticus</i> Tang et al, 1983	银鲳 <i>Stromatoides argenteus</i>
鳔新分腺吸虫 <i>Neodichadena mugilis</i> Tang et al, 1983	龙头鱼 <i>Harpodon nehereus</i>
福建后腺吸虫 <i>Opisthadena fujianensis</i> Tang et al, 1983	带鱼 <i>Trichiurus haumela</i>
海后腺吸虫 <i>O. marina</i> Tang, 1983	凤鲚 <i>Coilia mystus</i>
双边鱼副半尾吸虫 <i>Parahemiurus ambassicola</i> Tang et al, 1983	英氏鲻 <i>Mugil engeli</i>
鲚副半尾吸虫 <i>P. coiliae</i> Wang, 1982	英氏鲻 <i>Mugil engeli</i>
青鳞鱼副半尾吸虫 <i>P. harengulae</i> Yamaguti et al, 1983	眶棘双边鱼 <i>Ambassis gymnocephalus</i>
鳊副半尾吸虫 <i>P. hemirhamphi</i> Wang, 1982	眶棘双边鱼 <i>Ambassis gymnocephalus</i>
真正副半尾吸虫 <i>P. merus</i> (Linton, 1910) Woolock, 1935	七丝鲚 <i>Coilia grayii</i>
黄鱼副半尾吸虫 <i>P. pseudosciaenae</i> Shen, 1985	大眼青鳞鱼 <i>Harengula ovalis</i>
厦门异巨腺吸虫 <i>Paramacradenina xiamenensis</i> Tang, 1983	乔氏鳊 <i>Hemirhamphus gerogii</i>
星鳗充尾吸虫 <i>Plerurus asterocongeri</i> sp. nov.	鳔 <i>Ilisha elongata</i>
鳊充尾吸虫 <i>P. carangis</i> Yamaguti, 1942	大黄鱼 <i>Pseudosciaena crocea</i>
舌鳎充尾吸虫 <i>p. cynoglossi</i> Wang, 1982	英氏鲻 <i>Mugil engeli</i>
指状充尾吸虫 <i>P. digitatus</i> (Looss, 1899) Looss, 1907	星鳗 <i>Asteroconger mytiaster</i>
长尾充尾吸虫 <i>P. longicaudatum</i> (Yamaguti, 1953) Manter et Pritchard, 1960	带鱼 <i>Trichiurus haumela</i>
黄鱼充尾吸虫 <i>P. pseudosciaenae</i> Shen, 1985	宽体舌鳎 <i>Cynoglossus robustus</i>
前黄前睾吸虫 <i>Prosorchis provitellatus</i> Ku et Shen, 1964	油鲚 <i>Sphyræna pinguis</i>
中华离殖吸虫 <i>Separogermiductus sinicus</i> Tang, 1981	带鱼 <i>Trichiurus haumela</i>
长尾强尾吸虫 <i>Sterrhurus longicaudatus</i> sp. nov.	大黄鱼 <i>Pseudosciaena crocea</i>
海鳗住胃吸虫 <i>Stomachicola muraenesocis</i> Yamaguti, 1934	银鲳 <i>Stromateoides argenteus</i>
带鱼三腺吸虫 <i>Trilecithotrema trichiuri</i> Gu et Shen, 1981	鲈 <i>Lateolabrax japonicus</i>
福建泡官吸虫 <i>Uterovesiculurus fujianensis</i> Wang, 1982	黄鲛鳊 <i>Lophius litulon</i>
钩泡官吸虫 <i>U. hamati</i> (Yamaguti, 1934)	海鳗 <i>Muraenesox cinereus</i>
	带鱼 <i>Trichiurus haumela</i>
	鲈 <i>Lateolabrax japonicus</i>
	东洋鲈 <i>Nippon spinosus</i>
	长蛇鲻 <i>Saurida elongata</i>

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DIGENETIC TREMATODES OF FISHES FROM THE EAST CHINA SEA II. DESCRIPTION OF A NEW GENUS AND SEVEN NEW SPECIES OF HEMIURIDAE*

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ABSTRACT

In this paper a new genus and seven new species of the family Hemiuridae (Looss, 1899) Luhe, 1901 which exist in the fishes collected from the coast of the East China Sea are described.

The type specimens are deposited in the Institute of Oceanology Academia Sinica. All the measurements are in millimeters, but ova is in micrometers.

Lecithomonoium gen. nov.

Diagnosis: Hemiuridae, Hemiurinae. Body small, cuticle provided with serrated transversely fine lines. The body consists of body proper and tail. Oral sucker ventroterminal. Ace-tabulum near anterior extremity, large. Pharynx small, esophagus short, ceca reaching to posterior extremity but not tail. Testes tandem, in median part of body. Seminal vesicle large, parallel almost with testes. Pars prostatica well developed. Genital pore just posterior to intestinal bifurcation. Ovary usually in posterior half of body. Receptaculum seminis present. Vitellaria single, nearly rounded, posterior to ovary. Uterus not extending into tail. Eggs thick-shelled. Excretory vesicle Y-shaped, the arms united dorsally to pharynx. Parasitic in stomachs of marine teleosts.

Type species: *Lecithomonoium harpodi* sp. nov.

Remarks: This new genus resembles the Genus *Parahemiurus* but differs from it in the vitellaria being single. In the Hemiuridae, those genera with a single vitellaria are *Aphanurus* Looss, 1907, *Bunocotyle* Odhner 1928, *Chenia* Hus 1954, *Monolecithotrema* Yamaguti 1970, and *Neoaphanurus* Tang et al 1983, but they have not a tail at all, therefore a new genus *Lecithomonoium* gen. nov. should be erected here for the forms which have a single vitellaria and a tail.

Lecithomonoium harpodi gen. et sp. nov. (fig. 1)

Host: *Harpodon nehereus* (Hamilton-Buchanan)

Location: stomach

Locality: Lujiazhi, Zhoushan Inlands, Zhejiang Province

Date: May 18, 1981

Infection: 1 specimen from 1 host

Description: Body very small, consisting of the body proper and tail. Cuticle with trans-

* Contribution No. 1287 from the Institute of Oceanology, Academia Sinica.

verse line and serrated laterally. Body 0.935 in total length, body proper 0.799 long, 0.255 in width, at the middle of body; tail 0.136 long. Oral sucker ventroterminal, 0.038×0.051 , acetabulum 0.102 in diameter, distance between the oral sucker and acetabulum 0.068.

Pharynx small, 0.025×0.034 , esophagus short, ceca not extending into tail.

Testes rounded, tandem, anterior testis 0.068×0.072 , posterior testis 0.068×0.085 . Seminal vesicle eggplant-shaped, 0.102×0.081 , posterior to acetabulum. Pars prostatica 0.085 long. Hermaphroditic duct 0.051 long. Genital pore posterior to intestinal bifurcation.

Ovary ovoid, 0.085×0.119 , receptaculum seminis 0.085×0.068 and on the left side of ovary. Vitellaria single, compactly massive, nearly rounded 0.119×0.136 in size, posterior to ovary. Uterus not entering into the tail. Eggs elliptical, thick-shelled, $24-27 \times 9-12$.

***Aponurus eleutheronematis* sp. nov (fig. 2)**

Host: *Eleutheronema tetradactylum* (Shaw)

Location: stomach

Locality: Ningbo, Zhejiang Province

Date: May 4, 1980

Intection: 3 specimens from 1 of 2 hosts

Description: Body shuttle-shaped, 2.567—2.893 in length, 0.646—0.731 in width at the level of acetabulum, Cuticle smooth. Oral sucker terminal, $0.102-0.181 \times 0.153-0.204$. Acetabulum 0.306—0.340 in diameter, situated just in front of the middle of anterior half of body.

Pharynx small, $0.068-0.119 \times 0.068-0.102$. Esophagus $0.085-0.102 \times 0.034-0.051$. Ceca terminating at the posterior extremity.

Testes elliptical, tandem, anterior testis $0.211-0.255 \times 0.204-0.238$, posterior testis $0.187-0.238 \times 0.187-0.238$. Seminal vesicle clavate, $0.238-0.255 \times 0.064-0.170$, situated anterior of acetabulum. Pars prostatica $0.102-0.272$ long, surrounded by well-developed prostate cells. Hermaphroditic pouch fusiform $0.119-0.153 \times 0.034-0.136$, near to the esophagus. Genital pore open at the posterior end of the oral sucker.

Ovary irregular shaped, $0.170-0.204 \times 0.136-0.306$, anterior to the right testis. Receptaculum seminis large, $0.238-0.391 \times 0.221-0.340$, anterior side to ovary. Vitellaria rounded, seven in number, each $0.102-0.119$ in diameter, immediately behind ovary. Uterus descending toward and closing posterior extremity, then ascending toward hermaphroditic pouch. Eggs $27-30 \times 9-12$.

Discussion: This species resembles *A. acropomatis* Yamaguti 1938 but differs from it in its larger body and receptaculum seminis and in its smaller eggs.

***Aponurus halieutae* sp. nov. (fig. 3)**

Host: *Halieutaea stellata* (Vahl)

Location: stomach

Locality: Ningbo, Zhejiang Province

Date: May 7, 1980

Intection: 2 specimens from 1 of 4 hosts

Description: Body with thick smooth cuticle, 2.975—3.009 in length and 0.782—0.816 in width at the level of the acetabulum. Oral sucker $0.153-0.204 \times 0.170-0.221$. Acetabulum rounded, 0.340—0.425 in diameter at the middle of anterior half of body.

Pharynx 0.085×0.119 , esophagus short, ceca terminating near posterior extremity.

Testes obliquely tandem, situated at the posterior end of anterior half of body, left testis $0.170-0.255 \times 0.204-0.255$, right testis $0.119-0.221 \times 0.187-0.221$. Seminal vesicle calabash-shaped, $0.170-0.187 \times 0.102-0.119$, situated just in front of the acetabulum. Pars prostatica $0.102-0.204$ long. Hermaphroditic pouch ovoid, 0.119×0.170 . Genital pore opens at the posterior end of oral sucker.

Ovary elliptical, $0.153-0.204 \times 0.136-0.306$, situated at the anterior part of posterior half of body. Receptaculum seminis large, $0.323-0.578 \times 0.289-0.493$ between posterior testis and ovary. Vitellaria consisting of seven lobes, each $0.119-0.221 \times 0.119-0.238$ in size. Uterus first descending toward and reaching posterior extremity, then ascending toward hermaphroditic pouch. Eggs $22-24 \times 8-9$.

Discussion: This species resembles to *A. rhinoplagusiae* Yamaguti 1934, but differs from it in its larger size body, ovary and receptaculum seminis, smaller sized testes and eggs. The position of the genital pore in the new form is also different.

***Lecithaster atropi* sp. nov. (fig. 4)**

Host: *Atropus atropus* (Bloch et Schneider)

Location: stomach

Locality: Ningbo, Zhejiang Province

Date: June 5, 1975

Intection: 2 specimens from 1 of 4 hosts

Description: Body is small, clavate, $2.227-3.094$ long, $0.306-0.442$ wide at level of the acetabulum. Oral sucker terminal, elliptical, $0.221-0.306 \times 0.238-0.255$. Acetabulum cup-shaped, smaller than oral sucker, $0.204-0.272 \times 0.153-0.255$ at $0.408-0.527$ from anterior extremity. Sucker ratio 1.25:1.

Pharynx $0.085-0.221 \times 0.068-0.153$, esophagus $0.051-0.085 \times 0.051-0.068$, ceca extending to posterior end of body.

Testes olive-shaped, tandem, anterior testis $0.119-0.306 \times 0.136-0.153$, posterior testis $0.102-0.238 \times 0.102-0.187$, at middle part of half of body. Seminal vesicle eggplant-shaped, $0.221-0.306 \times 0.051-0.068$. Pars prostatica $0.204-0.510$ long, surrounded by a large number of prostate cells. Hermaphroditic duct enclosed in hermaphroditic pouch, $0.068-0.102 \times 0.051$ in size. Genital pore opens near the pharynx.

Ovary consisting of three lobes, each $0.102-0.221 \times 0.085-0.136$ in size, anterior to posterior half of body. Receptaculum seminis ovoid, $0.085-0.153 \times 0.051-0.102$, behind the ovary. Vitellaria consisting of seven follicles, each 0.085×0.102 in size. Uterus descending to posterior extremity, the ascending, and anteriorly opens at the hermaphroditic pouch. Eggs $18-21 \times 9-12$.

Discussion: This species resembles to *L. chrysophrysi* Gupta et Ahmad, 1976 but differs from the latter in its large sized body, testes and ovary, in its eggplant-shaped seminal vesicle instead of saccular, in the position of receptaculum seminis being below ovary, genital pore near pharynx and in its smaller sized eggs.

***Plerurus asterocongeri* sp. nov. (fig. 5)**

Host: *Astroconger myriaster* (Brevoort)

Location: stomach

Locality: Ningbo, Zhejiang Province

Date: June 2, 1980

Intection: 10 specimens from 1 host

Description: Body large, ellipical. Cuticle smooth. Body proper 6.068—9.928 long, 2.261—3.655 wide at level of acetabulum. Tail 0.646—1.224 long. Oral sucker sub-terminal, 0.323—0.493×0.425—0.714, preoral lobe 0.017—0.119 long. Acetabulum 0.765—1.224×0.833—1.285 in the middle of anterior half of body. Sucker ratio 1:1.9—2.1.

Pharynx 0.204—0.340×0.204—0.374, esophagus 0.064—0.187×0.051—0.170, ceca usually not entering tail.

Testes symmetrically just behind the acetabulum, left testis 0.561—0.884×0.510—0.784, right testis 0.510—0.887×0.510—0.867. Seminal vesicle eggplant-shaped 0.663—1.360×0.204—0.391 at anterior of acetabulum, pars prostatica 0.153—0.476 long. Hermaphroditic duct developed, enclosed in hermaphroditic pouch 0.187—0.340×0.238—0.340. Genital pore opening behind intestinal bifurcation.

Ovary globular, 0.391—0.578×0.544—0.714, slightly anterior to posterior half of body. Vitellaria finger-shaped, with an overall measuring of 0.425—0.850×0.697—1.513, four on the right and three on the left. Uterus extending into posterior end of body proper. Eggs ellipical, 18—21×8—9.

Discussion: This species resembles to *P. sphyraenae* Yamaguti 1970 but differs from that species in its plump body, large size genital organs and eggs, ceca not extending into tail, and in its testes being at sides of the acetabulum.

***Sterrhurus longicudatus* sp. nov. (fig. 6)**

Host: *Lophius litulon* (Jordan)

Location: stomach

Locality: Shenjiamen, Zhoushan Islands, Zhejiang Province

Date: April 7, 1960

Infection: 25 specimens from 1 host

Description: Body large, 9.419—13.093 long. Cuticle smooth. Body proper 5.812—8.799 long, 1.578—2.021 wide at posterior of acetabulum. Oral sucker ventroterminal, 0.300—0.418×0.451—0.534, pre-oral lobe 0.017—0.067 long. Acetabulum larger than oral sucker, 0.969—1.169×0.935—1.169, anterior to anterior half of body proper.

Pharynx 0.167—0.200×0.200—0.251, esophagus 0.084—0.150×0.033—0.084, ceca extending into tail.

Testes symmetrically just behind the acetabulum, left testis 0.340—0.527×0.425—0.544, right testis 0.425—0.544×0.391—0.544. Seminal vesicle clavate, 0.765—1.173×0.187—0.340, pars prostatica and hermaphroditic pouch surrounded by prostate cells. Ejaculatory vesicle 0.136—0.187×0.068—0.085, genital pore situated at posterior of pharynx.

Ovary ellipical, 0.267—0.551×0.451—0.568, in the front of posterior part of body proper. Receptaculum seminis oval, 0.117—0.251×0.134—0.334, behind the ovary. Vitellaria lobes seven in number with an overall measuring of 0.595—0.850×0.510—0.884, four on the left and three on the right. Uterus coils terminating at posterior end of body proper. Eggs 15—18×9—12.

Discussion: This species is the biggest in the members of the genus *Sterrhurus*, its tail exceeds half of the body in length, its acetabulum is 3 times larger than oral sucker, its vesicula seminalis is sinuous and doesn't shrink, and its uterus does not extend into tail.

***Lecithochirium savalae* sp. nov.**(fig. 7)

Host: *Trichiurus savala* Cuvier et Valenciennes

Location: stomach

Locality: Xiamen, Fujian Province

Date: April 1, 1982

Infection: 1, 1, 1, 2 and 4 specimens from 5 of 60 hosts

Description: Body tubu-shaped, 3.264—3.895 long, body proper 2.771—3.723 long, 0.408—0.748 wide, tail 0.221—0.376 long. Oral sucker subterminal 0.085—0.136 $\times$ 0.102—0.153, preoral lobe 0.020—0.051 long. Acetabulum round, 0.323—0.442 in diameter, situated in the middle of anterior of body proper. Sucker ratio 1:3.1—3.5; preacetabulum pit absent.

Pharynx 0.036—0.085 in diameter, esophagus 0.051—0.068 $\times$ 0.034, ceca terminating at 2/3 of body proper.

Testes obliquely tandem, anterior testis 0.153—0.221 $\times$ 0.102—0.170, posterior testis 0.153—0.255 $\times$ 0.102—0.221. Seminal vesicle calabash-shaped, trepartite, 0.170—0.306 $\times$ 0.102—0.119, anterior to acetabulum. Pars prostatica 0.034—0.068 long. Hermaphroditic pouch globular, 0.068—0.102 in diameter. Genital pore posterior to intestinal bifurcation.

Ovary 0.136—0.306 $\times$ 0.170—0.272, situated at posterior part of middle line of body proper. Vitellaria finger-shaped, with an overall measuring of 0.187—0.289 $\times$ 0.187—0.391, three on the left and four on the right, behind the ovary. Uterus not entering tail. Eggs 15—18 $\times$ 10—12.

Discussion: This species differs from *L. acutum* Chauhan 1945 in its smaller size body and seminal vesicle not extending to posterior of acetabulum and in its larger size eggs. It differs also from *L. synodi* Manter, 1931 in lacking pre-acetabulum pit, having a sucker ratio of over 1:3, and in its larger size eggs.