followed as nearly as possible. The business part of the meeting concluded with the executive committee being instructed to take the necessary action to set up a constitution and the structure of the Chapter. With no further business Mr. Martin thanked everyone present for their enthusiasm and support and promised that the efforts of both himself and the executive committee would be directed at setting the Chapter on a firm foundation, so that it could grow from strength to strength.

At the conclusion of the general business meeting Mr. Jim Wells outlined further the history and objects of the I.P.P.S. He described briefly the formation of the Society from its inception in 1951 until the present day. He told how Mr. E. Scanlan, Commissioner for Shade Trees, City of Cleveland, had been the instigator, bringing together the original members, and that it eventually fell on Mr. Wells to become the first President. He emphasized that the general purpose of the organization was to provide for the dissemination of knowledge through the proper channels, providing helpful guidance and assistance to plant propagators through its meetings and publications.

Mr. Wells then showed some slides of tunnel houses and some methods of propagation he thought would be of interest to New Zealanders. It was obvious from the enthusiasm and interest shown by those gathered that Mr. Wells keenness had spread to everyone and the newly-formed executive committee felt spurred on to establish the framework for a branch of the Society in New Zealand.

TECHNICAL SESSION

Tuesday Afternoon, September 26, 1972

A METHOD FOR THE VEGETATIVE PROPAGATION OF HARDY WATER LILIES [*NYMPHAEA*]

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In this case the term "hardy" refers to those *Nymphaea* which grow in temperate zones but not necessarily to those known generally as tender or tropical. The technique to be described was evolved to meet the requirements for several hundreds of small plants of a standard size and age. In this case the cultivar, Gonnere (syn. Crystal White), was used as sufficient material of it was readily available.

Normally, when only a few plants are required, side shoots from the main rootstock are removed but natural increase thus is very slow. It has long been known that *Nymphaea* will survive in wet soil only with no water above the rootstock but in such cases smaller leaves and far more growing shoots are produced. It was also known that a dormant shoot bud is present on the rootstock at the axil of it and the leaf stem, even if the latter is no longer present. With this knowledge, the rootstocks were placed in containers and grown in water 30 centimetres deep. This water depth was decreased over a period of eight weeks so that finally the rootstocks had no water over them but were in wet soil only. By the end of the first season, over a growing period of six months, an average of one shoot suitable for removal had been produced every 10 centimetres. This was done whilst they were dormant with no foliage present. The soil was kept wet but with no water over the rootstocks. Before growth was expected to commence in the spring, the rootstocks were incised along the centre line to a depth of 2/3. Cuts across the rootstock to the same depth were made every 5 centimetres. As a control, uncut rootstocks were used, some covered with 30 centimeters of water and some in wet soil only. In all cases the terminal and existing side shoots were removed. To encourage earlier growth the plants were placed in a glasshouse where the temperature did not fall below 10°C. A moist atmosphere was maintained by frequent sprinkling controlled by a time switch.

Growth thus encouraged was quick and shoots started to grow from the majority of the sections. These were removed when sufficiently large and a small second crop subsequently developed during that season. In all, by the end of the season, an average of one plant per 2 centimetres length of rootstock resulted. This compared with one plant per 10 centimetres by natural propagation in water and one plant per 6 centimetres in wet soil only with no cuts.

More shoots were produced on the younger part of the rootstock and had only this material been used the plant production rate per length of rootstock would have undoubtedly been increased. The rootstocks were allowed to become dormant in their natural season and the process repeated in the following growing season, but no further incisions were made or needed. From these, one plant per 5 centimetres was produced. This decrease was probably due in part to the cutting of the rootstock and the treatment already received in the previous year.

An alternative system was also used where the rootstocks were cut into complete sections 3 centimetres wide. Although in almost every case a plant resulted, it took a complete season to grow and obviously all the rootstock was used. Subsequently, in another season the cross incisions into the rootstock were made

every 2.5 centimetres and this resulted in an average production of one plant per 1.5 centimetres on rootstock per season.

The use of growth stimulants could also be considered. Although perhaps the need to propagate in large numbers plants such as that described does not arise often, the technique used shows what can be done if necessary. The method was evolved knowing the plant's habit and behaviour and applying to these a basic knowledge of plant propagation and culture.

J. WELLS: I am not clear whether you used the 5 cm segments with the shoots attached or took the shoots off as cuttings.

E. TOLEMAN: No, the shoots only were used; after they made 3 or 4 cms of growth, they normally produced a few adventitious roots and then we cut the shoots off.

J. WELLS: Would the cut-up rootstock produce further shoots?

E. TOLEMAN: Yes. In the year the work was started, one lot of segments produced two crops and some even three. The work was done in the northern Hemisphere and was done under glass between February and September. However, with the onset of autumn they went into a state of dormancy even when the heat was turned on in the glasshouse.

J. WELLS: What did you do with the shoots after cutting?

E. TOLEMAN: They were put in 3" clay pots with 'silver sand', no soil — because of the possibility of bacterial rot.

E. J. MARTIN: Where were the root segments placed?

E. TOLEMAN: In shallow galvanised trays.

F. SCHUURMAN: Were the plants fertilized in any way?

E. TOLEMAN: No, not at the rooting and first potting stage.