

Section 4

Structure and Functioning of Algal Communities in Fishponds

In fishpond littoral ecosystems microphytes are generally inferior in importance to the macrophytes. The spatial pattern, community structure, and developmental dynamics of the microphytes are determined largely by the structure and developmental dynamics of the macrophytes. However, the microphytes may participate appreciably in the total material and energy budget of the littoral ecosystem. Algae comprise numerous types (growth forms, species) whose ways of life differ from those of rooted higher plants. During certain seasonal phases, algae are capable of intercepting the radiant energy which, otherwise, would be lost to the ecosystem. Although they are at a disadvantage in competition with higher plants, their development may also influence the development of the macrophytes.

In order to understand the role which microphytes play in pond littoral ecosystems it is necessary to pursue their seasonal development not only in the littoral, but also in the pelagial, i.e., in the open-water area of a fishpond. Life cycles of many dominant algae may proceed alternately in the littoral and pelagial: therefore exact data on the changes in their biomass are often difficult to obtain. The same applies to algal production budgets in individual subsystems within the littoral as defined by various macrophyte vegetational units. Algae tend to blur boundaries between adjoining ecosystems, which may appear distinct if defined only according to the dominant macrophytes (Fig. I).