

## First Record of the Algal Genus *Basycladia* (Chlorophyta, Cladophorales) in Canada

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Colt, L. C., Jr., Raymond A. Saumure, Jr., and Suzanne Baskinger. 1995. First record of the algal genus *Basycladia* (Chlorophyta, Cladophorales) in Canada. *Canadian Field-Naturalist* 109(4): 454–455.

Five species of turtles (*Chelydra serpentina*, *Clemmys guttata*, *Chrysemys picta marginata*, *Emydoidea blandingii* and *Graptemys geographica*) from Canada were found to harbor algae of the genus *Basycladia*. This is the first report of *Basycladia* in Canada as well as the first from *Clemmys guttata* throughout its eastern North American range.

**Key Words:** Algae, *Basycladia*, Snapping Turtle, *Chelydra serpentina*, Spotted Turtle, *Clemmys guttata*, Painted Turtle, *Chrysemys picta*, Blanding's Turtle, *Emydoidea blandingii*, Map Turtle, *Graptemys geographica*, Ontario, Quebec, Canada.

Collins (1907) described the chlorophycean alga *Chaetomorpha chelonum* taken from the back of a Painted Turtle (*Chrysemys marginata*) from Oakland County, Michigan. Hoffman and Tilden (1930) revised his descriptions based on collections from Minnesota, and assigned *C. chelonum* to a new genus *Basycladia*, and described two species, *B. chelonum* and *B. crassa*. Subsequent workers have collected *Basycladia* from snails (Normandin and Taft 1959), freshwater clams (Curry et al. 1981), and ceramic tile (Blum 1984) in addition to a number of species of turtles.

Subsequent collections of *Basycladia* have been made in 19 other states. Of significance to the present report is that in addition to the records cited above, it has been found in the northern border states of Wisconsin (Edgren et al. 1953), Illinois (Edgren et al. 1953; Reilly 1976), Indiana (Edgren et al. 1953), Ohio (Tiffany 1937; Walker et al. 1953; Normandin and Taft 1959), New York (Colt, unpublished data) and Maine (Chute 1949; Colt, unpublished data). Additional records have been published for Michigan by Lagler (1943), Gibbons (1968), and by Belusz and Reed (1969), as well as Minnesota (Ernst and Ernst 1973).

Although its taxonomic position as a distinct genus has been questioned (Hoek 1976), most writers have adopted the genus *Basycladia* as assigned by Hoffman and Tilden. Commonly suggested to occur only on turtles (Smith 1950; Ducker 1958; Edgren et al 1953; Neil and Allen 1954, and others), *Basycladia* has, however, been reported from other substrates such as freshwater clams (Curry et al. 1981), porcelain (Yoneda 1952), mortar and peach seeds (Proctor 1958), ceramic disks (Blum 1984) and freshwater snails (Normandin and Taft 1959). In LCC's laboratory *Basycladia* has been grown on clay flower pots and polystyrene plastic.

The most comprehensive works on *Basycladia* are those of Proctor (1958), and Ernst and Norris (1978).

### Study Area and Methods

A study was conducted by R. A. Saumure, Jr., on four species of turtles inhabiting the Big Creek National Wildlife Area, Long Point, Haldimand-Norfolk Regional Municipality, Ontario, Canada. Sampling took place 1 May to 30 August 1993 for the Snapping Turtle, *Chelydra serpentina*, Painted Turtle, *Chrysemys picta marginata*, Spotted Turtle, *Clemmys guttata*, and Blanding's Turtle, *Emydoidea blandingii*, and from 15-21 April 1994 for additional records of *Clemmys guttata*. *Basycladia* was also collected from an incidental capture of a Map Turtle, *Graptemys geographica*. Furthermore, *Basycladia* was found in samples taken from two *Chelydra serpentina* captured in Pontiac County, Québec on 22 and 24 May 1993.

Turtles were captured by hand, dip net or baited hoop traps, and samples of algae were removed by shaving a thin layer of scute from each turtle with a scalpel. The algae were preserved in Transeau's Fluid (Prescott 1962) or 5% Formalin. Algal identification was completed in the laboratory of the senior author, and representative samples were retained for reference.

### Results and Discussion

Whereas reports from previous field research by Adams and Clark (1958), as well as that by MacCulloch and Weller (1988) fail to mention the presence of algae on Long Point turtles, our studies have shown that all five turtle species collected during the recent project serve as substrates for *Basycladia*, which occurred in varying amounts ranging from minute tufts to patches. *Basycladia*

*chelonum* was collected from *Clemmys guttata*, *Emydoidea blandingii*, *Chrysemys picta marginata*, *Chelydra serpentina* and *Graptemys geographica*. *Basicladia crassa* was found only on *Chelydra serpentina*.

The collections of *Basicladia* from Pontiac County are the most northerly records for the genus, previously known from Maine and Michigan. *Basicladia* has also been reported from Japan (Yendo 1919; Yoneda 1952), China (Wang 1935, Gardner 1937), Australia (Ducker 1958), Mexico (Proctor 1958; Dixon 1960), and in Brazil and Iraq (McNeil, personal communication).

We also believe our report is the first of *Basicladia* from *Clemmys guttata*. That *C. guttata* is one of the least frequently encountered turtles of North America, particularly by phycologists, may contribute to the lack of a previous report of its hosting *Basicladia*. Ernst (1975, 1976) did not encounter *Basicladia* during his extensive survey of *C. guttata* in Pennsylvania, nor did Moski (1957b) report *Basicladia* as among the algae found on *C. guttata* in Connecticut. Ernst and Barbour (1972) do not mention the occurrence of any epizooic algae on *C. guttata*.

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Received 9 April 1995

Accepted 9 July 1995