Introduction

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3.3.1. *W. hyalina* (Delile) Monod
3.3.2. *W. neotropica* Landolt
3.3.3. *W. Welwitschii* (Hegelm.) Monod
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3.3.6. *W. gladiata* (Hegelm.) Hegelm.
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3.4. *Wolffia* Horkel
3.4.1. *W. microscopica* (Griff.) Kurz
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4. Discussion

Summary - Zusammenfassung

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1. Introduction

The duckweed family represents a group of world-wide distribution; this biological success is undoubtedly influenced by the predominant or exclusive vegetative propagation of the *Lemnaceae*, a spontaneous fragmentation of the clones forming part of their genetical make-up. The populations of duckweeds frequently have an enormous biomass, but their genetical variation is rather limited, a given genotype being expressed by countless, physiologically independent phenotype modules. The particular behaviour of the *Lemnaceae* makes them an interesting object for studies on variation, for the vegetative propagation may stabilize any random alteration appearing within clones.
As far as the cytological investigations are concerned, the duckweeds represent a very difficult material, the chromosomes of numerous taxa being exceedingly small and often tending to stick together in metaphase plates. In spite of these difficulties, cytological variation within the *Lemnaceae*

offers a challenging problem as changes in chromosome numbers, their possible transmission to next cell generations as well as bearing upon the population structure and the whole differentiation pattern call for a special attention.

The present paper deals with 30 taxa out of the 35 that form the duckweed family, all the four genera viz. *Spirodela* Schleiden, *Lemna* L., *Wolffiella* Hegelm. and *Wolffia* Horkel being represented. On the whole, material from 1500 localities was studied; this number is obviously not related to the actually examinated units and/or fronds. The study was carried out during fifteen years (1966-1980).

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2. Material and methods

The material from the present study was taken for the most part from sterile clonal cultures kept at the Geobotanical Institute, Swiss Federal Institute of Technology (SFIT), in Zürich. Some of those clones were repeatedly examined at a certain time interval; in addition, cultures independently obtained from various laboratories in the world but representing various parts of the same original clone, were sometimes studied. Only about 20% of the material comprised population samples from Europe, North America and New Zealand; 10-15 units were then taken at random in various parts of a given population.