ANNUAL PROGRESS REPORT

SEATO Medic Study No. 22	Studies on *Opisthorchis viverrini* in Thailand - The Fish Intermediate Hosts
Project No. 3A 025601 A 811	Military Medical Research Program S. E. Asia
Task 01:	Military Medical Research Program S. E. Asia
Subtask 01:	Military Medical Research Program SEASIA (Thailand)
Reporting Installation:	US Army-SEATO Medical Research Laboratory, APO 146, San Francisco, California. Division of Medical Research Laboratories Department of Medical Zoology
Period Covered by Report:	1 April 1963 to 31 March 1964
Principal Investigator:	Major Dale E. Wykoff, MSC
Associate Investigator:	Dr. Chamlong Harinasuta*
Reports Control Symbol:	MEDDH-288
Security Classification:	UNCLASSIFIED

* Bangkok School of Tropical Medicine.

ABSTRACT

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The purpose of this study was to determine which fresh-water fish act as second intermediate hosts of *O. viverrini* in Thailand. Those species found to harbor the metacercariae were then identified by the Department of Fisheries. *Puntius orphoides* proved to have the largest average number per fish (79) while *Hampula dispar* was the most frequently infected species (74% of all fish had one or more metacercariae). In all, 9 species were found to act as second intermediate hosts of the liver fluke.

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BODY OF REPORT

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Final Report

Objective: This study was designed to identify the various species of fresh water fish which act as intermediate hosts of O. viverrini in Thailand.

Description: In areas where the liver fluke was known to be particularly prevalent in the human population, fish were caught from streams and purchased from markets. Each was carefully teased apart and the flesh examined for metacercariae.

Progress: Well over 3000 fish were examined during the past year. Of these, nine species were found to be infected. All nine are frequently eaten raw by the villagers in the northeast of Thailand. A total of 426 specimens of Puntius orphoides (Pla Pok) were examined. Of these, 276 (65%) were positive. Each fish harbored an average of 79 metacercariae of O. viverrini. A total of 205 specimens of Hampula dispar (Pla Suud) were examined and 152 (74%) were positive. The

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average number of metacercariae was 22. Other species found positive were Cyclocheilecthys siaja (Pla Measadaeng) 51%; Esomus metallicus (Pla Sew) 10%; Puntius gonionotus (Pla Drapein Kaw) 3%; P. proctozysron (Pla Gramong) 8%; P. viehoever (Pla Drapein Sai) 22%; Osteochilus sp. (Pla Na Mong) 4%; and Labiobarbus lineatus (Pla Sau Sai) 3%. Results are summarized in the following Table.

EXAMINATION OF FRESH WATER FISH FROM NORTHEAST THAILAND FOR THE METACERCARIAE OF OPISTHORCHIS VIVERRINI

Scientific Name	Common Name	Number Examined	With.O. v. No.	%	Ave. No. per fish
Puntius orphoides	Pla Pok	426	276	65	79
Hampula dispar	Pla Suud	205	152	74	22
Cyclocheilicthys siaja	Pla Measadaeng	2214	1129	51	26
Esomus metallicus	Pla Sew	164	17	10	1
Puntius gonionotus	Pla Drapein Kaw	34	1	3	3
Puntius viehoever	Pla Drapein Sai	204	44	22	6
Puntius proctozysron	Pla Gramong	112	9	8	1
Osteochilus sp.	Pla Na Mong	46	2	4	-
Labiobarbus lineatus	Pla Sau Sai	28	1	3	-
Puntius spilopterus	Pla Howa Kaeng	93	0	-	-
Osteochilus hasseltii	Pla Soi Nok Kau	100	0	-	-
Cirrhinas sp.	Pla Soi Kriept Daeng	77	0	-	-
Cirrhinas sp.	Pla Soi Kriept Kau	18	0	-	-
Datnoides microlepis	Pla Sua	38	0	-	-
Notopterus notopterus	Pla Chalad	5	0	-	-

Summary: Nine species of fish which cause human infection with O. viverrini are now known. Since the best means of prevention of infection is through education of the villagers, knowing the species of infected fish is most important.

Conclusion: Rural villagers are now informed that certain definite species of fish cause infection with liver flukes, and they are warned to eat these only when well-cooked. The results of this study are considered to be an important aspect in the prevention of the infection.

List of Publications: This report is being incorporated in the following paper which is now in manuscript and which will be submitted for publication in May, 1964: Wykoff, D. E., Harinasuta, C., Juttijudata, P., and Winn, M. M. Studies on Opisthorchis viverrini in Thailand - Notes on the life cycle and comparison with O. felineus.