

Reports

---

1987

**Monogenetic trematodes from the Southern Pacific Ocean  
Polyopisthocotyleids from the Australian fishes, the subfamily  
Polylabrinae and Microcotylinae**

W. A. Dillon

William J. Hargis Jr.  
*Virginia Institute of Marine Science*

Antonio E. HARRISES

Follow this and additional works at: <https://scholarworks.wm.edu/reports>



Part of the [Aquaculture and Fisheries Commons](#), [Marine Biology Commons](#), [Oceanography Commons](#), and the [Zoology Commons](#)

---

**Recommended Citation**

Dillon, W. A., Hargis, W. J., & HARRISES, A. E. (1987) Monogenetic trematodes from the Southern Pacific Ocean Polyopisthocotyleids from the Australian fishes, the subfamily Polylabrinae and Microcotylinae. Translation Series. Virginia Institute of Marine Science, College of William and Mary.  
<https://scholarworks.wm.edu/reports/26>

This Report is brought to you for free and open access by W&M ScholarWorks. It has been accepted for inclusion in Reports by an authorized administrator of W&M ScholarWorks. For more information, please contact [scholarworks@wm.edu](mailto:scholarworks@wm.edu).

Monogenetic Trematodes from the southern Pacific Ocean.

Polyopisthocotyleids from Australian Fishes.

Subfamilies Polylabrinae (Genus Polylabrioides)

and Micrototylineae (Genus Neobivagina).

by

William A. Dillon, William J. Hargis, Jr., and Antonio E. HARRISES

English Version

of the

paper which first appeared in the

Russian language periodical

PARAZITOLOGICHESKIY SBORNIK

(Collected Papers in Parasitology  
of the Zoological Institute of the  
Academy of Sciences of the USSR)

Volume 33 (1985)

pp. 83-87

Zoological Institute of the USSR Academy of Sciences

Leningrad, USSR

Edited by

William A. Dillon and William J. Hargis, Jr.

Translation Series Number 33 of the

Virginia Institute of Marine Science

The College of William and Mary

Gloucester Point, Virginia

23062, USA

July, 1987

Monogenetic Trematodes from the southern Pacific Ocean.  
Polyopisthocotyleids from Australian fishes.  
Subfamilies Polylabrinae (Genus Polylaborides) and  
Subfamily Microcotylinae (Genus Neobivagina).

By

William A. Dillon<sup>2</sup>, William J. Hargis, Jr.<sup>3</sup>, and Antonio E. Hargis<sup>4</sup>

ABSTRACT: This eighth of a series of monogenetic trematodes from the Southern Pacific Ocean discusses two species of Monogenea from Australian waters. Polylabroides mylionis n. sp., from the gills of Mylio butcheri, is described. Neobivagina agonostomi (Sandars, 1945) Dillon and Hargis, 1965, from the gills of Aldrichetta forsteri, is redescribed; a new locality record is reported for Neobivagina agonostomi.

---

<sup>1</sup> Contribution from the Biology Department of the University of Tennessee at Martin, Martin, Tennessee 38238 and No. 1052 from Virginia Institute of Marine Science, College of William and Mary, Gloucester Point, Virginia 23062.

<sup>2</sup> Address: Department of Biological Sciences. The University of Tennessee at Martin, Martin, Tennessee 38238.

<sup>3</sup> Address: School of Marine Science, College of William and Mary, Gloucester Point, Virginia 23062.

<sup>4</sup> Address: Department of Biology, Salem State College, Salem, Massachusetts 01970.

## INTRODUCTION

This is the eighth paper of a series on monogenetic trematodes of fishes from the southern Pacific Ocean. The scope, organization, and purpose are the same as for the first installment (Dillon and Hargis, 1965a). Specific information on the Australian collection can be found in part V of this series (Lawler and Hargis, 1968).

## MATERIALS AND METHODS

Methods used in the preservation and the preparation of the monogenetic flukes for identification and study are essentially the same as those given by Dillon and Hargis (1965a).

Techniques for measuring soft parts and hard parts are the same as those given by Dillon and Hargis (1965b). In indicating these measurements the mean is given, followed by the range (minimum and maximum) in parentheses. The number of measurements used in the calculations appears in parentheses before these data. All measurements are given in microns.

Camera lucida and microprojector drawings were used to facilitate identification and in preparation of the plates.

## RESULTS AND DISCUSSION

Order Monogenea Carus, 1863

Suborder Polyopisthocotylea Odhner, 1912

Superfamily Microcotyloidea Unnithan, 1957

Family Microcotylidae Taschenberg, 1879

Subfamily Polylabrinae Lebedev, 1976

Polylabroides mylionis n. sp.

(PLATE VIII, Figs. 55-58)

Host: Mylio butcheri Munro, Southern Bream; family Sparidae.

Habitat: Gills.

Locality: Perth, Western Australia; Swan River.

Number examined: 8 adults; 1 juvenile.

Holotype: USNM Helm. Coll. No. 71957.

Paratypes: USNM Helm. Coll. No. 71958 (2 specimens).

Description: Body elongate, fusiform, (7) 3,042 (2,576-3,606) long by (7) 320 (258-368) wide. Buccal suckers septate, (8) 34 (29-46) long by (8) 55 (48-67) wide, with sclerotized, tooth-like papillae on rims. Posthaptor a cotylophore not distinctly delineated from body proper, (7) 1,021 (828-1,362) long, armed with 41-56 pairs of clamps in two nearly equal ventrolateral rows. Clamps (Fig. 57) similar in shape, dissimilar in size; anteriormost clamps (7) 54 (37-73) long by (7) 32 (21-45) wide; middle clamps (8) 81 (75-90) long by (8) 45 (39-50) wide; posteriormost clamps (7) 42 (41-44) long by (7) 30 (28-34) wide.

Pharynx (8) 40 (37-42) long by (8) 32 (30-35) wide; esophagus relatively long, without diverticula. Gut bifurcating at level of genital atrium; crura not confluent posteriorly, extending into posthaptor; left crus extending farther than right.

Testes postovarian, 6-9 in number, usually in a single, longitudinal row; vas deferens extending anteriorly in midline to cirrus. Genital atrium (8) 50 (46-55) long by (8) 50 (47-54) wide, located (7) 262 (216-303) from anterior end of body. Cirrus armed with dissimilar spines; 2 large spines (8) 27 (23-33) long; 8 small spines (8) 11 (9-13) long.

Ovary tubular, folded; distal end of oviduct expanded (apparently serving as a seminal receptacle). Vaginal pore midventral, unarmed; vaginal duct extending posteriorly for some distance prior to bifurcating and fusing with vitelline ducts, forming vitellovaginal reservoir. Vitellaria coextensive with intestinal crura. Eggs fusiform, with filaments at both ends: eggs (2) 191 (184-198) long by (2) 64 (57-71) wide.

Discussion: Polylabroides mylionis n. sp. can be distinguished from P. biungulatus Mamaev and Parukhin, 1976 as follows: body 2,576-3,606 long rather than 4,460-4,930; buccal suckers 29-46 by 48-67 rather than 50-57 by 82-90; 41-56 pairs of clamps rather than 80 pairs; 13-16 pairs of testes rather than 6-9 pairs; slight difference in cirrus complex; clamps without sclerotized extension at distal end of center piece; and, host.

Subfamily Microcotylinae Monticelli, 1892

Genus Neobivagina Dillon and Hargis, 1965, diag. emend.

Diagnosis: Microcotylidae. Microcotylinae. Posthaptor variable in shape, symmetrical or subsymmetrical. Genital atrium and/or cirrus armed with spines. Paired vaginal pores present, usually situated dorsolaterally; vaginal pores usually heavily muscularized, armed or unarmed. Other characters as for subfamily.

Discussion: The vaginal openings of this genus are dorsolateral rather than ventrolateral as described by Dillon and Hargis (1965b).

Neobivagina agonostomi (Sandars, 1945)

Dillon and Hargis, 1965

(PLATE VIII, Figs. 51-54)

Host: Aldrichetta forsteri (Cuv. and Val.), yellow-eyed mullet; family Mugilidae.

Habitat: Gills.

Localities: (1) Port Kenney, South Australia (new locality record); 9 miles NW Port Kenney (1-2 fms.; sand-rock), (2) Port Kenney, South Australia; Baird Bay (1 fm.; mud) and (3) Bunbury, Western Australia; Leschenault Inlet (1 fm.; weed-mud).

Number studied: 30.

Homoeotypes: USNM Helm. Coll. No. 71956 (5 specimens).

Description: Body elongate, somewhat fusiform, (11) 3,740 (2,850-4,680) long by (11) 590 (500-680) wide. Pair of conspicuous lateral projections near level of genital atrium. Buccal suckers septate, (12) 56 (50-62) long by (12) 65 (58-68) wide, with a single row of sclerotized, tooth-like papillae on rims. Posthaptor a cotylophore weakly delineated from body proper, (11) 1,050 (910-1,200) long, armed with 29-33 pairs of clamps. Clamps (Fig. 53) similar in shape, dissimilar in size. Antermost clamps (4) 53 (35-61) long by (4) 33 (27-39) wide; middle clamps (9) 82 (77-88) long by (9) 58 (55-60) wide; posteriormost clamps (6) 52 (48-58) long by (6) 40 (34-46) wide.

Pharynx (11) 58 (52-63) long by (11) 54 (47-59) wide. Esophagus relatively long, with diverticula. Gut bifurcating at level of genital atrium; posterior ends of crura not confluent, with left crus extending farther into posthaptor than right.

Testes postovarian, 20-28 in number; vas deferens extending anteriorly in midline to genital atrium. Genital atrium consisting of two laterally placed reniform, muscular pads, each armed with 9-14 spines; atrial spines (12) 26 (21-28) long. Cirrus bulbous, armed with 10-14, usually circularly arranged, spines, (12) 15 (11-18) long.

Ovary tubular, folded. Vaginal openings dorsolateral, unarmed, located (11) 354 (316-398) from genital atrium; vaginal ducts passing posteromedially, uniting with vitelline ducts forming Y-shaped vitellovaginal reservoir; vaginal

ducts usually filled with sperm. Vitellaria coextensive with intestinal crura. Eggs fusiform to spherical, with filament at one end; egg (1) 167 long by (1) 94 wide.

Discussion: Sandars (1945) described N. agonostomi from the gills of Aldrichetta forsteri (Agonostomus f.) collected from Western Australia. The above redescription is given because the original figures and description of the adult morphology are incomplete. The present population differs from that described by Sandars (1945) as follows: (1) body 500-560 wide rather than 1,040 wide, (2) posthaptor 910-1,200 long rather than 640 long, (3) clamps appear to be slightly smaller, (4) buccal suckers septate rather than aseptate, (5) buccal suckers 50-62 long by 58-68 wide rather than 48 long by 96 wide, and (6) pharynx 52-63 long by 47-59 wide rather than 96 long by 64 wide.

According to Sandars (1945), this species has a pair of dorsal, subcircular suckers. She also indicated that these areas are not vaginal openings. This observation appears to be in error because in our population sperm-laden vaginal ducts extend from these areas to the vitellovaginal reservoirs--thus indicating that these areas are definitely vaginal pores.

Acknowledgments: Collection and processing of the Australian host material were supported by grants G-13853 (with amendments), GA-235 and GA-64 under the United States Antarctic Research Program of the National Science Foundation; Dr. William J. Hargis, Jr., principal investigator.

The authors wish to thank the following individuals for their valuable contributions to this study. Dr. William Stanley Wilson and Mr. William J. Saunders, formerly of the Parasitology Section of the Virginia Institute of Marine Science, for their part in the collection of the Australian hosts; Drs. B. Iv. Lebedev and Yu. Mamaev, Institute of Biology and Pedology, Academy of Sciences USSR, Vladivostok, and Mr. David E. Zwerner, VIMS, for reviewing the manuscript; Dr. Adrian R. Lawler, Gulf Coast Research Laboratory, Ocean Springs, MS, for processing the parasite specimens for study; and, Dr. Patrick Taylor, Department of History, UTM, Martin, TN, for the translation of pertinent Russian literature.



## REFERENCES

- Dillon, W. A. and W. J. Hargis, Jr. 1965a. Monogenetic Trematodes from the Southern Pacific Ocean. I. Monopisthocotylea from New Zealand fishes. Biol Antarctic Seas II, Ant Res Ser 5:229-249.
- \_\_\_\_\_, 1965b. Ibid. II. Polyopisthocotyleids from New Zealand fishes; the families Discocotylidae, Microcotylidae, Axinidae, and Gastrocotylidae. Biol Antarctic Seas II, Ant Res Ser 5:251-280.
- Lawler, A. R. and W. J. Hargis, Jr. 1968. Ibid. V. Monopisthocotyleids from Australian fishes, the subfamily Trochopodinae. Proc Biol Soc Wash 81:367-402.
- Mamaev, Yu. L. and A. M. Parukhin. 1976. On the genus Polylabris Euzet and Cauwet, 1967 and some closely allied species of microcotyleids (Monogenoidea:Microcotylidae). Parasitology 10(3), Acad Sci USSR, pp. 245-254.
- Sandars, D. F. 1945. Five new microcotylids from fish from Western Australian waters. J Roy Soc W Australia. 29:107-135.

EXPLANATION OF PLATE VIII

Neobiyagina agonostomi (Sandars, 1945)

Dillon and Hargis, 1965

Figures:

51. Whole mount, ventral view.
52. Genital corona.
53. Clamp, ventral view.
54. Egg.

Polylabroides mylionis n. sp.

Figures:

55. Whole mount, ventral view.
56. Genital corona.
57. Clamp, ventral view.
58. Egg.

