

ALGAE FROM TURTLE SHELLS

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Algae, invading a variety of habitats, may be stenoeocious with niche-specificity. There are various reports about algae growing on stones (Desikachary, 1959), inhabiting inside aquatic angiosperms (Prescott, 1951; Tiffany & Britton, 1952), and beneath the scales of fishes (Prescott, 1969). Moreover algae dwelling on turtle shells have also been reported (Collins, 1907; Tiffany, 1926; Ewing, 1939; Edgren *et al.*, 1953; Walker *et al.*, 1953; Neil & Allen, 1954; Moski, 1957 a,b; Proctor, 1958). Aquatic, edaphic and epiphytic algae have frequently been reported from Pakistan (Faridi, 1971) but there is a lack of information on the epizoic algae from this region. The present communication, reports some algae growing on turtle shells.

A total of twenty turtles of the species *Trionyx gangeticus* Curier were caught from drain canals with slow running water in the saline areas of village Yar Hussain, Tehsil Swabi, District Mardan during May 1979. Algae were scraped from the shells after thorough rinsing with clean water. The specimens preserved in 3 % formalin and deposited in Herbarium, Department of Botany, University of Peshawar, were studied under the microscope. The drawings, made from Camera Lucida, are original. Frequency was calculated following Phillips (1953) by considering each turtle as a sampling unit.

Oscillatoria anguina, *Phormidium fragile*, *P. tenue* of Cyanophyceae and *Amphora normani*, *Navicula bacillum*, *N. cryptocephala* and *N. exigua* of Bacillanophyceae have been recorded for the first time growing on turtle shells (Fig. 1). *Phormidium tenue* was the most frequent with 50 % frequency, followed by *Navicula bacillum*, *N. exigua* and *Phormidium fragile* having 40 % frequency. *Navicula cryptocephala* exhibited 20 % frequency, and *Amphora normani* and *Oscillatoria anguina* having 10 % frequency were the least common species.

The growth of algae on turtle shells indicate their preference for calcium rich habitat. However, Prescott (1951) and Desikachary (1959) recorded *Oscillatoria anguina*, *Phormidium fragile* and *P. tenue* from submerged aquatics and soil in shallow waters and as epiphytes in brakish waters. Species of *Amphora* and *Navicula* have also been found

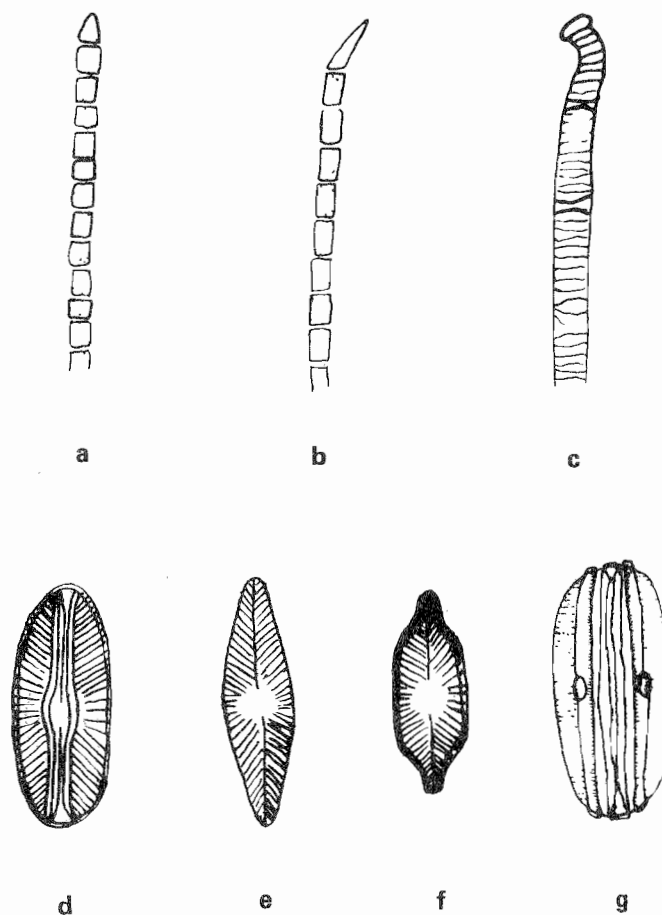


Fig. 1. Camera lucida drawings of algae growing on turtle shell: a. *Phormidium fragile* (X 1 500), b. *P. tenue* (X 1 500), c. *Oscillatoria anguina* (X 833), d. *Navicula bacillum* (X 1 400), e. *N. exigua* (X 1 250), f. *N. cryptocephala* (X 1 428), g. *Amphora normani* (X 1 454).

growing on submerged stones in the same area (Salim & Khan, 1960), from which our specimens were collected.

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