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NATIONAL RESEARCH COUNCIL OF CANADA

PROCEEDINGS

OF THE

SEVENTH MEETING

OF THE

SUBCOMMITTEE ON FOREST TREE BREEDING

OF THE

ASSOCIATE COMMITTEE ON FORESTRY

OTTAWA

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P R O C E E D I N G S

of the

Seventh Meeting

of the

SUBCOMMITTEE ON FOREST TREE BREEDING

Held at the National Research Laboratories, Ottawa,
26 November, 1941

Present:

Members: Dr. W. H. Cook, (Acting Chairman)
Dr. N. H. Grace
Mr. D. E. Gray
Dr. C. Heimburger
Mr. M. B. Morison
Mr. C. G. Riley
Mr. W. M. Robertson
Dr. L.P.V.Johnson (Secretary)

Visitors:
Dr. C. E. Atwood
Dr. J. G. Malloch
Dr. A. J. Skolko

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Minutes

80. The Minutes of the Sixth Meeting were read and approved after being amended as follows:

1. The fifth paragraph of Minute 70 changed to read "Mr. Riley was of the opinion that, in the event of any member finding an unforeseen opportunity to undertake work not provided for in the approved program, he should be free to act according to his own judgment rather than be obliged to allow the opportunity to pass because such action has not been considered and approved by the Committee."

2. The last sentence of the first paragraph of Minute 78 deleted.

Action on proposal to obtain additional pathologist

81. Dr. Heimburger wanted to know what action had been taken on the proposal to obtain the services of an additional pathologist (Minute 74 of the Sixth Meeting). Mr. Riley said that Dr. Güssow had considered the matter in connection with a letter received from Mr. Cameron. The stand taken by Dr. Güssow was that the present was a very inopportune time for considering new appointments and, furthermore, it was very doubtful whether a suitable

pathologist was available. Dr. Cook stated that the present tendency to reduce rather than increase staffs not concerned with war work, gave little hope for obtaining support for the proposed additional pathologist.

Mr. Robertson felt that, even though the matter appeared to be rather hopeless, we should not let the matter drop without trying to see what could be done about it. After further discussion it was decided that the Sub-committee should make its need known to the parent Committee which could decide on the action to be taken.

The Secretary was instructed to obtain copies of the correspondence between Mr. Cameron and Dr. Gussow re appointing an additional pathologist, and to prepare a memorandum to the parent Committee on the matter.

82. Arboretum at P.F.E.S.

Dr. Heimburger expressed concern over the official attitude toward the establishment of a "breeding arboretum" at the Petawawa Forest Experiment Station. The arboretum had been started but had not been whole-heartedly supported by the administration who, incidentally, had changed its name to "tree-testing garden". Discussion which followed served to clear up some of the misunderstandings regarding the nature of a breeding arboretum. As described by Dr. Heimburger and Dr. Johnson the breeding arboretum is distinctly different from the botanical garden type of arboretum and will consist of:

1. Individual selections of native and exotic trees being grown to sexual maturity for hybridization purposes.

2. Groups of introduced individuals being given long-term tests for adaptation, vigour, etc.

3. New forms (produced by chromosome doubling or hybridization) grown as specimen trees, as future breeding material or as a long-term test.

The breeding arboretum will be a living collection of species, varieties, biotypes, hybrids, amphidiploid forms etc., which together will form a practical tool that will enable the breeder to do better work.

83. Dr. Johnson's research plans

Dr. Johnson described his research program for the coming winter by outlining the following experiments:

1. Further and more extensive experiments on chromosome doubling in forest trees by colchicine treatments.

2. Cytological work on hybrids derived from triploid male parents and on material treated with colchicine two years ago.

3. Continuation of greenhouse hybridization in poplar, with preliminary work in willow and elm.

4. Experiment on longevity of forest tree pollen (many species) stored at various humidities under different temperature and light conditions.

5. An experiment on 19 species of forest trees to determine when flower branches and previous season's growth change from a condition of true dormancy to one of "obligatory dormancy" (i.e., material no longer dormant but growth inhibited by unfavourable growing conditions).

6. Experiment on seven species and varieties of forest trees to study the effect of different dates of collection and of heeling-in at various temperatures on the rooting response in the spring.

7. Continuation with some modifications of the study on the inheritance of sap and sugar production in the sugar maple.

Dr. Heimburger's research plans

84. Dr. Heimburger outlined his research plans as follows: Work would be continued on indoor poplar hybridization, especially with native aspens used as female parents. Experiments on heeling-in media and on methods of forcing detached branches for pollen production would be continued with some modifications. Introduction of new species of forest trees would be carried on as far as present conditions permit.

Dr. Johnson suggested that Dr. Heimburger use the heeling-in chamber at the Annex and perhaps one of the controlled temperature chambers at the National Research Laboratories in studies on heeling-in media. This would enable Dr. Heimburger to obtain some results which would be on a comparable basis to those of Dr. Johnson's heeling-in experiment.

Dr. Grace's research plans

85. Dr. Grace said that he did not plan to start any new work during the winter but that certain experiments would be continued. Studies will be made on dormant cuttings of white spruce, white pine, red pine, jack pine, larch, hemlock, basswood, white birch, yellow birch and poplar. General work on the

effects of media will be continued using Norway spruce as the test plant. The effect of girdling on rooting responses of white and Norway spruce will be studied.

86. Mr. Riley's research plans

Mr. Riley stated that the pathological staff would continue to serve the Subcommittee as far as time would permit. Examination of diseases on breeding material would continue and attempts would be made to perfect methods of artificial inoculation, particularly in the case of white pine blister rust.

Dr. Johnson suggested that the possibility of a morphological basis of blister rust resistance be investigated. No action was taken.

87. Mr. Gray's research plans

Mr. Gray said that, while he was not prepared to discuss definite plans, he could assure the meeting that his staff was ready to assist the Subcommittee with any phase of its work related to entomology.

The meeting adjourned at 4.20 p.m. and, after attending the Science Association tea, the members inspected the greenhouse and other research facilities of the Subcommittee at the National Research Laboratories.

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