

Introduction

Objekttyp: **Chapter**

Zeitschrift: **Veröffentlichungen des Geobotanischen Institutes der Eidg. Tech. Hochschule, Stiftung Rübel, in Zürich**

Band (Jahr): **70 (1980)**

PDF erstellt am: **22.07.2024**

Nutzungsbedingungen

Die ETH-Bibliothek ist Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Inhalten der Zeitschriften. Die Rechte liegen in der Regel bei den Herausgebern.

Die auf der Plattform e-periodica veröffentlichten Dokumente stehen für nicht-kommerzielle Zwecke in Lehre und Forschung sowie für die private Nutzung frei zur Verfügung. Einzelne Dateien oder Ausdrucke aus diesem Angebot können zusammen mit diesen Nutzungsbedingungen und den korrekten Herkunftsbezeichnungen weitergegeben werden.

Das Veröffentlichen von Bildern in Print- und Online-Publikationen ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Die systematische Speicherung von Teilen des elektronischen Angebots auf anderen Servern bedarf ebenfalls des schriftlichen Einverständnisses der Rechteinhaber.

Haftungsausschluss

Alle Angaben erfolgen ohne Gewähr für Vollständigkeit oder Richtigkeit. Es wird keine Haftung übernommen für Schäden durch die Verwendung von Informationen aus diesem Online-Angebot oder durch das Fehlen von Informationen. Dies gilt auch für Inhalte Dritter, die über dieses Angebot zugänglich sind.

3.3. *Wolffiella* Hegelm.

- 3.3.1. *W. hyalina* (Delile) Monod
- 3.3.2. *W. neotropica* Landolt
- 3.3.3. *W. Welwitschii* (Hegelm.) Monod
- 3.3.4. *W. lingulata* (Hegelm.) Hegelm.
- 3.3.5. *W. oblonga* (Phil.) Hegelm.
- 3.3.6. *W. gladiata* (Hegelm.) Hegelm.
- 3.3.7. *W. denticulata* (Hegelm.) Hegelm.

3.4. *Wolffia* Horkel

- 3.4.1. *W. microscopica* (Griff.) Kurz
- 3.4.2. *W. brasiliensis* Weddell
- 3.4.3. *W. borealis* (Engelm.) Landolt
- 3.4.4. *W. australiana* (Benth.) Hartog & Plas
- 3.4.5. *W. angusta* Landolt
- 3.4.6. *W. arrhiza* (L.) Horkel et Wimmer
- 3.4.7. *W. columbiana* Karsten
- 3.4.8. *W. globosa* (Roxb.) Hartog & Plas

4. Discussion

Summary - Zusammenfassung

References

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 examined units and/or fronds. The study was carried out during fifteen years (1966-1980).

Acknowledgements

Sincere thanks of the author are due to Ms. M. Siegl, Ms. A. Hegi and Ms. E. Wohlmann-Bräm who kept the *Lemnaceae* cultures through all the long time in an exemplary care, helped with fixations and the unpleasant task of the staining. Ms. E. Wohlmann-Bräm made also the drawings of the distribution maps. Ms. A. Honegger typed the manuscript.

Generous help of very numerous contributors who collected samples for our collection was acknowledged in the foreword of this volume; the author wishes to express here her cordial thanks to Ms. Ruth Mason, Canterbury, New Zealand, who arranged a most interesting field trip during our visit to New Zealand in 1979.

Last, but not least, very special thanks are addressed to our colleague and friend Prof. Dr. E. Landolt, who stimulated us to undertake this study, precisely determined the whole studied material, translated the Summary into German, provided a cheerful assistance in numerous field trips and, on many occasions, offered not only useful information but also constructive criticism.

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.