

## Phylum Cyclophora

only 3 species

first discovered in 1995 on the mouthparts of the Norway lobster

very small; less than half mm; 0.35 - 0.10 mm

all species symbiotic on crustaceans

more recently have been found on the American Lobster and European lobster

### **Body Form**

saclike, bilateral body

with no body cavity, acoelomate

back end has short stalk with adhesive disc by which they attach to their host

cellular epidermis surrounded by **cuticle**

### **Digestive System**

anterior feeding organ is a ciliated **buccal funnel**

cilia around mouth moves food into esophagus

esophagus leads to → U shaped gut → anus

Animals: Phylum Cyclophora; Ziser Lecture Notes; 2015.10

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feed on bacteria or bits of food dropped from host

can **regenerate** by internal budding

→ continually produces new funnels by internal asexual budding

as the new funnel develops the old buccal funnel disintegrates

the new funnel then emerges through the trunk and takes the place of the old one

### **Life cycle**

complex life cycle with 3 basic life stages

→ alternation of generations

#### **1. asexual feeding stage**

dominant stage is sessile, solitary feeding stage

neither male nor female

350 microns; saclike

attached to host by short stalk with an adhesive disc at the end

sessile feeding stage is asexual

#### **2. sexual stages**

Animals: Phylum Cyclophora; Ziser Lecture Notes; 2015.10

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the onset of the sexual stage is believed to be triggered by imminent molting of the lobster host.

the feeding form produces either male or female progeny which develop internally

#### **dwarf male**

a simple sac

nonfeeding; no mouth, digestive system or anus

two reproductive organs contain stores of sperm

two penile organs

matures inside feeding stage before breaking free and becoming attached to another feeding stage that is in the process of producing a female reproductive individual

mechanism of fertilization is unknown

#### **female**

also develops inside a feeding form

contains a single egg

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female matures and breaks free

briefly free-swimming, then attaches to lobster mouthparts

within the female form a new dispersive larva develops; presumably from a fertilized egg

the female progressively degenerates and the mature larva escapes

eventually the larva settles and metamorphoses into an asexual feeding stage

### **Evolutionary Relationships**

taxonomy is controversial; molecular data indicates it may be related to rotifers and acanthocephala

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