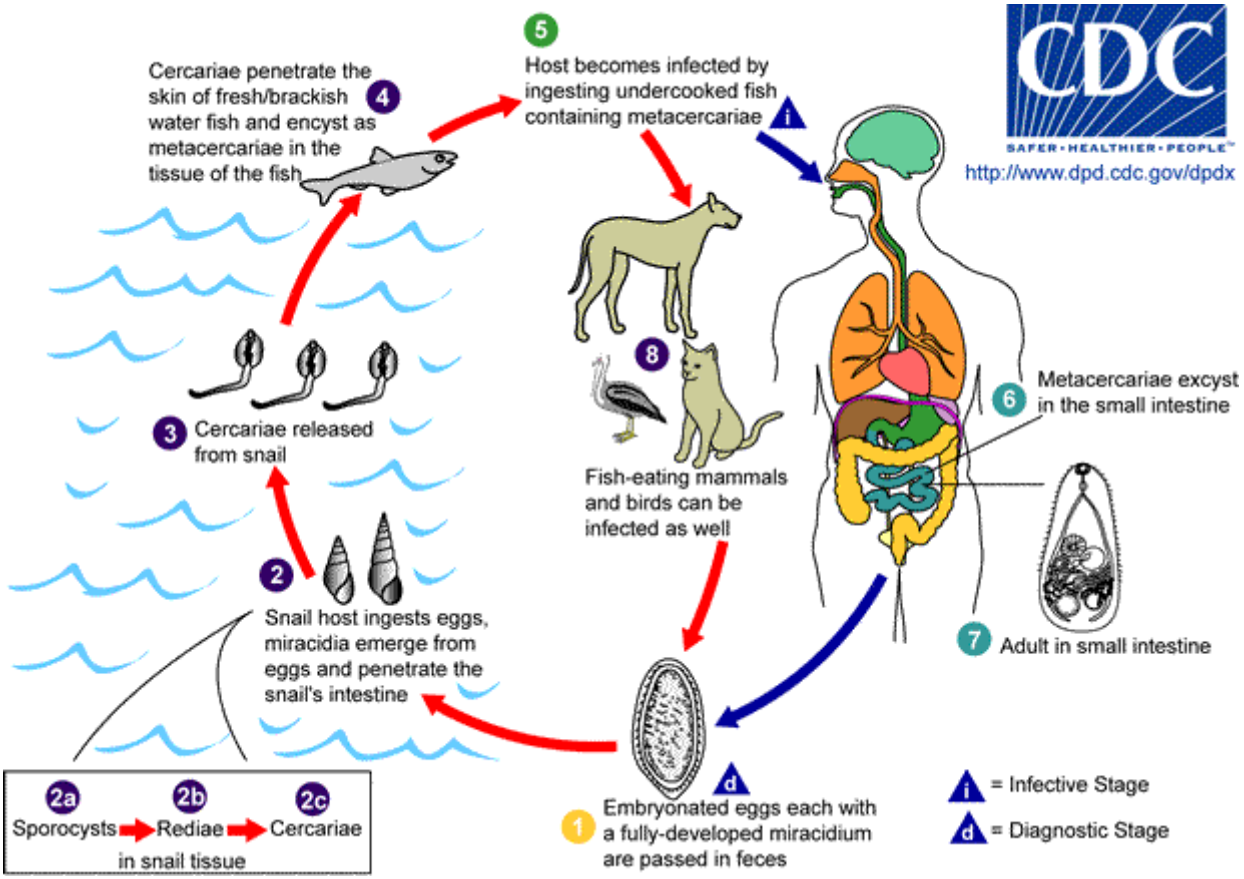
Heterophyiasis

Causal Agent:

The trematode *Heterophyes heterophyes*, a minute intestinal fluke.

Life Cycle:



Adults release embryonated eggs each with a fully-developed miracidium, and eggs are passed in the host's feces 1. After ingestion by a suitable snail (first intermediate host), the eggs hatch and release miracidia which penetrate the snail's intestine 2. Genera *Cerithidia* and *Pironella* are important snail hosts in Asia and the Middle East respectively. The miracidia undergo several developmental stages in the snail, i.e. sporocysts 2a, rediae 2b, and cercariae 2c. Many cercariae are produced from each redia. The cercariae are released from the snail 3 and encyst as metacercariae in the tissues of a suitable fresh/brackish water fish (second intermediate host) 4. The definitive host becomes infected by ingesting undercooked or salted fish containing metacercariae 5. After ingestion, the metacercariae excyst, attach to the mucosa of the small intestine 6 and mature into adults (measuring 1.0 to 1.7 mm by 0.3 to 0.4 mm) 7. In addition to humans, various fish-eating mammals (e.g., cats and dogs) and birds can be infected by *Heterophyes heterophyes* 8.

Geographic Distribution:
Egypt, the Middle East, and Far East.

Clinical Features:
The main symptoms are diarrhea and colicky abdominal pain. Migration of the eggs to the heart, resulting in potentially fatal myocardial and valvular damage, has been reported from the Philippines. Migration to other organs (e.g., brain) has also been reported.

Laboratory Diagnosis:
The diagnosis is based on the microscopic identification of eggs in the stool. However, the eggs are indistinguishable from those of *Metagonimus yokogawai* and resemble those of *Clonorchis* and *Opisthorchis*.

Treatment:
Praziquantel* is the drug of choice.

* This drug is approved by the FDA, but considered investigational for this purpose.