

Phaneropsolus bonnei

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OBJECTIVE: To study the life history, prevalence and pathology of this newly discovered human trematode infection.

DESCRIPTION: A survey of helminthic infections was recently conducted (August, 1969) in the village of Ban Phran Muan, Udonthani Province. Study of the morphological characteristics of Opisthorchis viverrini like eggs, which were found in abundance in the stool specimens, revealed the presence of two distinct types. In addition to the typical eggs of O. viverrini, eggs similar in size, but differing in morphology and staining characteristics, were found in 156 of 413 of the specimens examined. These findings were interpreted as evidence for the presence of a trematode infection heretofore undetected in Thailand, and efforts were instituted to obtain adult worms.

Fifteen residents of Ban Phran Muan, who had previously been found positive for the new trematode eggs, were given hexylresorcinol (Merck, Sharpe & Dohme) and the total stool output collected for three days and examined for adult worms.

On 17 November 1969 an autopsy was performed at the Udonthani Provincial Hospital on a 43 year old woman. The contents of the colon were examined microscopically for parasite eggs and larvae. The liver and bowel were examined grossly for adult helminths. The bowel was then carefully washed and the washings examined for the smaller species of parasites. All adult helminths were first examined unstained and then stained with acid carmine and mounted for identification.

PROGRESS: Adult trematodes were found in the stools of three of the fifteen persons treated with hexylresorcinol, but all were partially digested making study of the internal morphology unsatisfactory. The post-mortem examination revealed many O. viverrini adults in the liver. Several hookworms (Necator americanus), pinworms (Enterobius vermicularis) and one tapeworm (Taenia saginata) were found in the bowel. Microscopic examination of the contents of the colon revealed both the eggs of O. viverrini and the newly discovered trematode eggs. The intestine was carefully washed and in excess of 100 small (less than 1 mm.) pyriform flukes were recovered in the washings, most of them from the duodenum and upper jejunum. A description of the fluke follows:

Adult Worm: a small fluke, with pyriform to oval body, covered anteriorly with minute pointed spines; the spines gradually become smaller posteriorly and become fine hair-like projections on the posterior one-fifth of the worm; body measures 0.5—0.7 mm. in length, 0.33—0.45 mm. in width; the oral sucker is slightly subterminal and well developed; a muscular pharynx is present immediately posterior to it; esophagus, short; ceca short, extending to the level of the acetabulum; acetabulum median, well developed, in middle third of body; genital pore at or slightly anterior to the level of the pharynx, submedian, prebifurcal; vitellaria prominent, extracecal, forming clusters of follicles (approximately 8) on either side in forebody; ovary, more or less ovoid and situated just lateral to acetabulum; uterus, well developed, and irregularly winding in hindbody, occupying most of hindbody. Eggs numerous, small (see description below); testes, ovoid,

symmetrical, at acetabular or pre-acetabular level; cirrus pouch, curved, pre-acetabular, although overlapping acetabulum slightly; excretory bladder, Y-shaped; but the extent of the development of the side arms in the body could not be traced due to the extensive development of the uterus.

Eggs: oval, rather thin shelled, with no distinct shoulder at operculum; operculum, distinct or indistinct but not clearly differentiated as in O. viverrini; length, 27 microns (23-33); width, 15 microns (13-18); no distinct abopercular excrescence; may have a thin albuminous coat adhering to the shell. When stained with iodine, the eggs appear tan or brownish, not wine red as do O. viverrini, and the contents do not appear fully developed but have a vacuolated appearance.

These characteristics conform closely to those of specimens kindly made available by Dr. Lie Kian Joe as discussed below.

The features described above clearly place this trematode into the Genus Phaneropsolus^(1,2). To our knowledge, there is only one previous report of human infection with a trematode of this genus; Phaneropsolus bonnei Lie Kian Joe, 1951, was described as a new species from a single autopsy in Djakarta⁽³⁾. Examination of some of the type specimens revealed only minor variations from the above description. We therefore identify our specimens as Phaneropsolus bonnei. Since over 150 cases have been detected, one of which was at a distance of 40 kilometers from the others, P. bonnei is established as a naturally occurring parasite of man possibly widespread in northeast Thailand. Studies are now underway to elucidate the life cycle of the parasite and estimate the prevalence of infection.

REFERENCES :

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2. Saoud, M.F.A. : On a New Trematode, Tremajoannes buckleyi gen. et sp. nov. (Lecithodendriidae) from Central American Bats with Some Notes on Phaneropsolus (Diesing, 1850) Braun, 1901. J. Helmin. 1964, 38 : 97.
3. Lie Kian Joe : Some Human Flukes from Indonesia. Doc. neerl. ind. Morb. trop. 1951, 3 : 105.

PUBLICATIONS :

1. Manning, G.S., Diggs, C.L., Viyanant, V., Lertprasert, P. and K. Watanasirmkit, 1970. Preliminary report on Phaneropsolus bonnei Lie Kian Joe, 1951, a newly discovered human intestinal fluke from northeastern Thailand. J. Med. Ass. Thailand 53 (2) : 173-178.