Biometric evaluation of populations of *Aphanizomenon flos-aquae* from Třeboň pond basin (Czechoslovakia)

By Lubomír Kováčik and Helena Holečková

Institute of Botany ČSAV, Dept. of Hydrobotany, Třeboň, Czechoslovakia

With 16 figures in the text

**Abstract:** Different populations of the blue-green alga *Aphanizomenon flos-aquae*, collected in fishponds of Třeboň basin, Southern Bohemia, Czechoslovakia, were statistically evaluated for sizes of vegetative cells, heterocysts and akinetes in filaments. The lengths of cells increase from the central part of a filament towards both ends, and reversely, the width of cells decreases towards both ends of a filament. Heterocysts as well as akinetes are not placed just in the midpoint of a filament but in 35–50% of the filaments length. The filaments have, therefore, a subsymmetrical structure. Sizes of cells are influenced by the phase of development of the population in nature as well as by the fixation of the sample by formaldehyde and by the time of storing the sample in the fixative.

**Key words:** Water blooms, Cyanophytes, *Aphanizomenon*, biometric and statistical evaluation, morphology of filaments, vegetative cells, heterocysts, akinetes, influence of formaldehyde, preservation.

**PDC:** SS 026; MO 10, 14, 15; EC 051; EB 091; EP 021; GC 12, 14; ME 01, 031, 111, 191.

**Introduction**

Blue-green algae (Cyanophyceae) have a wide variability in morphology, as well as in ecology, and there are many troubles in their determination. Statistical evaluation of sizes of different populations from nature, as well as cultivated ones is a valuable attempt for solving the problem of variability (Komárek 1958, Fjerdingstad 1966, Kondrateva 1974, etc.).

Presented study is focused to the biometrical evaluation of natural populations of *Aphanizomenon flos-aquae* Ralfs ex Born. et Flah. which was collected from fishponds in Třeboň basin (Southern Bohemia, Czechoslovakia). Třeboň basin is situated 400–500 m above sea level; it is classified as moderately warm region in Czechoslovakia with the average year temperature of 7.8°C and precipitations of