Scientific Name: *Dactylogyrus amphibothrium* Wagener or Wegener, 1857

Common Name: (monogenetic) fluke

Taxonomy: available through ITIS

Identification: This monogenetic fluke exhibits an anterior adhesive apparatus for attachment to its host. This region is lined with spikes and tegumentary sacs covered in a lining of microvilli (tiny finger-like projections) and some cilia. Dactylogyrids generally are equipped with 7 pairs of hooks and 2–4 eye spots at the anterior end. There are also two pads enclosing glandular organs on the ventral surface of *D. amphibothrium* that are unique to this species (El-Naggar and Kearn 1980; El-Naggar and Kearn 1983; Post 1983).

Size: *D. amphibothrium* can range from 0.3–0.7 mm in length and 0.07–0.14 mm in width (Gussev 1985; Wu et al. 2000).

Native Range: This is a Eurasian species (Shulman 1961; U. S. Department of the Interior 1993; Cone et al. 1994).

Nonindigenous Occurrences: *D. amphibothrium* was first recorded on Eurasian ruffe (*Gymnocephalus cernuus*) in 1992 in Lake Superior and in a tributary, the St. Louis River. It probably first arrived in the mid-1980s to the Great Lakes basin (U. S. Department of the Interior 1993; Cone et al. 1994).

Means of Introduction: *D. amphibothrium* very likely arrived in the Great Lakes basin on Eurasian ruffe delivered in ballast water (U. S. Department of the Interior 1993; Cone et al. 1994).

Status: Established.

Ecology: *D. amphibothrium* is a parasite occurring on gills of fish in the genus *Gymnocephalus* in Eurasia (Cone et al. 1994). It has also been recorded on *Cobitis aurata bulgarica* in the Danube (Kakacheva-Avramova 1977) and on fishes in the genera *Leuciscus* and *Tinca* (Gibson et al. 1996).

In Lake Superior, 5–45 parasites occur per ruffe and are generally found between the secondary lamellae (gill filaments) and halfway along the length of the first lamella (Cone et al. 1994). Attachment often occurs on the upper or dorsal parts of gills to maximize surface area and oxygen flow, while still providing some shelter from the highest water velocities. Individual parasites reach the gills as the fish takes in water, or they affix themselves to the side of the fish and move to the gills independently (Wootten 1974). Most populations of this parasite can overwinter on fish gills (Valtonen et al. 1990).

Dactyolgyrids are generally oviparous, have no uterus, and only contain one egg at a time in an ootype structure (Post 1983). There is no free-swimming larval stage so young grow to almost adult size inside the parent (El-Naggar and Kearn 1983). In

populations in Finland and the former U.S.S.R. this parasite produces 2 generations per year, the first with a life cycle occurring from June to August or September and the second from August or September to May or June. The summer generation lays around 400 eggs and the winter generation lays around 850 eggs. The vast majority of eggs do not survive and maturation of individuals may be linked to increasing water temperature. (Kashkovskii 1982; Valtonen et al. 1990)

Impact of Introduction

A) Realized: None known.

B) Potential: Although *D. amphibothrium* has been reported from species other than *Gymnocephalus*, as noted above, it is still considered primarily specific to this genus. However, yellow perch (*Perca flavescens*) could be at risk for infection by this monogenean parasite in the Great Lakes, although no such infection has been noted to date (Cone et al. 1994).

Remarks:

Voucher Specimens:

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Other Resources:

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Group: Parasite/Invertebrate – Group not available

Lake(s): Lake Superior Drainage

Genus: *Dactylogyrus*

Species: *amphibothrium*

Common Name: (monogenetic) fluke

Status: Established

Freshwater/Marine: All

Pathway: Shipping (arrived with Eurasian ruffe in ballast water)

Exotic/Transplant: Exotic