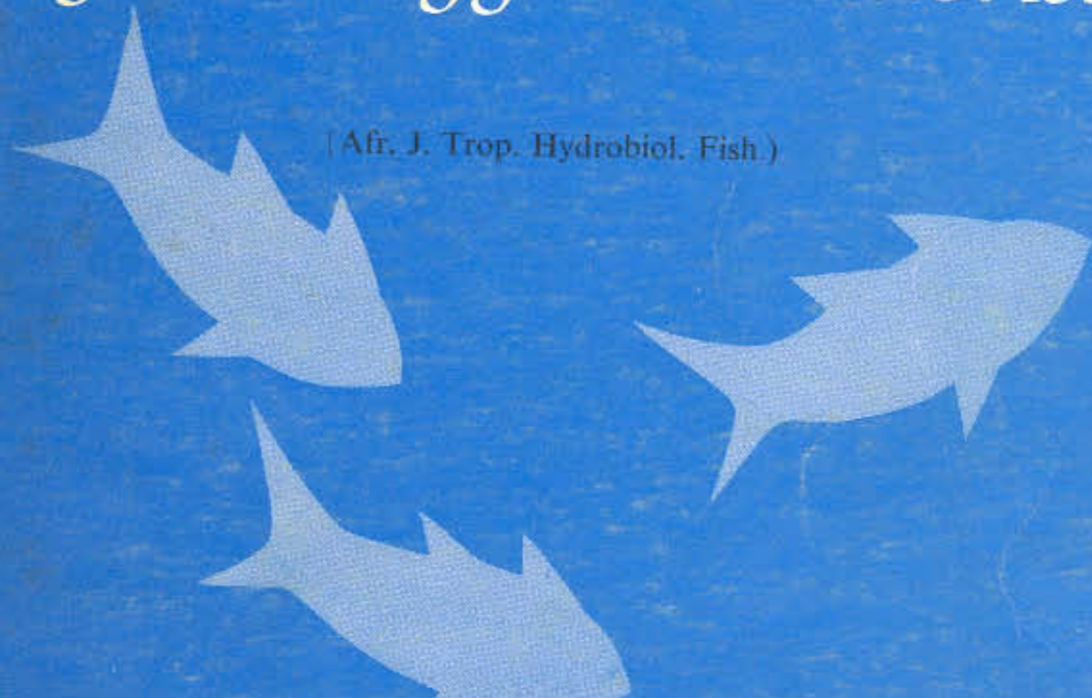


THE
AFRICAN JOURNAL
OF

Tropical

Hydrobiology and Fisheries

(Afr. J. Trop. Hydrobiol. Fish.)



provided by

through to you

and similar papers at core.ac.uk

No. 1

Vol. 2

1972

East African Literature Bureau

NAIROBI

DAR ES SALAAM

KAMPALA

SPONSORS

Hydrobiologists from East, Central and West Africa with substantial support from other African countries, Fishery Scientists in the United States, Canada, U.K., Europe, Soviet Union and Israel.

EDITOR

Dr. J. Okedi, Director, E.A.F.F.R.O., Jinja, Uganda.

EDITORIAL BOARD

Mr. M. Abolarin, Co-Manager, Kainji Lake Project, Lagos, Nigeria.

Mr. J. Kambona, Chief Fisheries Officer, Dar es Salaam, Tanzania.

Mr. J. Mubanga, Director, Fisheries Division, Chilanga, Zambia.

Dr. L. Obeng, Director, Institute of Aquatic Biology, Achimota, Ghana.

Mr. N. Odero, Director of Fisheries, Nairobi, Kenya.

Mr. S.N. Semakula, Chief Fisheries Officer, Entebbe, Uganda.

Professor W.B. Banage, Makerere University, Kampala, Uganda.

Mr. R.E. Morris, Director, E.A.M.F.R.O., Zanzibar.

Dr. T. Petr, Senior Lecturer in Hydrobiology, Makerere University, Kampala, Uganda.

Professor Mohamed Hyder, University of Nairobi, Kenya.

Professor, A. F. De Bont, Université de Kinshasa, Kinshasa XI, République Démocratique du Zaïre

PROGRAMME

The African Journal of Tropical Hydrobiology and Fisheries will only accept original and well supported ideas on techniques, methodology and research findings from scientists, fishery officers, fishery economists and sociologists.

The Journal will therefore strengthen the African research scientist by making research material available and also increasing the awareness and utility of aquatic resources.

Its quality will conform to International standards, and will be published in English and French.

MANUSCRIPT ADDRESS

Manuscripts should be addressed to E.A.F.F.R.O., East African Freshwater Fisheries, Research Organisation, East African Community, Box 343, Jinja, Uganda.

REPRINTS

Authors will receive 60 reprints free of charge. Extra reprints may be procured on cost.

PUBLISHER

East African Literature Bureau, P.O. Box 30022, Nairobi, Kenya.

ISSUES

The Journal consists of one volume a year, consisting of two issues with approximately eighty pages each.

SUBSCRIPTION

Annual subscription within East Africa Sh. 35. Outside East Africa, East African Sh. 70, US \$ 10.00

A NOTE ON SOME PARASITES OF *MERLUCCIOUS CAPENSIS* (PISCES) AND THEIR ZOOGEOGRAPHICAL SIGNIFICANCE

During the Southeastern Atlantic Expedition of the German fishery research vessel "Walther Herwig" in 1967 the main emphasis lay on selective fishing of the South African hake *Merluccius capensis* (von BRANDT 1967). Some of the fish were found to be infested by ecto—and endoparasites both of which were collected whenever possible. Large plerocercoids of *Dibothriorhynchus grossum* whose adult stage lives in the South Atlantic Ocean in *Lamna cornubica* (L. SZIDAT, personal communication) were quite common as were cysticeroids of a *Tetrarhynchus* sp., which had also been reported in *Cynoscion striatus* off the Argentinian coast (MACDONAGH 1927, cited in Szidat, personal communication). Brownish nematodes were infesting the ovaries of several fish, but could not be identified. The most common ectoparasite to be observed was the parasitic isopod *Livoneca raynaudii* (fam. Cymothoidae) whose early larval stages were also found.

Unfortunately the total number of parasites was not very large and therefore any conclusions drawn from the findings must be tentative. However, the value in studying the parasite fauna of Gadid-fishes has been demonstrated convincingly by SZIDAT (1961), who showed that the South Eastern American species *Merluccius hubbsi* and *M. gayi* had more parasites in common with fishes from the North West Pacific rather than with forms from the North Atlantic. He concluded that the *Merluccius* population of the large Argentinian shelf originated from a Pacific stock and not, as was thought before, from a North Atlantic one. The occurrence of *Dibothriorhynchus grossum* in *Merluccius hubbsi* (SZIDAT 1961) and of *Tetrarhynchus* cysticeroids in

Cynoscion striatus (both from the South West Atlantic), and their joint appearance in *Merluccius capensis* (from the South East Atlantic) may favour the view of a pleistocenian migration of *Merluccius* from South America to South Africa (SZIDAT 1961, p. 12) (Figure 1).

The finding of *Livoneca raynaudii* also agrees with this theory although this parasite was mainly reported from the South Pacific (SCHIOEDTE and MEINERT 1884) and Australia (HALE 1926). More recently it has also been reported from Chile (MENZIES 1962) and India (PILLAI 1954). Whether, however, the different populations show any subspecific characteristics or whether *Livoneca raynaudii* truly represents a worldwide species has to be decided by comparative studies of the parasites. Nevertheless it does not seem completely impossible that this species may originate in the Australo-Pacific area and has extended its habitat eastwards simply by following its fish hosts. Similar results have recently been given by ESCHMEYER and HUREAU (1971) for the two fishes *Sebastes mouchezi* and *S. capensis*. It is also known that before the last ice age (pliocene), migration of fishes from the Australian region to Southwest American waters has taken place (RANDALL 1970). Pleistocenian migrations of Gadid-fishes from the Pacific around South America into the Atlantic have also been confirmed (SZIDAT 1961).

RESUME

Quelques parasites de l'extérieur et de l'intérieur sont trouvés au Merluce sud-africain (*Merluccius capensis*) du l'Atlantique de Sud-Est, qui sont identique avec des

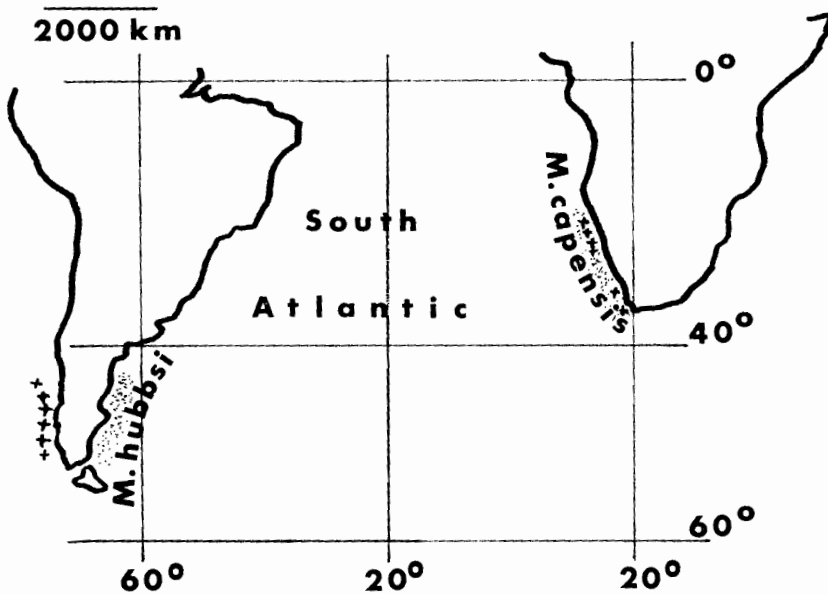


Figure 1. Distribution of species. Crosses: *Livoneca raynaudii*; Dots: *Dibothriorhynchus grossum* and *Tetrarhynchus cysticercoids*.

parasites connus des poissons de l'Atlantique de Sud-Ouest. Les résultats confirment la thèse d'une migration pleistocénienne des poissons de l'Amérique du Sud à l'Afrique du Sud.

ZUSAMMENFASSUNG

Einige Endo- und Ektoparasiten des Süd-afrikanischen Seehechts *Merluccius capensis* vom Süd-Ost-Atlantik sind identisch mit Formen, die von Fischen des Süd-West-Atlantiks bekannt sind. Die Ergebnisse bekräftigen die Theorie, nach der im Pleistozän Wanderungen von Fischen des südamerikanischen Raumes in den süd-afrikanischen stattgefunden haben sollen.

ACKNOWLEDGEMENTS: The author wishes to thank Prof. L. Szidat (Buenos Aires) for the identification of most of the material and Dr. Th. Bowman (Washington) for references to literature on *Livoneca raynaudii*.

V. B. MEYER-ROCHOW

*Inst. f. Hydrobiologie u. Fischereiwissenschaft,
Olbersweg, West Germany.*

Present address:

*Australian National University,
Canberra A. C. T. 2601,*

*Research School of Biology Science, Neurobiology,
P.O. Box 475, Australia.*

REFERENCES

- Brandt, A. von (1967). Untersuchungen des FFS "Walther Herwig" im südöstlichen Atlantik. *Inf. Fischwirtschaft* 14 (3): 104-124.
- Eschmeyer, W. N. and J. C. Hureau (1971). *Sebastes mouchezi*, a senior synonym of *Heliocolenus tristanensis*, with comments on *Sebastes capensis* and zoogeographical considerations. *Copeia* (3): 576-579.
- Hale, H. M. (1926). Review of Australian isopods of the cymothoid group. *Trans. Roy. Soc. S. Australia* 50: 201-234.
- MacDonagh, E. (1927). Parasitos de peces comestibles. *Semana Medica* 34: 373-376. [cited in Szidat, personal communication].
- Menzies, R. J. (1962). The zoogeography, ecology and systematics of the Chilean marine isopods.

- Lund Universitet Acta Arsskrift, Afdelning 2*, 57 (11): 1-162.
- Pillai, N. K. (1954). A preliminary note on the Tanaidaceae and Isopoda of Travancore. *Bull. Res. Inst. Univ. Travancore (Kerala)*, 3c: 1-21.
- Randall, J. E. (1970). Easter Island—An ichthyological expedition. *Oceans* 3 (3): 48-59.
- Szidat, L. (1961). Versuch einer Zoogeographie des Süd-Atlantik mit Hilfe von Leitparasiten der Meeresfische. *Parasitolog. Schr. Reihe* (13): 1-98.
- Schioedte, J. C. and F. Meinhert (1884). Symbolae ad monographiam Cymathoarum Crustaceorum Isopodum Familiae, iv. Cymothoidae. *Naturh. Tidskr.* 14: 221-454.