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NATIONAL RESEARCH COUNCIL OF CANADA

PROCEEDINGS
OF THE
ELEVENTH MEETING
OF THE
SUBCOMMITTEE ON FOREST TREE BREEDING

OTTAWA

2 DECEMBER, 1943

NATIONAL RESEARCH COUNCIL

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SUBCOMMITTEE ON FOREST TREE BREEDING

Held at the National Research Council, Ottawa, 2 December, 1943.

Members present:

Dr. J.G. Malloch, Chairman
Mr. D. Roy Cameron
Dr. C.E. Atwood
Dr. N.H. Grace
Dr. C. Heimburger
Mr. M.B. Morison
Mr. W.M. Robertson
Dr. A.J. Skolko
Dr. L.P.V. Johnson, Secretary

111. Minutes The minutes of the Tenth Meeting were approved without amendment.

112. Bags for crossing Dr. Johnson reported on his discussions with Dr. Woodcock regarding possible improvements upon the protective coverings now in use in hybridization work. (see Minute 104). He recommended a practical trial of a specially designed parchment bag which, from preliminary tests, appeared to provide the necessary requirements of moisture and light-transmission and to have, in addition, greater toughness than the commonly used glossine bag and a much greater "wet strength" than any of the paper bags previously used. The meeting agreed that the new bag should be tested in actual crossing work and recommended the purchase of a few hundred bags in two sizes for this purpose by the Research Council, a supply of the bags to be made available to Dr. Heimburger.

113. Test plots on the prairies The subject of testing on the prairies all the breeding materials designed for the prairies received considerably discussion. It was agreed that the final test of all such material should be made on the prairies, but that every effort should be made to utilize facilities at Ottawa and Petawawa in eliminating materials on such bases as: poor rooting, lack of winter hardness and susceptibility to diseases (such as Septoria Canker) for which Eastern test

results may be considered to indicate directly the reaction under prairie conditions.

With this agreement the subject resolved itself into a question of the policy to be followed in making the necessary arrangements for suitable tests of our materials on the prairies. It was agreed that Dr. Malloch and Mr. Cameron should discuss with Dr. Archibald the prospects of having Mr. Kerr, of the Sutherland Nursery Station, undertake a number of tests both at his station and on certain farms selected at his discretion. It was understood that such an arrangement would not preclude trials on farms selected by Dr. Johnson.

114.
Report on
white pine
and spruce
work

At Mr. Cameron's request, Doctors Heimburger and Johnson outlined the progress being made in breeding for blister-rust resistant white pines (Major Project No. 1) and for spruce improvement (M.P. No. 2).

It was shown that the white pine work is progressing very well with over a thousand plants from selected stands already in the disease garden, and with several additional stocks ready for transplanting in the Spring. A serious difficulty in this work has been introduced by the failure to obtain rooting of cuttings taken from the Pointe Platon pines. The possibility of rejuvenation of mature tissue is being investigated as a possible solution to this problem.

The spruce work is receiving attention in its season, but lack of suitable flowering has prevented any extensive hybridization during the last two years. A number of seedlings from earlier cross pollinations appear to be hybrids. Colchine treatment of spruce, as well as all other important forest tree genera, has been continued.

115.
Report on
pathological
work

Dr. Skolko presented a report on the work undertaken in the interests of the Subcommittee during 1943, which is attached hereto as Appendix A.

The matter of artificial inoculation of poplar with the Septoria Canker organism came up for discussion. Dr. Skolko agreed to provide inoculum to interested members in the Spring, said members to do their own inoculations from directions provided.

116.
Dr. Heimburger's
report

Dr. Heimburger reported on his very diverse undertakings. It was quite clear from his report that he has managed to keep work on vegetative propagation, nursery and plantation tests, hybridization, cytology, etc. progressing exceedingly well. His report, with certain additions, will be attached as an appendix to the proceedings of the forthcoming Spring meeting.

117.
Cultural
practice
in shel-
terbelts

Dr. Johnson introduced the subject of cultural practices in the shelterbelt as the concern of the forest tree breeder. Recent observations on the prairies had led him to conclude that cultural practices in the shelterbelt have such pronounced beneficial effects on the environment that they warrant similar attention as that being paid to the breeding aspect of shelterbelt improvement. The cultural aspect is apparently not receiving that attention and, as one whose activities is directed toward improved shelterbelts, the breeder would appear to have some responsibilities on the matter. Dr. Johnson agreed to prepare a memorandum on the subject for the Spring meeting.

118.
Deer
fences

Dr. Heimbürger indicated some of the difficulties arising out of deer browsing in young poplar plantations set out in the bush. There were no constructive ideas on the subject of deer fences, and the matter was left to Dr. Heimbürger's own ingenuity.

APPENDIX A

V-A-1 Resistance to disease in poplar breeding materials

The annual (1943) inspection of the tree breeding material in the nurseries and plantations at the Petawawa Forest Experiment Station was made from September 14 to September 17. The cool, moist weather during the summer months has apparently been very favourable for poplar rust development, the susceptible clones being extremely heavily infected. The results of this year's examination, presented below, should give, therefore, a fairly reliable indication of poplar rust resistance or susceptibility. The degree of rust infection is stated as in previous reports according to Schriener's classification of rust incidence. In some cases more than one observation is recorded. This was done where the same clone was planted in different nurseries or in widely separated parts of the same nursery.

Poplar Tree Breeding Stock in Nurseries

A 3 - 0	AG x AT (379) - 0	AGW 41 - 4,4
A 4 - 0		" 44 - 4,4
A10 - 0	AGE 2 - 4,4	" 46 - 4,4
A12 - 0	AGE 3 - 4,4	" 47 - 4
A17 - 0		" 51 - 3
A18 - 0	AGW 1 - 4,4	" 52 - 4,4
A20 - 0	" 3 - 4,4	" 53 - 4,3
A21 - 0	" 4 - 4	" 55 - 4
A34 - 0	" 5 - 4,4	" 56 - 4
A37 - 0	" 7 - 4,4	
A38 - 0,0	" 8 - 3,3,0	Andover - 2
A39 - 0	" 9 - 4,4	
A40 - 0	" 10 - 3,4	Andrewsii 1 - 3
	" 13 - 3,3	
A36/G - 2	" 14 - 3,3	Androscogyin - 1
	" 16 - 4,4 (Nap.)	
AcE 1 - 1,3	" 17 - 4	Angulata/Simonii - 2,3
AcE 4 - 4	" 18 - 3	
AcE 11 - 3,4,3	" 20 - 4,4	Angulata erecta - 3,3
	" 22 - 4	
acuminata 1 - 4	" 23 - 4	Bassano - 4,4
" 2 - 4	" 24 - 4	
	" 25 - 4	Berolinensis 1 - 0
AG 10 - 0,0	" 26 - 4,4	
AG 33-5 - 0	" 29 - 3,4	Berolinensis/Lombardy - 0 (Septoria)
AG 33-17 - 0	" 31 - 3	Berolinensis/Simonii - 0
AG 33-19 - 0	" 32 - 4,3	
AG 73 - 0,0	" 34 - 4,4	BNW 1 - 4,4,3
AG 81 - 0	" 35 - 4,3	" 2 - 3,3
AG 92 - 0	" 37 - 4,4	" 4 - 4,2-3, 4
AG112 - 0	" 38 - 4,4	" 6 - 4,3

Poplar Tree Breeding Stock in Nurseries
(Cont'd.)

BNW 8 - 4,3+,3	CW39 - 4,4	D 1 - 3,4
" 9 - 3+,4	"101 - 4	D 2 - 3,3
" 11 - 0,4,2-3	"102 - 4,4	D 5 - 3,3
" 15 - 3,3	"122 - 4,3	D 7 - 3,3
" 16 - 4,2	"161 - 4	
" 17 - 4,3	"175 - 4	D 481 - 2+
" 18 - 3,3	"208 - 3,3	D 482 - 3,3
" 19 - 4,0	"218 - 4	D 483 - 3,3,3
" 22 - 3+,4,3	"247 - 4,3	D 484 - 3
" 23 - 4,3	"260 - 4,3	
" 25 - 4,3,3	"310 - 4	DT - 4,4
	"316 - 4	DT3 - 4
Brooks 4 - 4,3,2	"334 - 4	
" 10 - 4,3	"354 - 4	Frye - 1
Big Brooks - 2	"359 - 3	
	"372 - 4,3	gelrica - 0-1,1
C1 - 0	"385 - 4	generosa - 4,4,4,3+
C5 - 0	"407 - 4	
C8/AG 37 - 0	"435 - 4	Jackii 2 - 3-4,3,2
C15 - 0	"440 - 4	" 3 - 4,4
	"460 - 4	" 4 - 4
Calgary 23 - 0,2,2,0-1	"526 - 4	" 5 - 4
" 91 - 2	"538 - 4	" 6 - 4
" 92 - 2	"591 - 3	" 7 - 4,4
" 94 - 3	"641 - 4,3	" 9 - 4,4
" 95 - 2	"647 - 4	
" 96 - 3	"689 - 4	kanjitaliana 3435-37 - 2
" 98 - 3	"691 - 4	
" 106 - 3	"727 - 4,3	koreana 5 - 0
" 108 - 2	"733 - 4	" 6 - 1,2,3
" 109 - 2	"748 - 3	" 9 - 0,0,0,0
" 120 - 3	"756 - 4	
" 121 - 1	"791 - 4	Maximowiczii 1 - 0
	"920 - 4	" 2 - 0,0
Carolina - 3	"926 - 4	" 3 - 0
	CW 1083 - 4,4	" 4 - 0,0,0
Cathayana 1 - 1	" 1093 - 4	" 5 - 0,0
" 15 - 1,2	" 1246 - 4	
" 17 - 0-1,2	" 1261 - 4	Masson - 3
	" 1320 - 4	
CG1 - 0	" 1325 - 4	N 1 - 1
CG6 - 0	" 1330 - 4	N 2 - 1
CG8 - 0,0,0	" 1339 - 4	N 3 - 1
CG12 - 0,0	" 1348 - 4,4	N 7 - 1
CG16 - 0,0,3	" 1389 - 4	N 8 - 1,1
CG17 - 0,0,0	" 1447 - 3-4	N 10 - 2
CG27 - 0,0,0,0	" 1476 - 4	N 11 - 1
CG28 - 0	" 1509 - 4,4	N 13 - 3
CG30 - 0,0		
CT6 - 0		Northwest - 4,4,4

Poplar Tree Breeding Stock in Nurseries
(Cont'd.)

OP-38 - 1,3,3-4,0-1	TS - 2
OP-45 - 0,0,0,0,0,0	Ta2 - 1,2,2
Oxford - 0-1	TS7 - 0
Rasumowskyana - 2	trichocarpa 2 - 3
	" 5 - 1,1,0,
	0-1
Rasumowskyana/ tacamahacca(313)-0	" 6 - 1,0,
	1-2
	" 11 - 3,3
Raverdeau - 3,3	
	V 14 - 0
Rochester - 1	V 23 - 1
	V 48 - 2
Roxbury - 0-1	V 55 - 3
	V 64 - 0
RT 1 - 1	V 69 - 0,1
" 2 - 1	V 94 - 1
" 4 - 4	
" 5 - 3,3	vernirubens - 3,3,
" 8 - 3,3	2-3
"10 - 1	
"13 - 1	22-11 - 4,1,2-3
"20 - 3	
"21 - 3	18P39-70S - 3
"22 - 3	69P38-50S - 1
"24 - 1	15P39-20S - 3
"25 - 1	38P38-0S - 2+
"31 - 3+	
"33 - 3	6710-39 - 2
"37 - 2	6701-39 - 3(Septoria)
"38 - 2	
"39 - 2,2	4P42-0S - 2-3
"40 - 2	6710-39 - 1
"41 - 2+	
"46 - 1	5P42-0S - 2-3
"47 - 3	11P42-0S - 2-3
"49 - 0	1P42-0S - 1,2
"51 - 2	
"52 - 3	
Rumford - 1	
Simonii 2 - 2	
Szeckuanica 1 - 1-2,2	

Examination of Poplar Disease Gardens
(Wormke's Field)

row 1 - Northwest - 4	row 9 - OP-36 - 1
" 2 - Masson - 2-3	OP-54 - 0:Sept.1
vernirubens - 1-2	OP-45 - 0:Sept.2
Carolina - 2	
" 3 - Maine - 0:Sept.1*	" 10 - Northwest - 4
Brooks 10 - 2	cathayana - 0:Sept.1
" 4 - Northwest - 4	" 11 - cathayana - 0:Sept.1
5 - Jackii 1 - 4	Tristis 1 - 1-2
Genera - 0:Sept. 1	OP-49 - 0
Calgary 23 - 0:Sept.2	" 12 - Raverdeau - 1
" 6 - Rochester - 0:Sept.2	Generosa - 2-3
Roxbury - 0:Sept. 1	? - 0:Sept.2
cathayana - 0	cathayana - 0:Sept. 1
" 7 - Northwest - 4	
8 - Strathglass - 0:Sept. 2	
22-11 - 2:Sept.1	
candicans - 0:Sept.2	

*Septoria 1 - Light

" 2 - Medium

" 3 - Heavy

Distribution List

<u>Copy No.</u>	<u>Name</u>
1	Dr. J.G. Malloch, Chairman
2	Dr. C.E. Atwood
3	Mr. D. Roy Cameron
4	Dr. N.H. Grace
5	Dr. C. Heimbarger
6	Dr. L.P.V. Johnson, Secretary
7	Mr. M.B. Morison
8	Mr. W.M. Robertson
9	Dr. H.A. Senn
10	Dr. A.J. Skolko
11	Dean C.J. Mackenzie
12	Mr. S.J. Cook (Board Room Copy)
13	Mr. S.P. Eagleson (Office Copy)
14	Dr. J.M. Swaine
15	Mr. A.W. McCallum
16	Mr. F.T. Rosser
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