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## Occurrence of the Parasitic Dinoflagellate *Oodinium cyprinodontum* Lawler, 1967 in North Carolina\*

**Abstract**—The parasitic dinoflagellate *Oodinium cyprinodontum* Lawler, 1967 is reported for the first time from Cyprinodontidae from the Outer Banks of North Carolina. Incidence and intensity of infestation data are given. *Fundulus majalis* (Walbaum) appears to be the primary host.

*Oodinium cyprinodontum* was described from four species of Cyprinodontidae from the estuarine waters of Virginia (1). Hosts were *Fundulus majalis* (Walbaum), *F. heteroclitus* (Linnaeus), *Cyprinodon variegatus* Lacépède, and *Lucania parva* (Baird and Girard).

On April 6 and 7, 1968, collections of cyprinodonts were made with a haul seine in the shallows at three different localities on the Outer Banks of North Carolina. Station locations were: (1) Pamlico Sound, Dare County, 35° 23' N, 75° 30' W, salinity 23.527 parts per thousand (o/oo), water temperature 16° C; (2) Hatteras Inlet (tidepool), Hyde County, 35° 11' N, 75° 46' W, salinity 23.639 o/oo, water temperature 21.5° C; (3) Bogue Sound, Morehead City, 34° 42' N, 76° 46' W, salinity 33.301 o/oo, water temperature 17° C. Specimens were pre-

The results are summarized in Table I. Up to six parasites per gill filament were recovered from *F. majalis* at stations 1 and 2.

All of the 3623 trophonts of the dinoflagellate recovered appear to be similar in all respects to the specimens of the original Virginia collections. Hence, they are undoubtedly conspecific. All three stations represent extensions of the known range of *Oodinium cyprinodontum* and constitute new locality records. Since the parasite fauna of the hosts has been fairly well studied, e.g., as documented by Dillon (2), the finding of *O. cyprinodontum* in North Carolina is considered significant, as it shows that the occurrence of *O. cyprinodontum* is not a localized phenomenon in the Chesapeake Bay.

As in Virginia,<sup>1</sup> *F. majalis* appears to be the primary host, showing a higher incidence of infection and having a larger number of parasites per host than either of the other species. This might be explained by their being either more susceptible or more available to the parasite.

Appreciation is expressed to Messrs. Kenneth W.

TABLE I  
*Oodinium cyprinodontum* on Cyprinodontidae of North Carolina.

Station number	Species	Range of total lengths (mm)	Number of fish infected	Number of parasites recovered	Range of number of parasites per host	Average number of parasites per host
1	<i>F. majalis</i>	64-74	9	1331	11-633	148
	<i>F. heteroclitus</i>	56-77	0	—	—	—
	<i>C. variegatus</i>	36-50	9	52	2-11	6
2	<i>F. majalis</i>	72-92	10	1664	2-696	166
	<i>F. heteroclitus</i>	53-69	1	1	—	1
	<i>C. variegatus</i>	34-44	8	145	1-76	18
3	<i>F. majalis</i>	38-60	4	388	6-219	97
	<i>C. variegatus</i>	36-43	7	42	1-12	6

served in 10 per cent formalin in the field. Ten specimens of each species of Cyprinodontidae represented at each station were randomly selected and examined for the parasitic dinoflagellate with the aid of a stereomicroscope.

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### REFERENCES

1. Lawler, A. R., *Chesapeake Sci.*, **8**, 67 (1967).
2. Dillon, W. A., *Va J. Sci.*, **17**, 21 (1966).

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<sup>1</sup> Lawler, A. R., unpublished data.